7.2.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

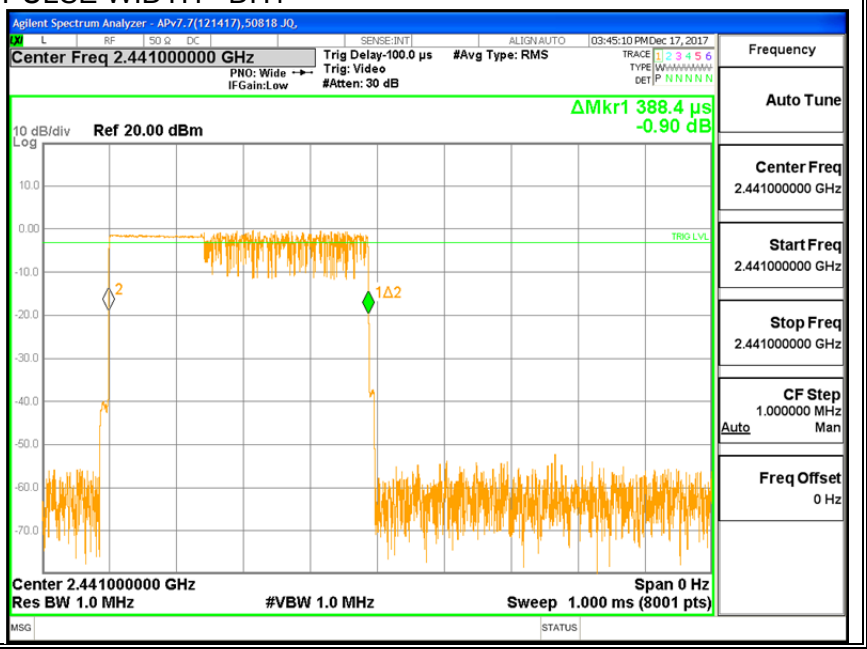
AVERAGE TIME OF OCCUPANCY

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK Normal Mode					
3-DH1	0.388	32	0.1243	0.4	-0.2757
3-DH3	1.065	17	0.1811	0.4	-0.2190
3-DH5	1.064	7	0.0745	0.4	-0.3255

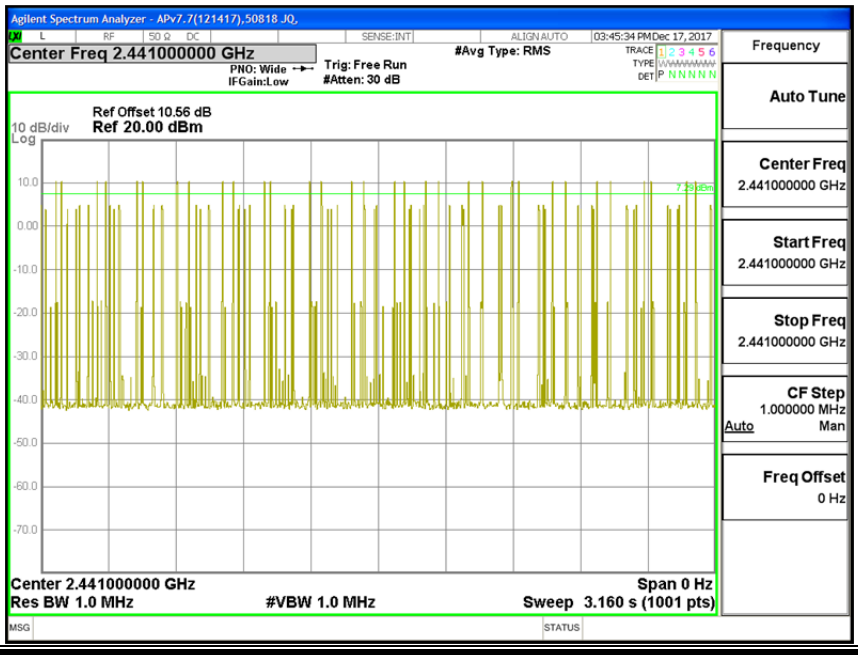
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK AFH Mode					
DH1	0.388	8	0.03106	0.4	-0.3689
DH3	1.065	4.25	0.04526	0.4	-0.3547
DH5	1.064	1.75	0.01862	0.4	-0.3814

NOTE: --

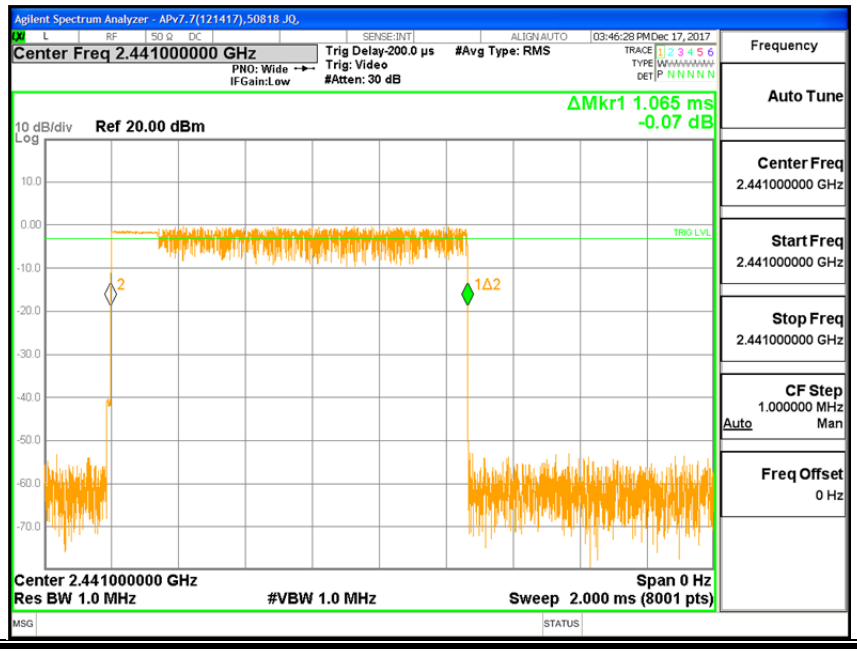
PULSE WIDTH - DH1



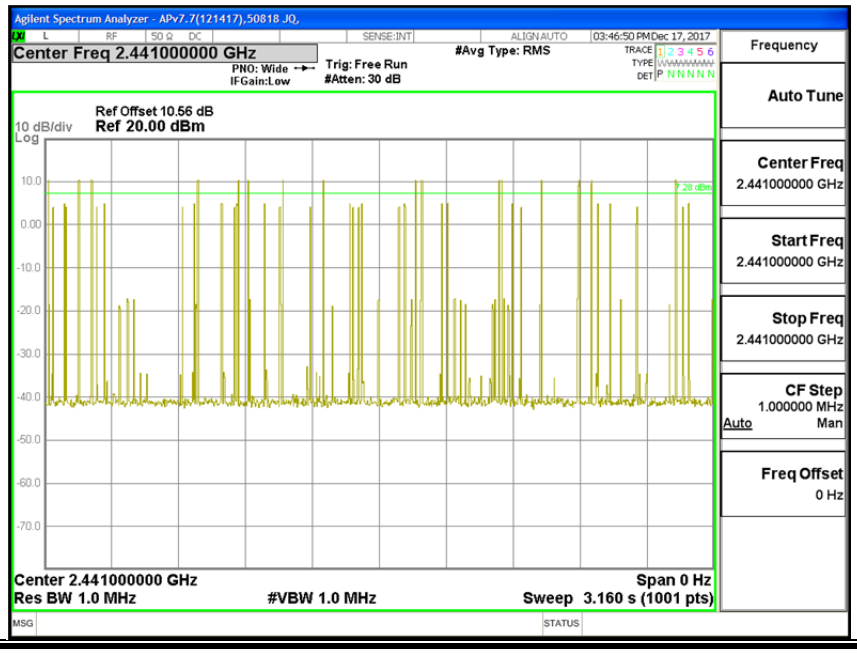
NUMBER OF PULSES - DH1



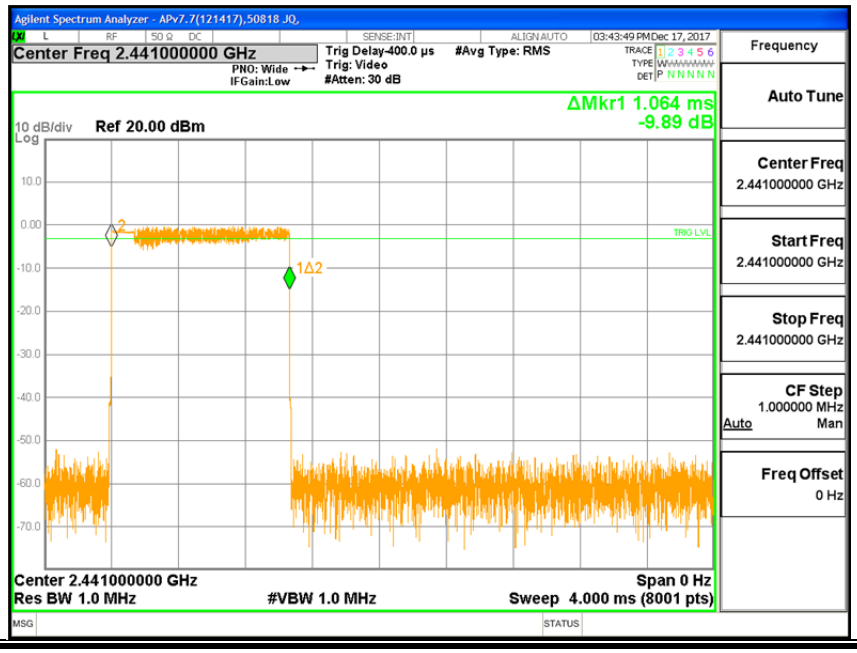
PULSE WIDTH - DH3



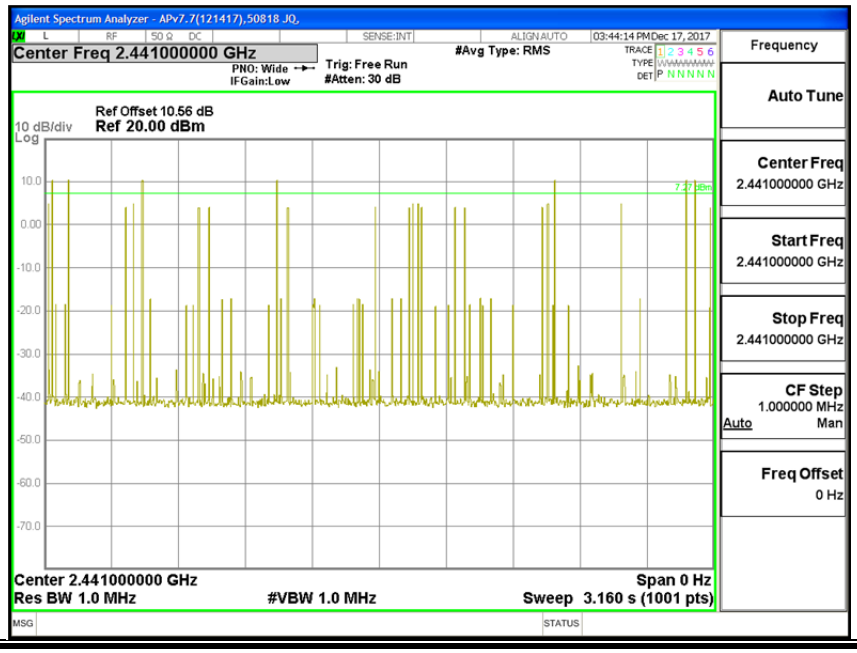
NUMBER OF PULSES - DH3



PULSE WIDTH - DH5



NUMBER OF PULSES - DH5



7.2.5. OUTPUT POWER

LIMITS

§15.247 (b) (1)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.6 dB (consisting of 10 dB pad and 0.6 dB cable) is entered as an offset in the power meter to enable direct reading of the power. The power meter is gated to measure peak power during the ON time of the transmitter.

RESULTS

TEST ENGINEER:	12506 JM	**Date:**	12/19/2017

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.10	30	-20.9
Middle	2441	**10.00**	30	-20
High	2480	7.81	30	-22.19

7.2.6. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.6 dB (consisting of 10 dB pad and 0.6 dB cable) is entered as an offset in the power meter to enable direct reading of the power. The power meter is gated to measure average power during the ON time of the transmitter.

RESULTS

TEST ENGINEER:	12506 JM	Date:	12/19/2017

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	**8.54**
Middle	2441	8.17
High	2480	7.19

7.2.7. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

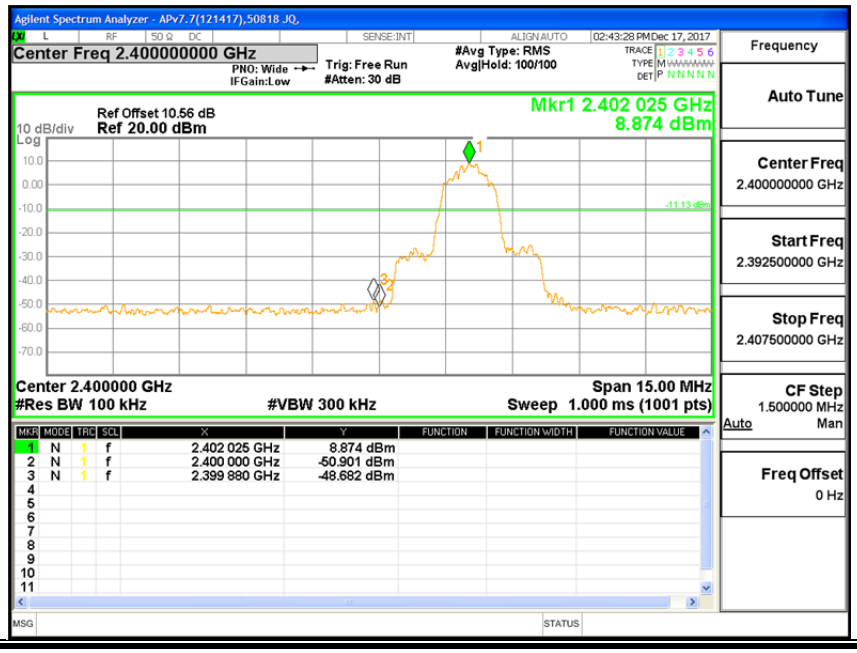
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

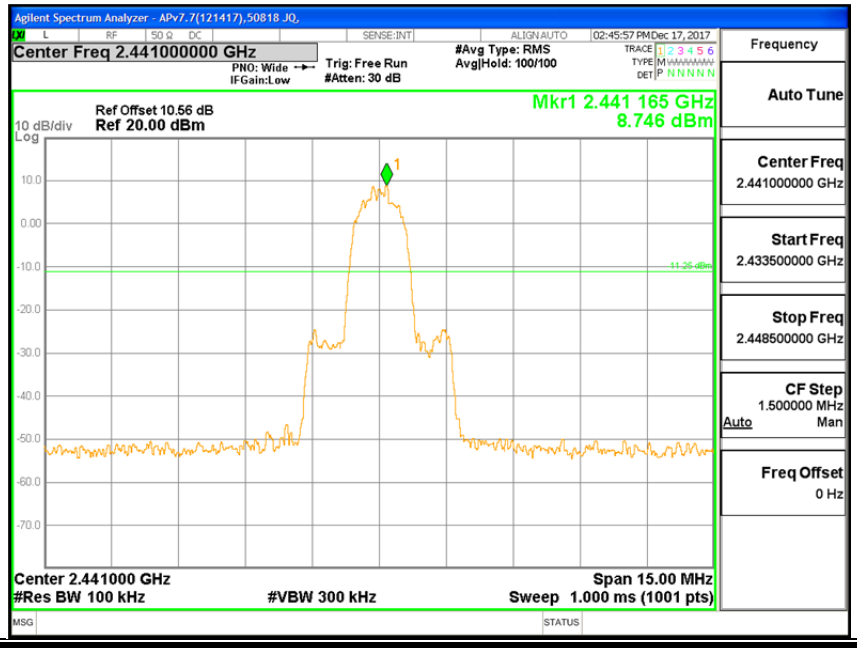
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

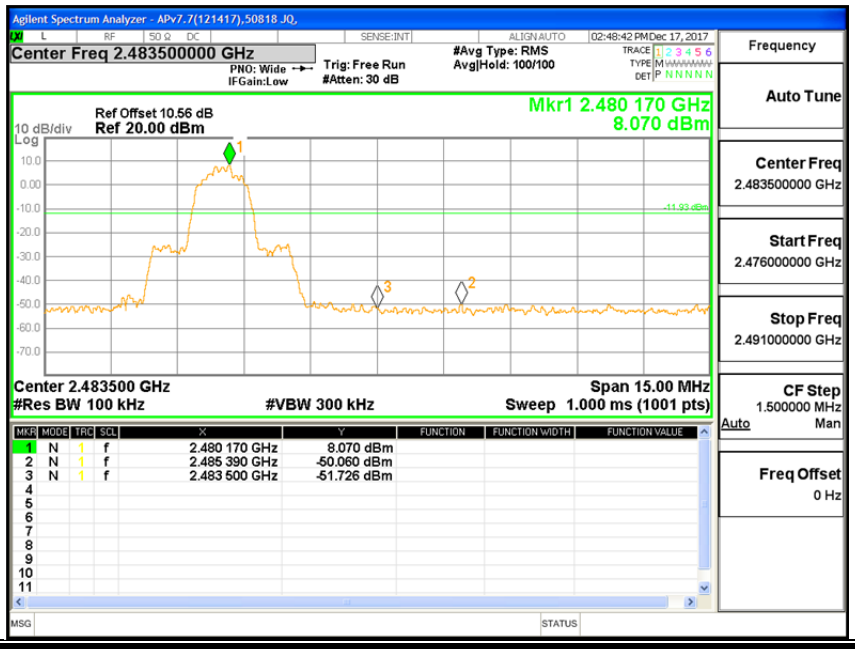
CONDUCTED BANDEDGE LOW CH



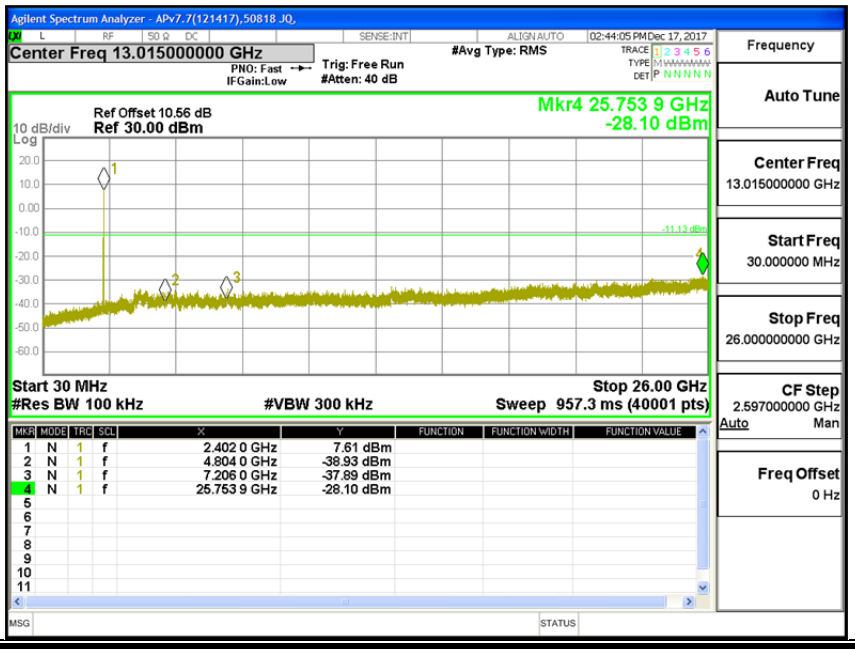
CONDUCTED BANDEDGE MID CH



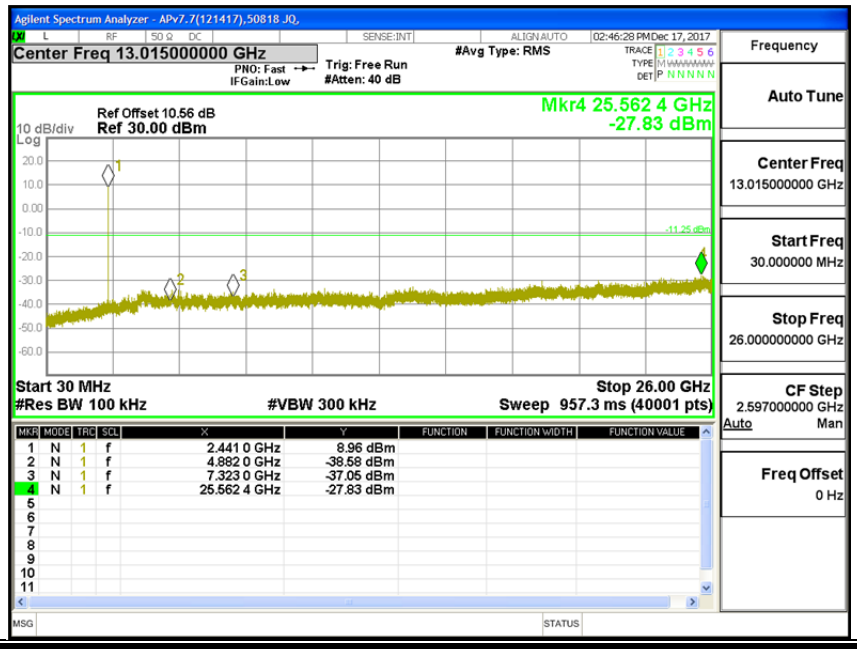
CONDUCTED BANDEDGE HIGH CH



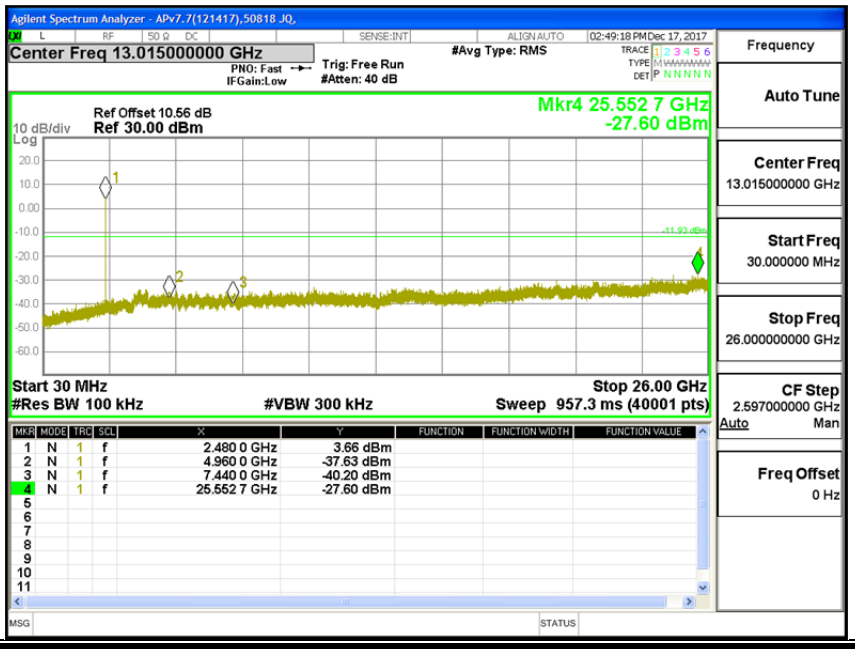
CONDUCTED SPURIOUS EMISSIONS LOW CH



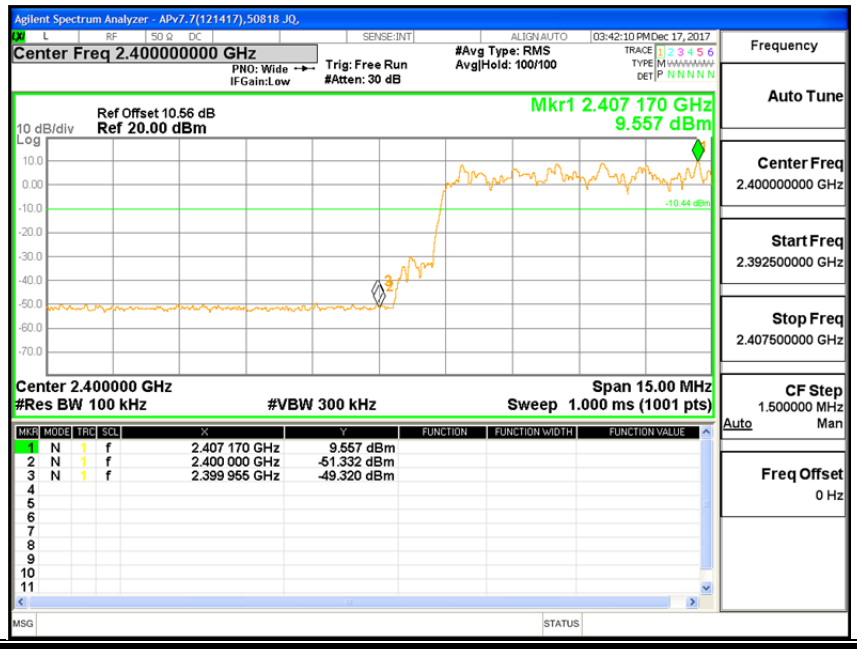
CONDUCTED SPURIOUS EMISSIONS MID CH



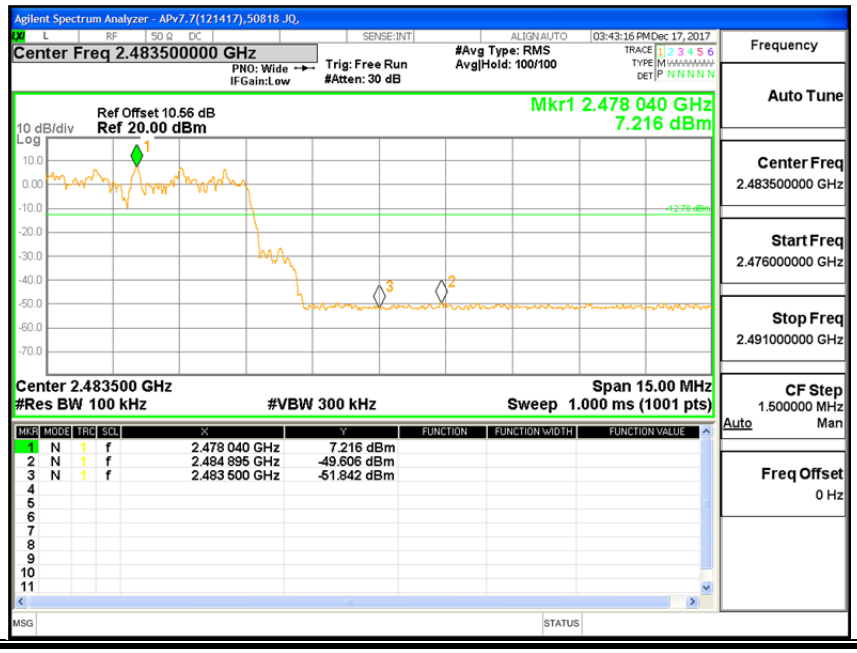
CONDUCTED SPURIOUS EMISSIONS HIGH CH



LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements 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.

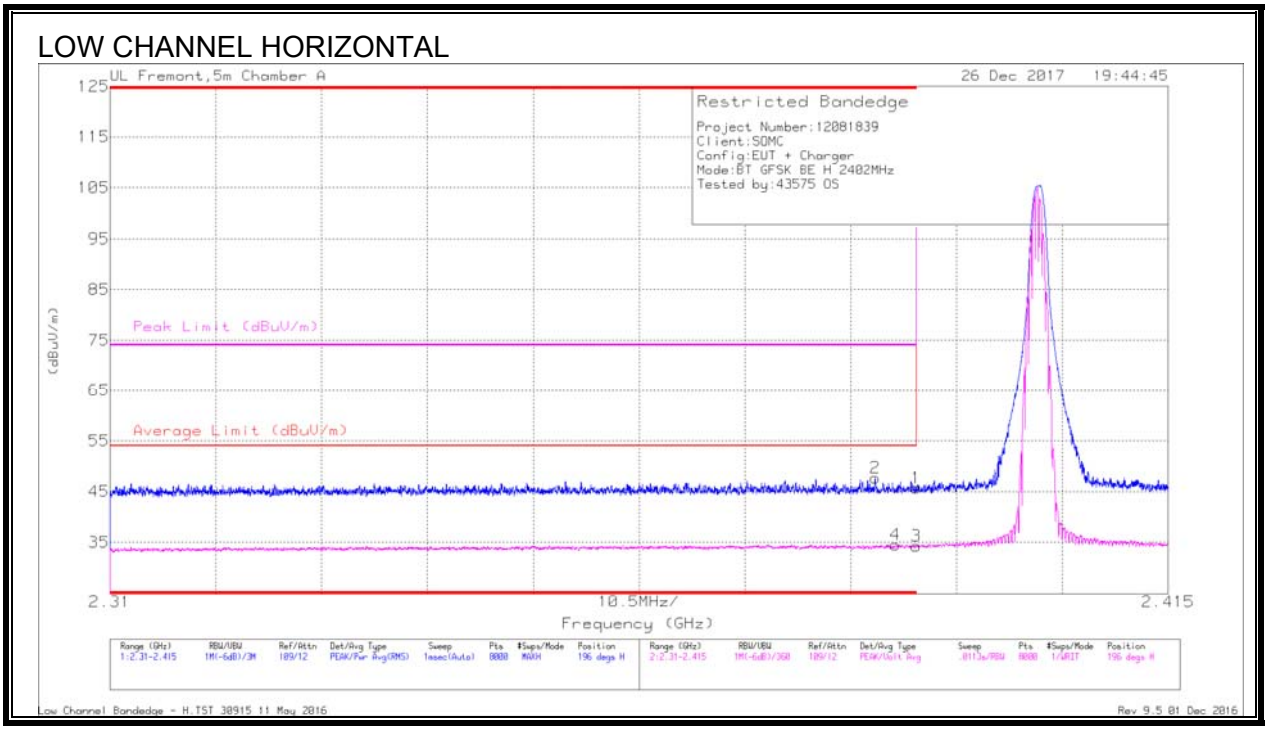
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

RESULTS

8.2. BASIC DATA RATE GFSK MODULATION

8.2.1. RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL

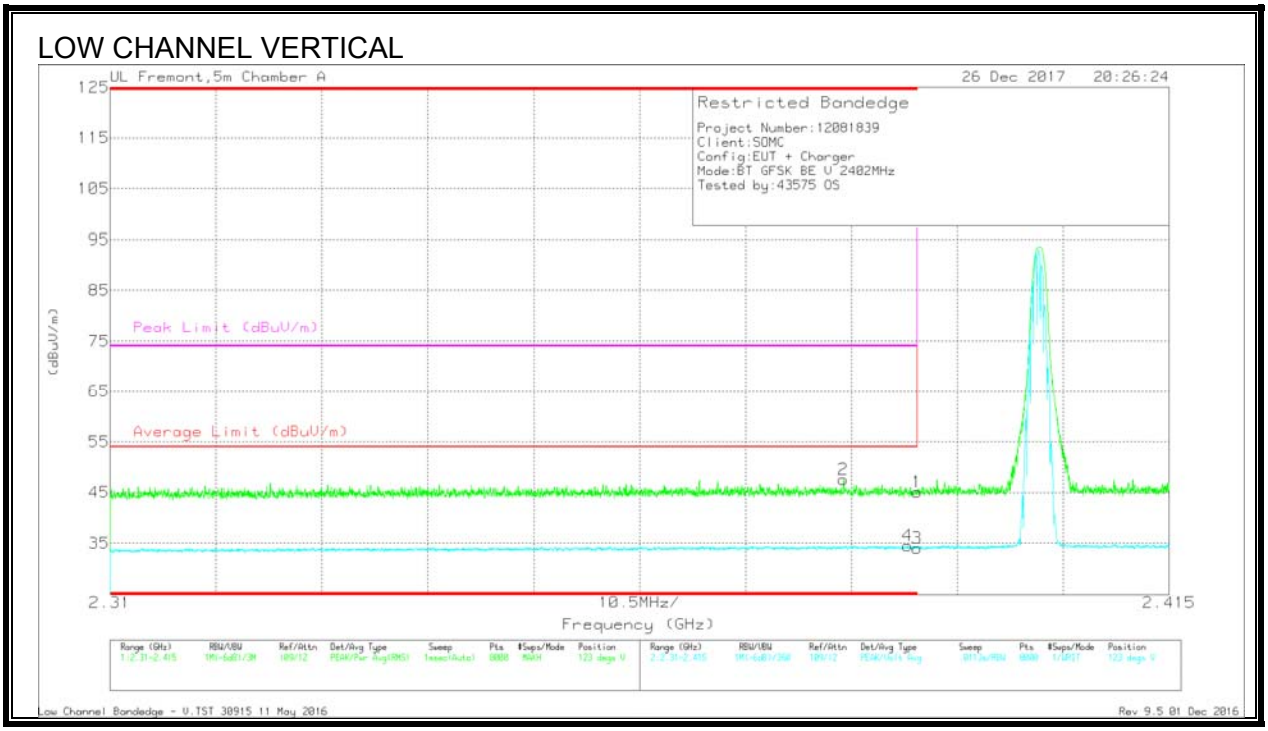


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	37.2	Pk	31.8	-23.3	45.7	-	-	74	-28.3	196	116	H
2	* 2.386	39.31	Pk	31.8	-23.4	47.71	-	-	74	-26.29	196	116	H
3	* 2.39	25.73	VA1T	31.8	-23.3	34.23	54	-19.77	-	-	196	116	H
4	* 2.388	26.01	VA1T	31.8	-23.3	34.51	54	-19.49	-	-	196	116	H

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

LOW CHANNEL VERTICAL



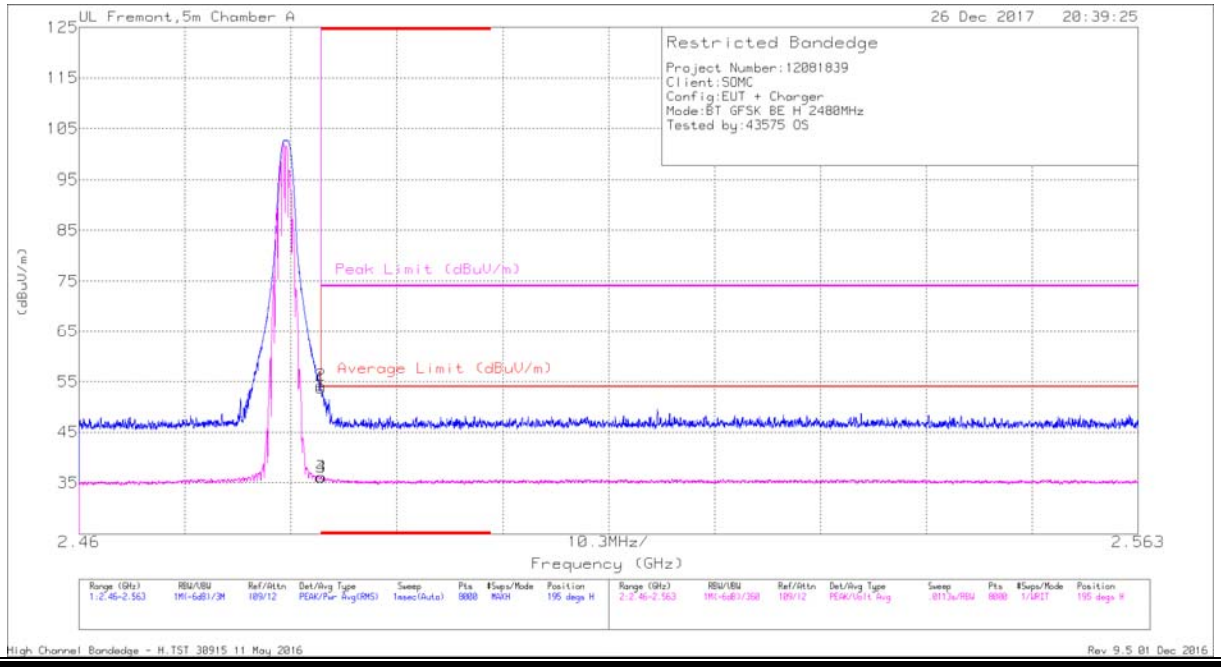
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
2	* 2.383	39.21	Pk	31.7	-23.4	47.51	-	-	74	-26.49	123	112	V
4	* 2.389	26	VA1T	31.8	-23.3	34.5	54	-19.5	-	-	123	112	V
1	* 2.39	36.55	Pk	31.8	-23.3	45.05	-	-	74	-28.95	123	112	V
3	* 2.39	25.54	VA1T	31.8	-23.3	34.04	54	-19.96	-	-	123	112	V

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

8.2.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL

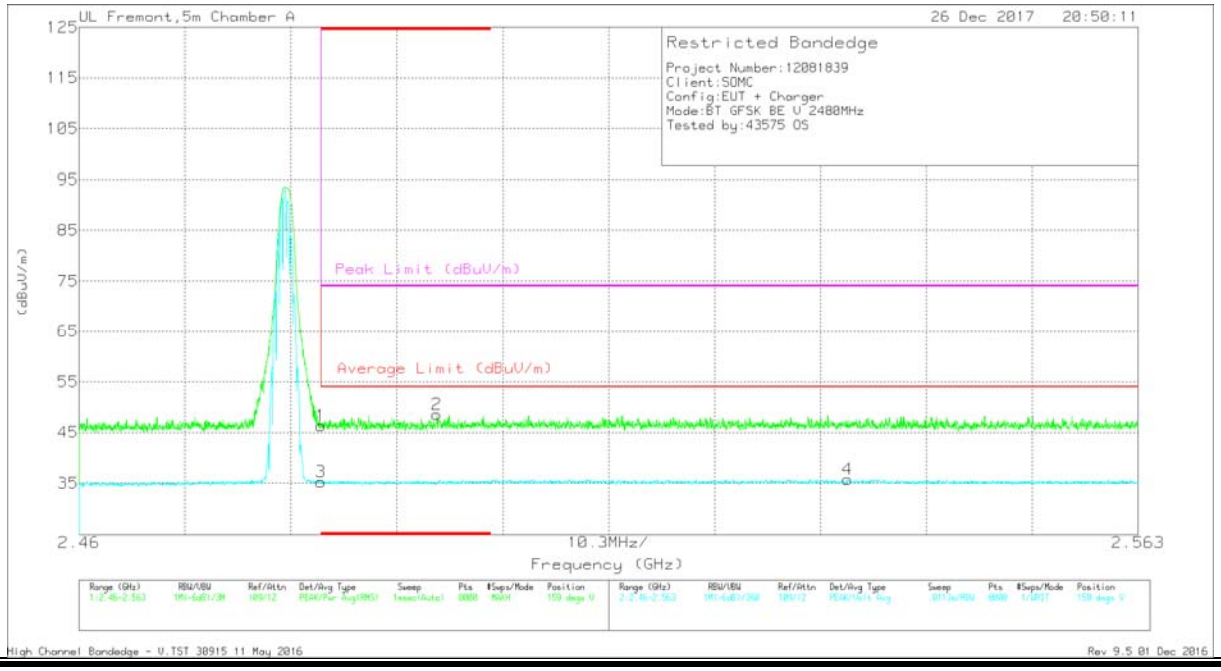


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	44.68	Pk	32.3	-23.2	53.78	-	-	74	-20.22	195	102	H
2	* 2.484	45.14	Pk	32.3	-23.2	54.24	-	-	74	-19.76	195	102	H
3	* 2.484	26.99	VA1T	32.3	-23.2	36.09	54	-17.91	-	-	195	102	H
4	* 2.484	27.01	VA1T	32.3	-23.2	36.11	54	-17.89	-	-	195	102	H

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

HIGH CHANNEL VERTICAL



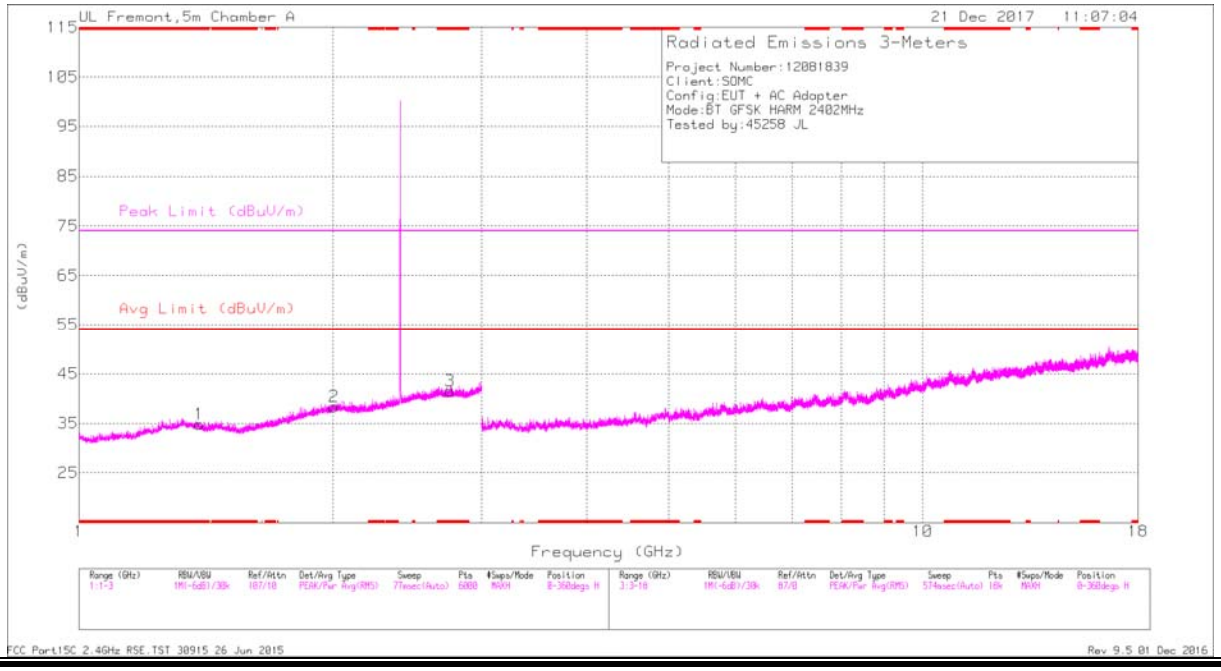
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	37.25	Pk	32.3	-23.2	46.35	-	-	74	-27.65	159	101	V
3	* 2.484	26.17	VA1T	32.3	-23.2	35.27	54	-18.73	-	-	159	101	V
2	* 2.495	39.42	Pk	32.4	-23.3	48.52	-	-	74	-25.48	159	101	V
4	2.535	26.45	VA1T	32.4	-23.1	35.75	54	-18.25	-	-	159	101	V

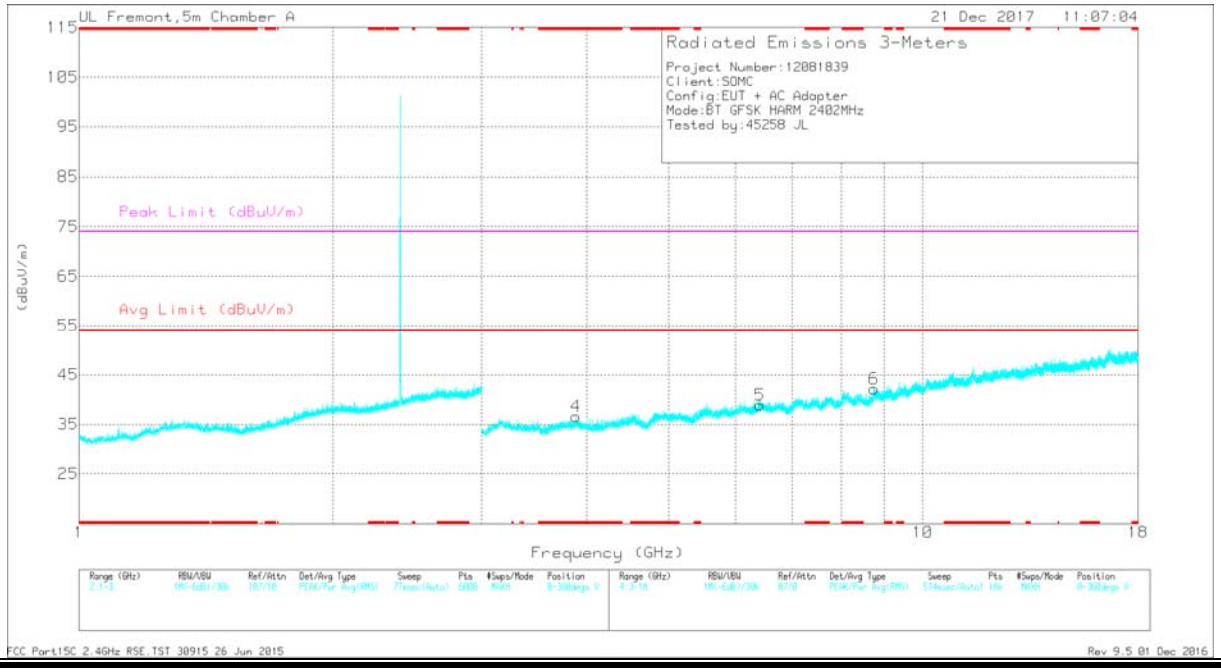
* - indicates frequency in CFR47 Pt 15 - Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

8.2.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL

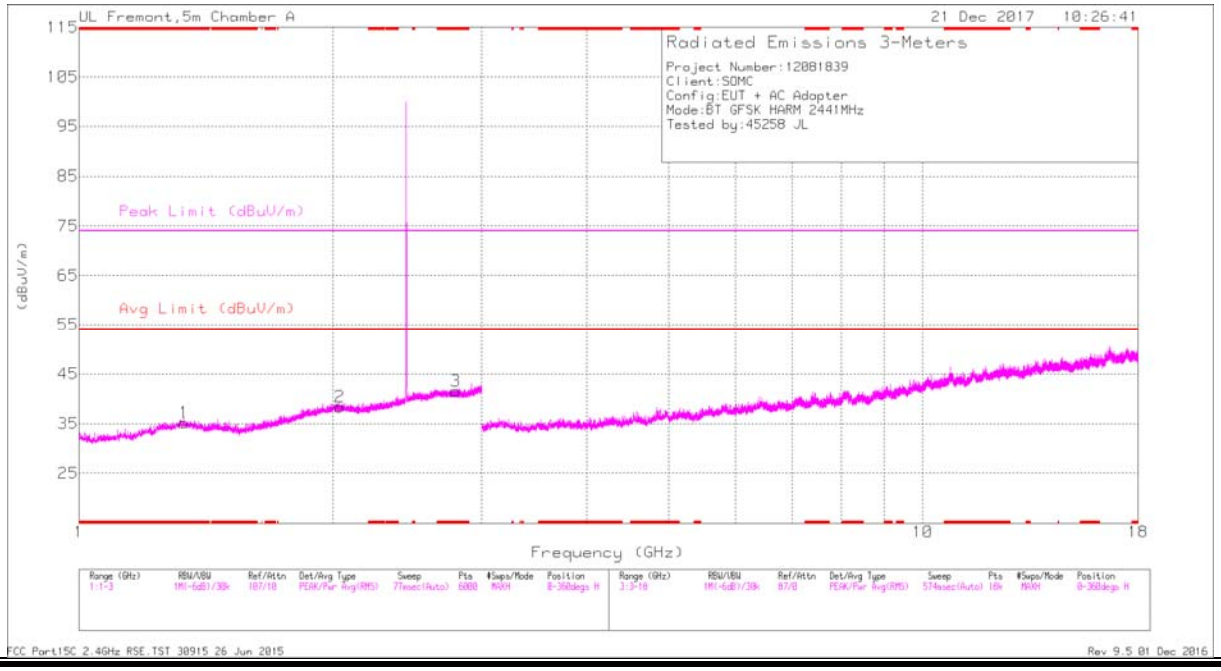


Radiated Emissions

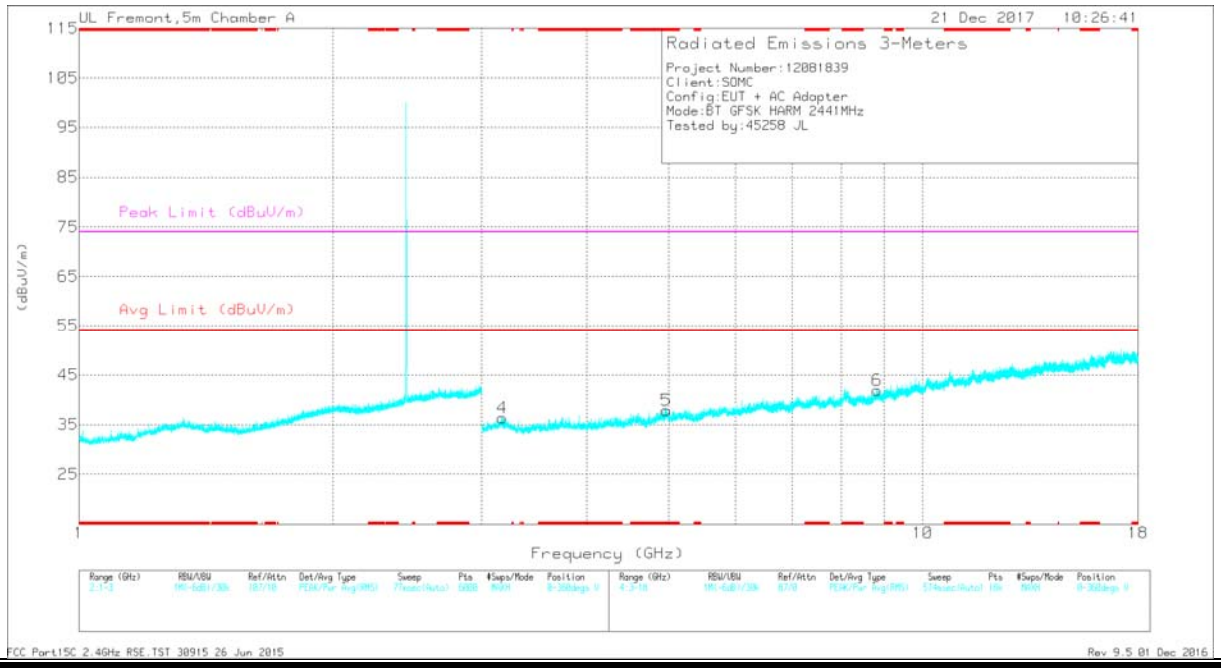
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.39	36.85	PKFH	28.8	-23.5	42.15	-	-	74	-31.85	323	134	H
	* 1.388	22.72	VA1T	28.8	-23.5	28.02	54	-25.98	-	-	323	134	H
3	* 2.753	37.55	PKFH	32.3	-22.5	47.35	-	-	74	-26.65	260	184	H
	* 2.752	24.03	VA1T	32.3	-22.5	33.83	54	-20.17	-	-	260	184	H
4	* 3.883	37.93	PKFH	33.1	-28.2	42.83	-	-	74	-31.17	221	173	V
	* 3.883	24.08	VA1T	33.1	-28.2	28.98	54	-25.02	-	-	221	173	V
2	2.008	36.49	PKFH	31.4	-23.2	44.69	-	-	-	-	293	165	H
	2.009	23.32	VA1T	31.4	-23.2	31.52	-	-	-	-	293	165	H
5	6.414	34.99	PKFH	35.8	-24.2	46.59	-	-	-	-	105	207	V
	6.415	21.38	VA1T	35.8	-24.3	32.88	-	-	-	-	105	207	V
6	8.751	33.52	PKFH	36	-21.1	48.42	-	-	-	-	75	241	V
	8.753	19.78	VA1T	36	-21.1	34.68	-	-	-	-	75	241	V

* - indicates frequency in CFR47 Pt 15 - 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

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL

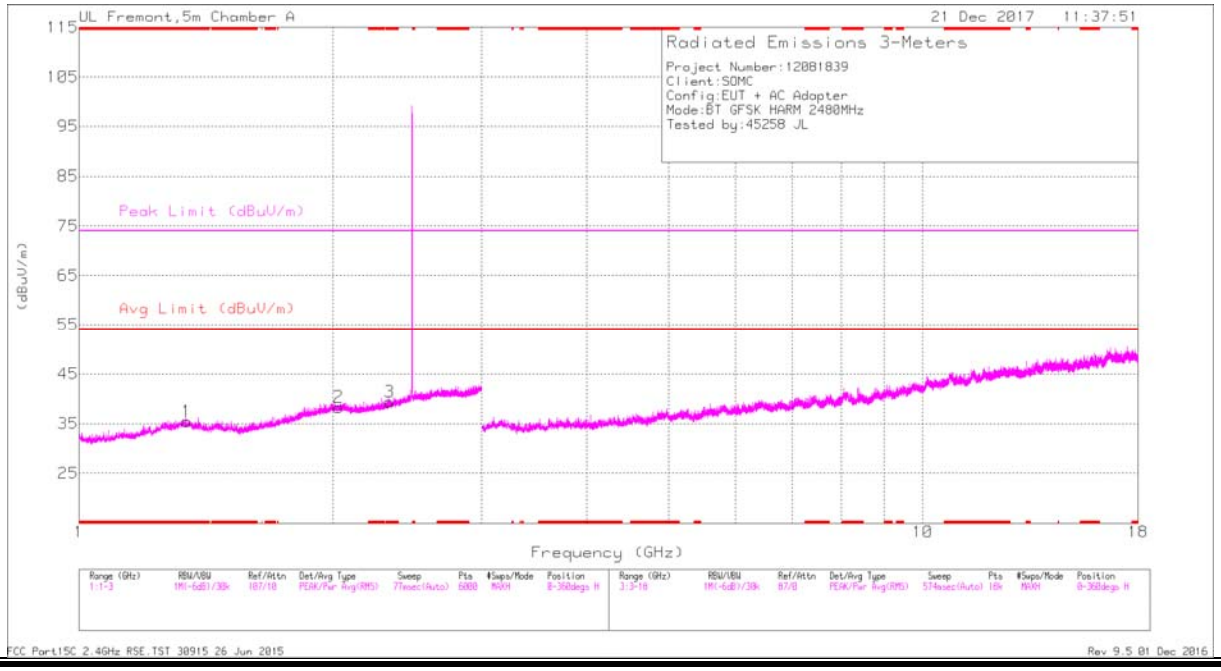


Radiated Emissions

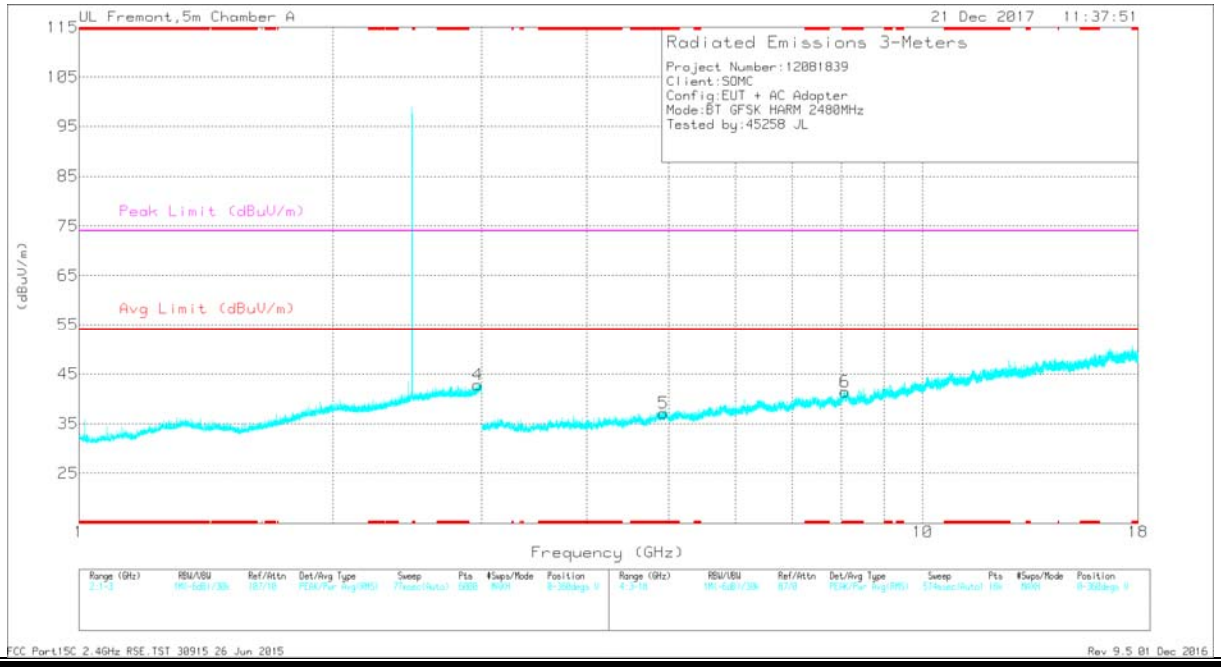
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.329	36.07	PKFH	29.5	-23.6	41.97	-	-	74	-32.03	68	183	H
	* 1.33	22.77	VA1T	29.5	-23.6	28.67	54	-25.33	-	-	68	183	H
3	* 2.798	37.57	PKFH	32.2	-22.3	47.47	-	-	74	-26.53	175	245	H
	* 2.797	24.01	VA1T	32.2	-22.3	33.91	54	-20.09	-	-	175	245	H
5	* 4.969	37.8	PKFH	34.2	-27.1	44.9	-	-	74	-29.1	193	236	V
	* 4.969	24.21	VA1T	34.2	-27.1	31.31	54	-22.69	-	-	193	236	V
2	2.037	36.85	PKFH	31.4	-23.3	44.95	-	-	-	-	118	218	H
	2.039	23.46	VA1T	31.4	-23.3	31.56	-	-	-	-	118	218	H
4	3.172	36.91	PKFH	32.9	-27.7	42.11	-	-	-	-	235	201	V
	3.172	23.76	VA1T	32.9	-27.7	28.96	-	-	-	-	235	201	V
6	8.826	33.81	PKFH	36.1	-20.7	49.21	-	-	-	-	322	187	V
	8.827	19.66	VA1T	36.1	-20.7	35.06	-	-	-	-	322	187	V

* - indicates frequency in CFR47 Pt 15 - 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

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Radiated Emissions

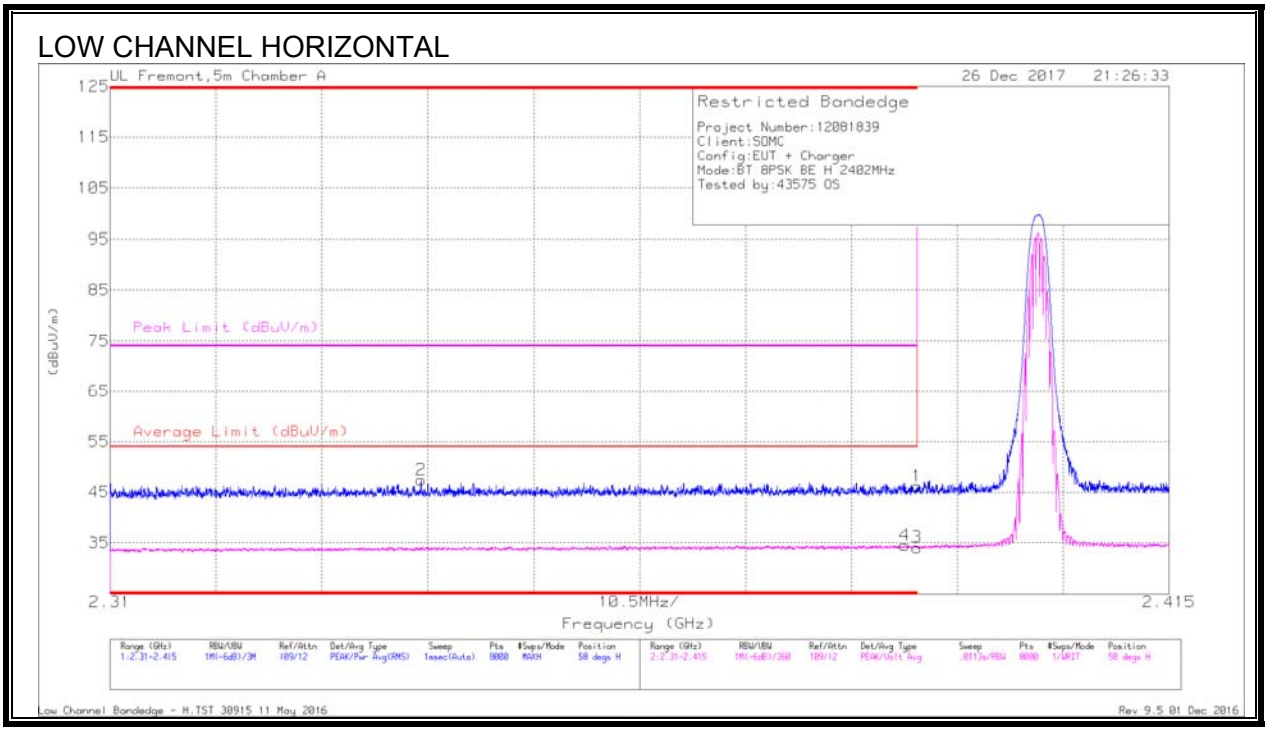
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.339	36.39	PKFH	29.5	-23.6	42.29	-	-	74	-31.71	47	142	H
	* 1.339	22.61	VA1T	29.5	-23.7	28.41	54	-25.59	-	-	47	142	H
3	* 2.333	37.33	PKFH	31.6	-23.4	45.53	-	-	74	-28.47	99	198	H
	* 2.335	23.84	VA1T	31.6	-23.4	32.04	54	-21.96	-	-	99	198	H
5	* 4.927	37	PKFH	34.2	-26.6	44.6	-	-	74	-29.4	240	218	V
	* 4.928	23.21	VA1T	34.2	-26.6	30.81	54	-23.19	-	-	240	218	V
6	* 8.086	33.73	PKFH	35.8	-21.2	48.33	-	-	74	-25.67	306	188	V
	* 8.088	19.86	VA1T	35.8	-21.3	34.36	54	-19.64	-	-	306	188	V
2	2.029	23.27	VA1T	31.4	-23.2	31.47	-	-	-	-	72	177	H
	2.031	36.99	PKFH	31.4	-23.2	45.19	-	-	-	-	72	177	H
4	2.966	37.56	PKFH	32.2	-21.8	47.96	-	-	-	-	160	237	V
	2.969	24.03	VA1T	32.2	-21.7	34.53	-	-	-	-	160	237	V

* - indicates frequency in CFR47 Pt 15 - 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

8.3. ENHANCED DATA RATE 8PSK MODULATION

8.3.1. RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL

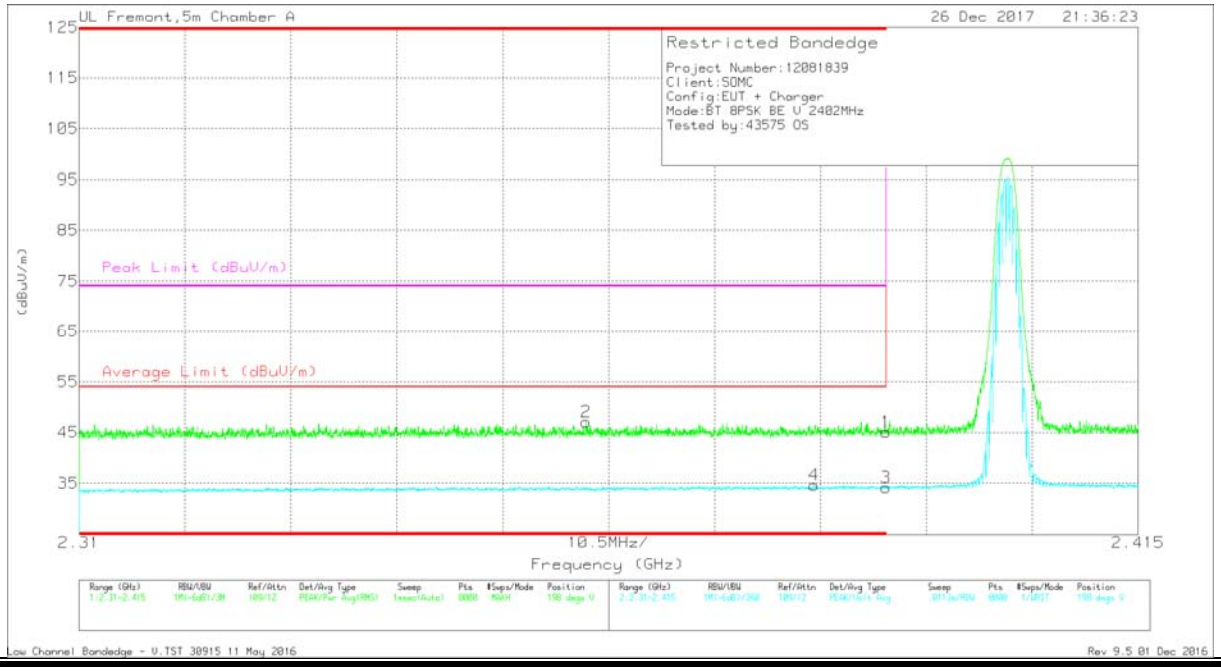


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
2	* 2.341	39.25	Pk	31.6	-23.4	47.45	-	-	74	-26.55	58	236	H
4	* 2.389	26	VA1T	31.8	-23.3	34.5	54	-19.5	-	-	58	236	H
1	* 2.39	37.68	Pk	31.8	-23.3	46.18	-	-	74	-27.82	58	236	H
3	* 2.39	25.59	VA1T	31.8	-23.3	34.09	54	-19.91	-	-	58	236	H

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

LOW CHANNEL VERTICAL



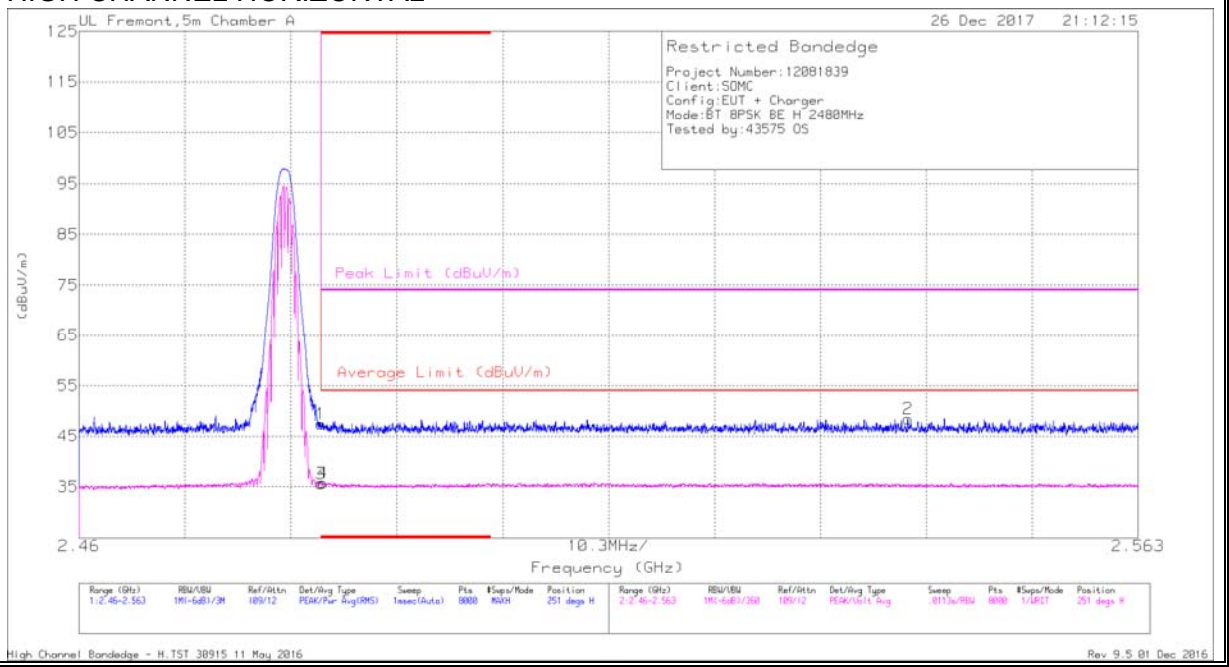
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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
2	* 2.36	38.87	Pk	31.6	-23.4	47.07	-	-	74	-26.93	198	379	V
4	* 2.383	26.3	VA1T	31.7	-23.4	34.6	54	-19.4	-	-	198	379	V
1	* 2.39	36.62	Pk	31.8	-23.3	45.12	-	-	74	-28.88	198	379	V
3	* 2.39	25.7	VA1T	31.8	-23.3	34.2	54	-19.8	-	-	198	379	V

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

8.3.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL

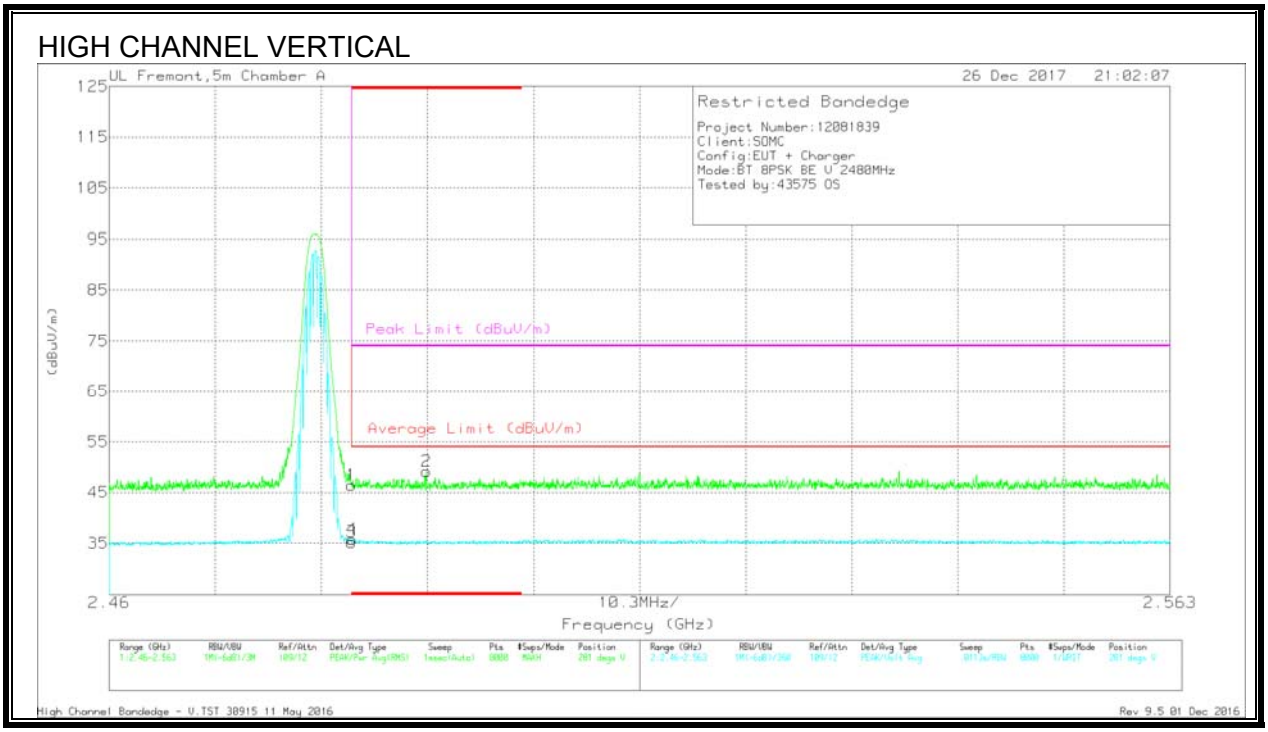


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	38.39	Pk	32.3	-23.2	47.49	-	-	74	-26.51	251	396	H
3	* 2.484	26.5	VA1T	32.3	-23.2	35.6	54	-18.4	-	-	251	396	H
4	* 2.484	26.68	VA1T	32.3	-23.2	35.78	54	-18.22	-	-	251	396	H
2	2.541	39.28	Pk	32.4	-23.2	48.48	-	-	74	-25.52	251	396	H

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

HIGH CHANNEL VERTICAL



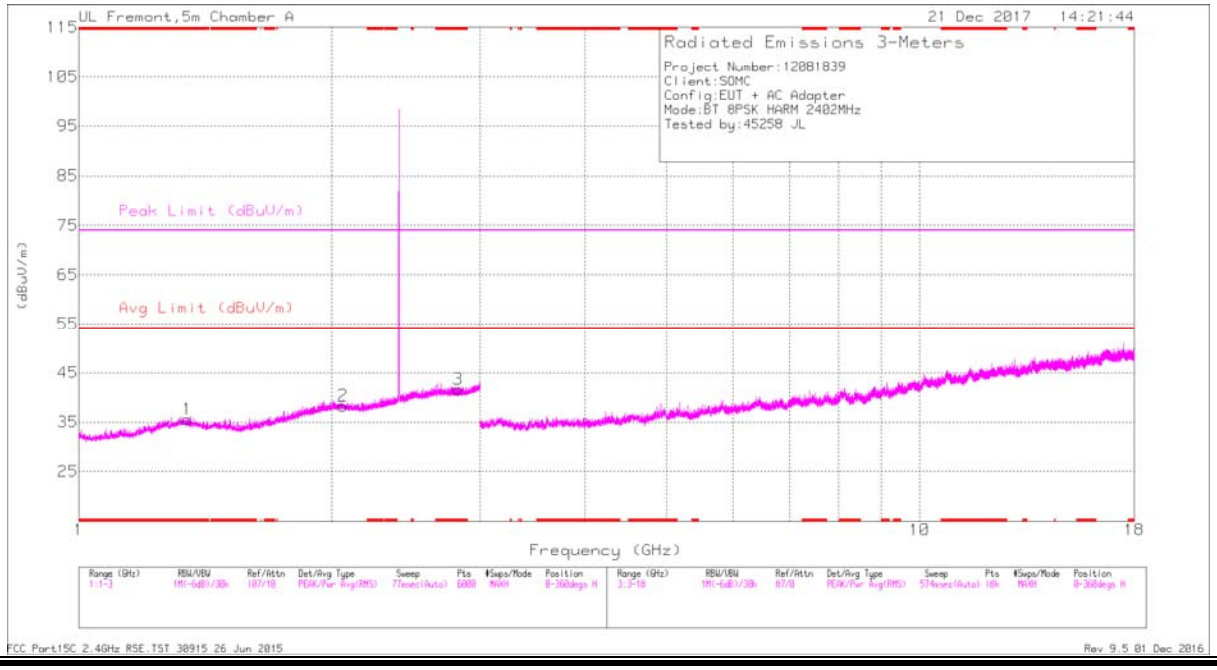
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	37.39	Pk	32.3	-23.2	46.49	-	-	74	-27.51	281	395	V
3	* 2.484	26.11	VA1T	32.3	-23.2	35.21	54	-18.79	-	-	281	395	V
4	* 2.484	26.67	VA1T	32.3	-23.2	35.77	54	-18.23	-	-	281	395	V
2	* 2.491	40.05	Pk	32.4	-23.3	49.15	-	-	74	-24.85	281	395	V

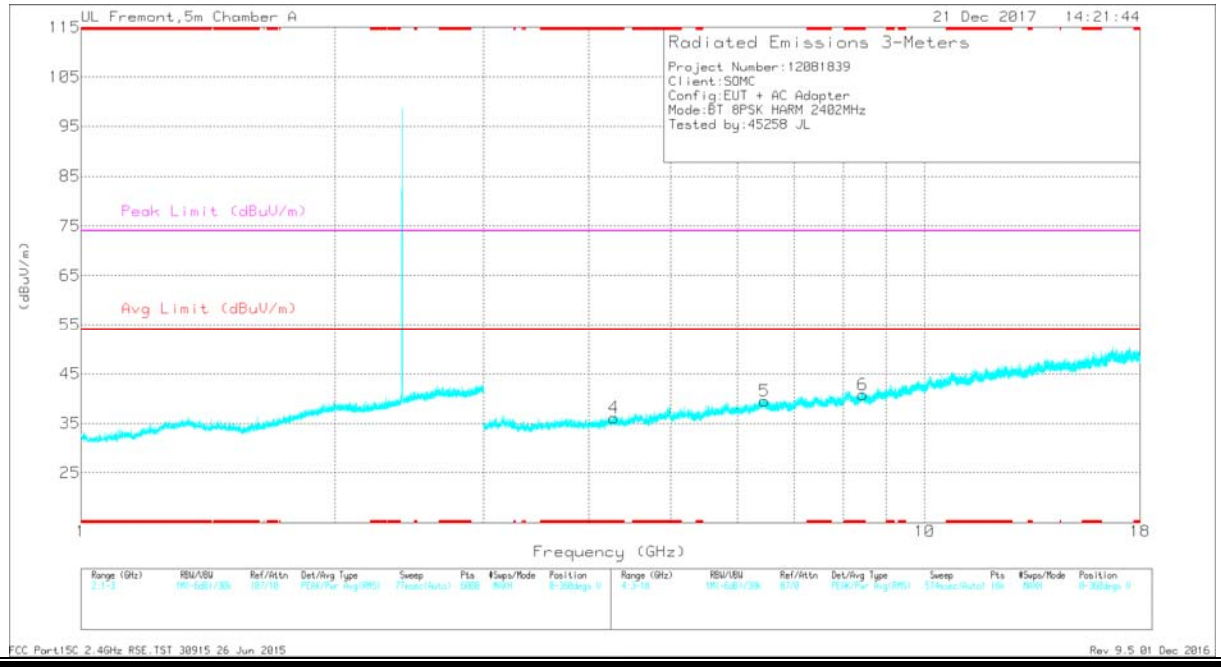
* - indicates frequency in CFR47 Pt 15 - Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

8.3.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL

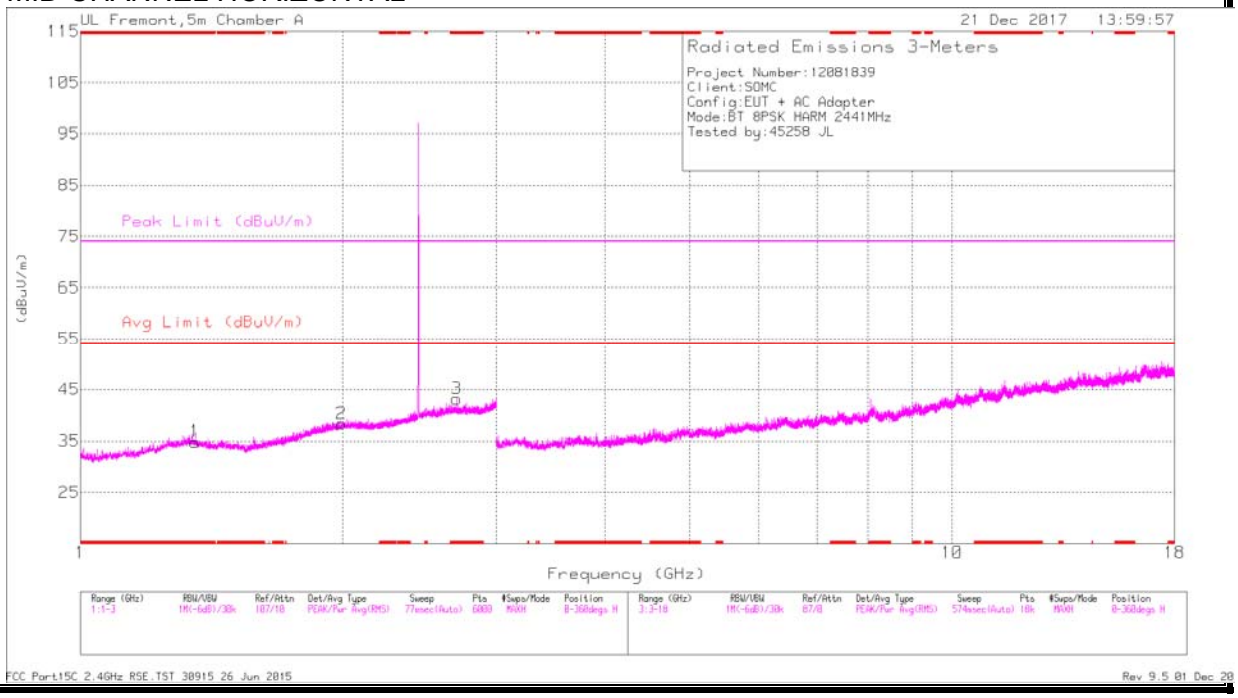


Radiated Emissions

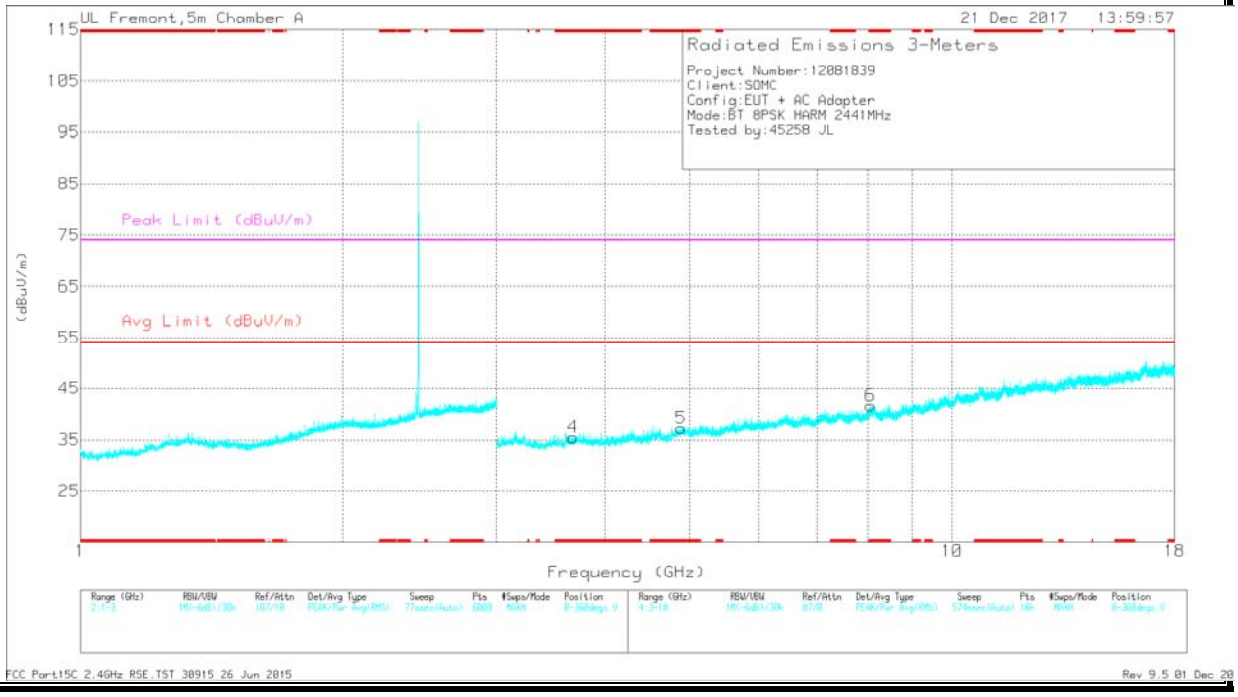
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.345	36.43	PKFH	29.5	-23.5	42.43	-	-	74	-31.57	53	138	H
	* 1.344	22.64	VA1T	29.5	-23.5	28.64	54	-25.36	-	-	53	138	H
3	* 2.824	37.54	PKFH	32.2	-22.2	47.54	-	-	74	-26.46	154	201	H
	* 2.825	24.2	VA1T	32.2	-22.2	34.2	54	-19.8	-	-	154	201	H
4	* 4.278	36.82	PKFH	33.5	-27.2	43.12	-	-	74	-30.88	204	246	V
	* 4.278	23.58	VA1T	33.5	-27.2	29.88	54	-24.12	-	-	204	246	V
6	* 8.442	34.14	PKFH	35.8	-21.3	48.64	-	-	74	-25.36	320	146	V
	* 8.442	20.12	VA1T	35.8	-21.3	34.62	54	-19.38	-	-	320	146	V
2	2.062	23.56	VA1T	31.3	-23.3	31.56	-	-	-	-	96	177	H
	2.063	36.71	PKFH	31.3	-23.3	44.71	-	-	-	-	96	177	H
5	6.453	21.17	VA1T	35.8	-23.7	33.27	-	-	-	-	250	191	V
	6.456	34.34	PKFH	35.8	-23.7	46.44	-	-	-	-	250	191	V

* - indicates frequency in CFR47 Pt 15 - 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

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL

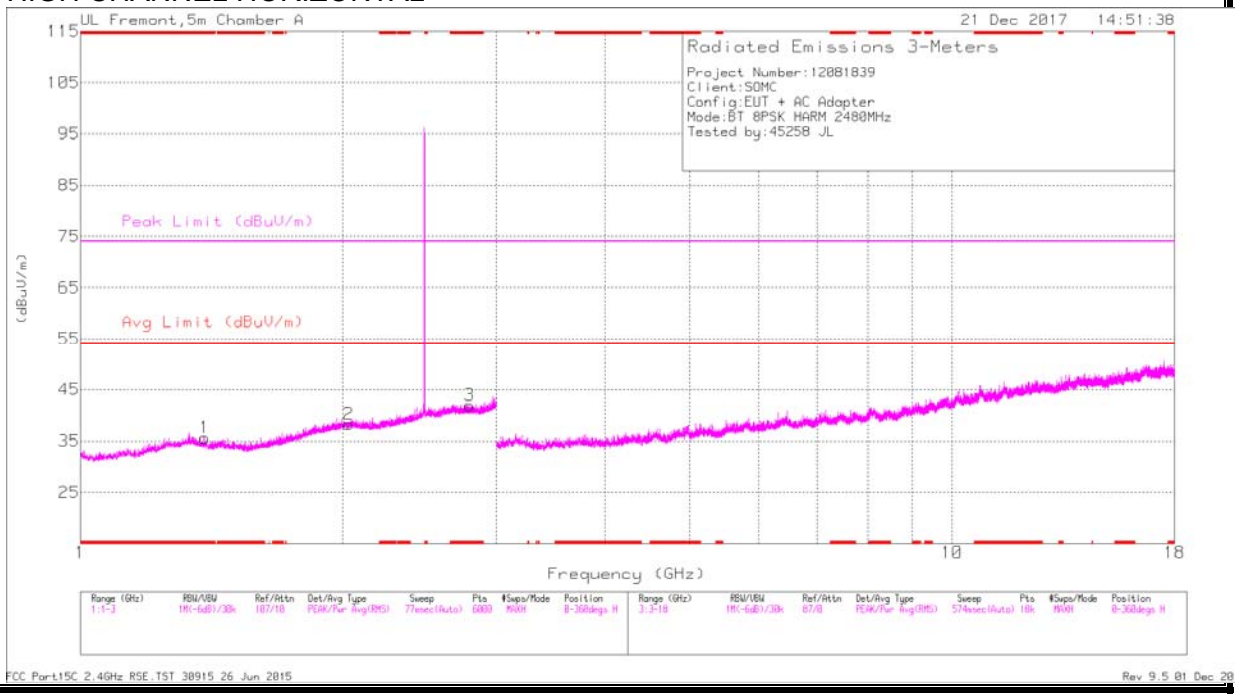


Radiated Emissions

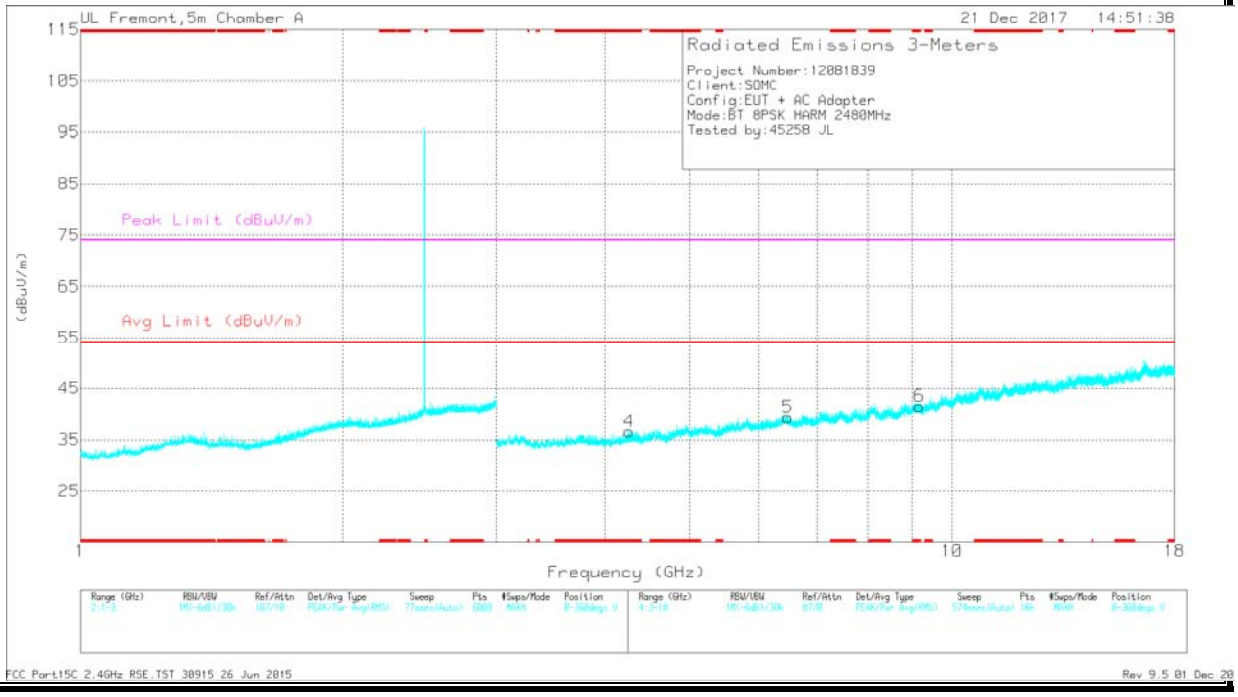
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.355	36.98	PKFH	29.4	-23.5	42.88	-	-	74	-31.12	313	182	H
	* 1.354	22.51	VA1T	29.4	-23.6	28.31	54	-25.69	-	-	313	182	H
3	* 2.701	37.79	PKFH	32.5	-22.7	47.59	-	-	74	-26.41	204	174	H
	* 2.704	24.05	VA1T	32.5	-22.7	33.85	54	-20.15	-	-	204	174	H
4	* 3.674	37.75	PKFH	33	-28.4	42.35	-	-	74	-31.65	151	207	V
	* 3.675	24.33	VA1T	33	-28.4	28.93	54	-25.07	-	-	151	207	V
5	* 4.886	37.02	PKFH	34.1	-26.3	44.82	-	-	74	-29.18	61	236	V
	* 4.887	23.22	VA1T	34.1	-26.2	31.12	54	-22.88	-	-	61	236	V
6	* 8.059	33.72	PKFH	35.9	-21.4	48.22	-	-	74	-25.78	88	211	V
	* 8.058	20.24	VA1T	35.9	-21.4	34.74	54	-19.26	-	-	88	211	V
2	1.993	23.18	VA1T	31.4	-23.2	31.38	-	-	-	-	266	144	H
	1.994	37.12	PKFH	31.4	-23.2	45.32	-	-	-	-	266	144	H

* - indicates frequency in CFR47 Pt 15 - 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

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Radiated Emissions

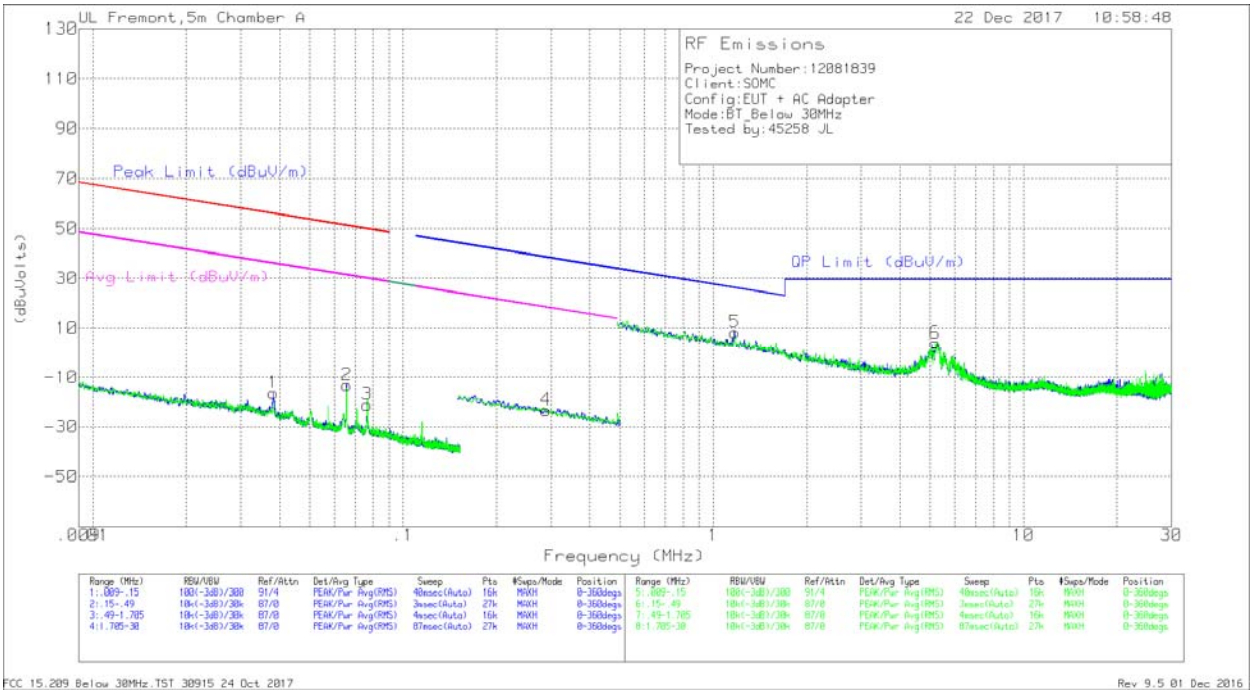
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.39	36.37	PKFH	28.8	-23.5	41.67	-	-	74	-32.33	273	172	H
	* 1.39	22.69	VA1T	28.8	-23.5	27.99	54	-26.01	-	-	273	172	H
3	* 2.797	37.87	PKFH	32.2	-22.3	47.77	-	-	74	-26.23	212	179	H
	* 2.798	23.95	VA1T	32.2	-22.3	33.85	54	-20.15	-	-	212	179	H
4	* 4.256	36.95	PKFH	33.5	-27.4	43.05	-	-	74	-30.95	159	211	V
	* 4.257	23.58	VA1T	33.5	-27.4	29.68	54	-24.32	-	-	159	211	V
6	* 9.168	33.59	PKFH	36.4	-20.8	49.19	-	-	74	-24.81	97	230	V
	* 9.169	19.76	VA1T	36.4	-20.9	35.26	54	-18.74	-	-	97	230	V
2	2.03	37.07	PKFH	31.4	-23.2	45.27	-	-	-	-	249	198	H
	2.03	23.36	VA1T	31.4	-23.2	31.56	-	-	-	-	249	198	H
5	6.482	34.86	PKFH	35.7	-23.9	46.66	-	-	-	-	79	195	V
	6.484	20.86	VA1T	35.7	-23.9	32.66	-	-	-	-	79	195	V

* - indicates frequency in CFR47 Pt 15 - 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

8.4. WORST-CASE BELOW 30 MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL PLOTS



NOTE: KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.03816	48.54	Pk	15	.1	-80	-16.36	55.95	-72.31	35.95	-52.31	-	-	-	-	0-360
2	.0658	52.39	Pk	14.3	.1	-80	-13.21	51.22	-64.43	31.22	-44.43	-	-	-	-	0-360
3	.0766	44.61	Pk	14.2	.1	-80	-21.09	49.9	-70.99	29.9	-50.99	-	-	-	-	0-360
4	.28889	42.86	Pk	13.8	.1	-80	-23.24	-	-	-	-	38.4	-61.64	18.4	-41.64	0-360

Pk - Peak detector

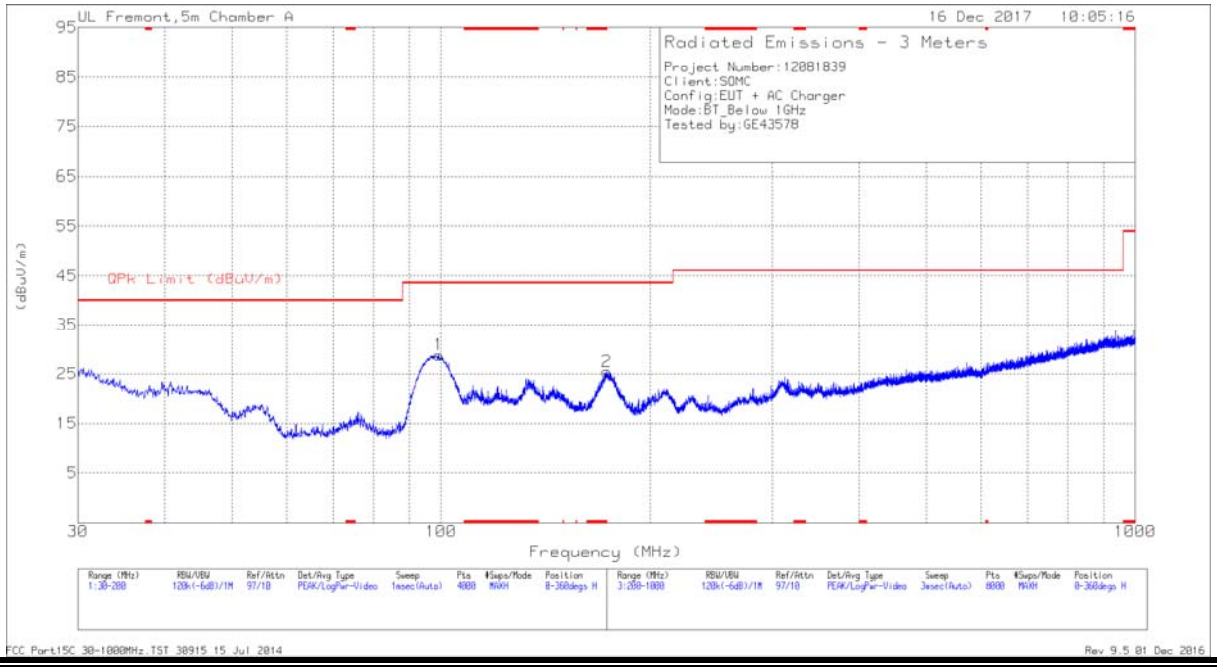
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	1.17233	33.84	Pk	14.3	.2	-40	8.34	26.24	-17.9	-	-	-	-	0-360
6	5.19641	29.26	Pk	14.4	.3	-40	3.96	29.5	-25.54	-	-	-	-	0-360

Pk - Peak detector

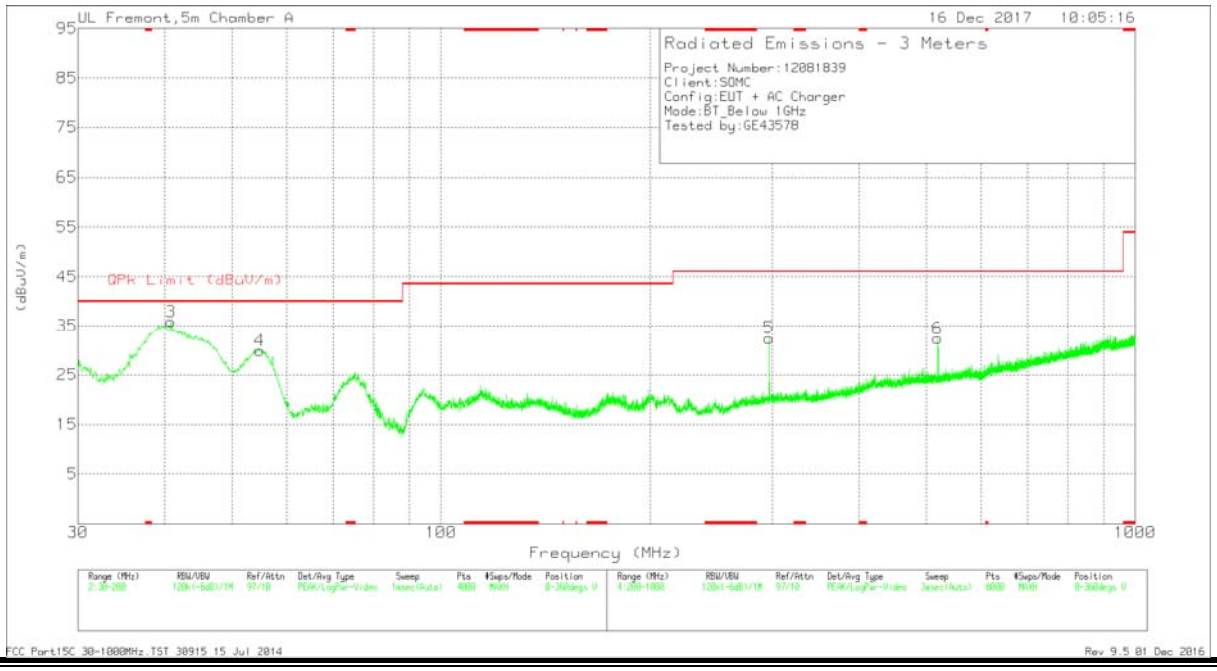
8.5. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Trace Markers

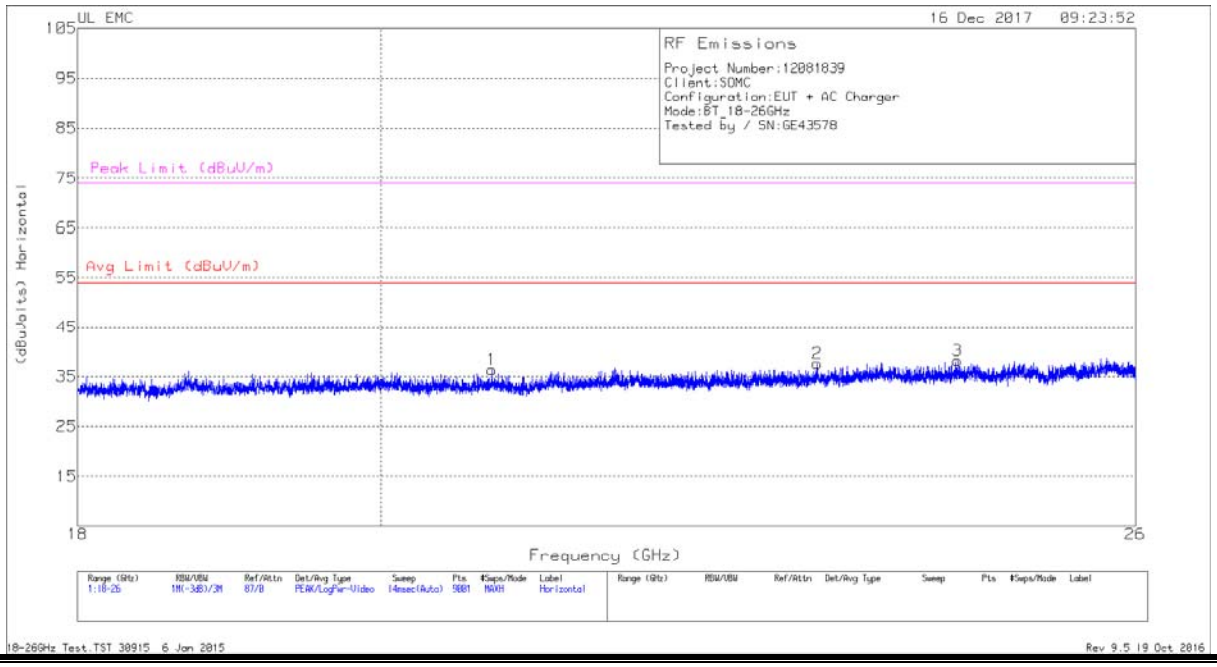
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 173.177	35.48	Pk	15.6	-25.6	25.48	43.52	-18.04	0-360	200	H
3	40.8581	41.21	Qp	17.3	-27.1	31.41	40	-8.59	247	101	V
4	54.8264	45.66	Pk	11.1	-26.9	29.86	40	-10.14	0-360	100	V
1	99.2504	41.24	Pk	14	-26.4	28.84	43.52	-14.68	0-360	300	H
5	297.0126	39.82	Pk	17.3	-24.6	32.52	46.02	-13.5	0-360	100	V
6	519.7416	36.07	Pk	21.7	-25.3	32.47	46.02	-13.55	0-360	200	V

* - indicates frequency in CFR47 Pt 15 - Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

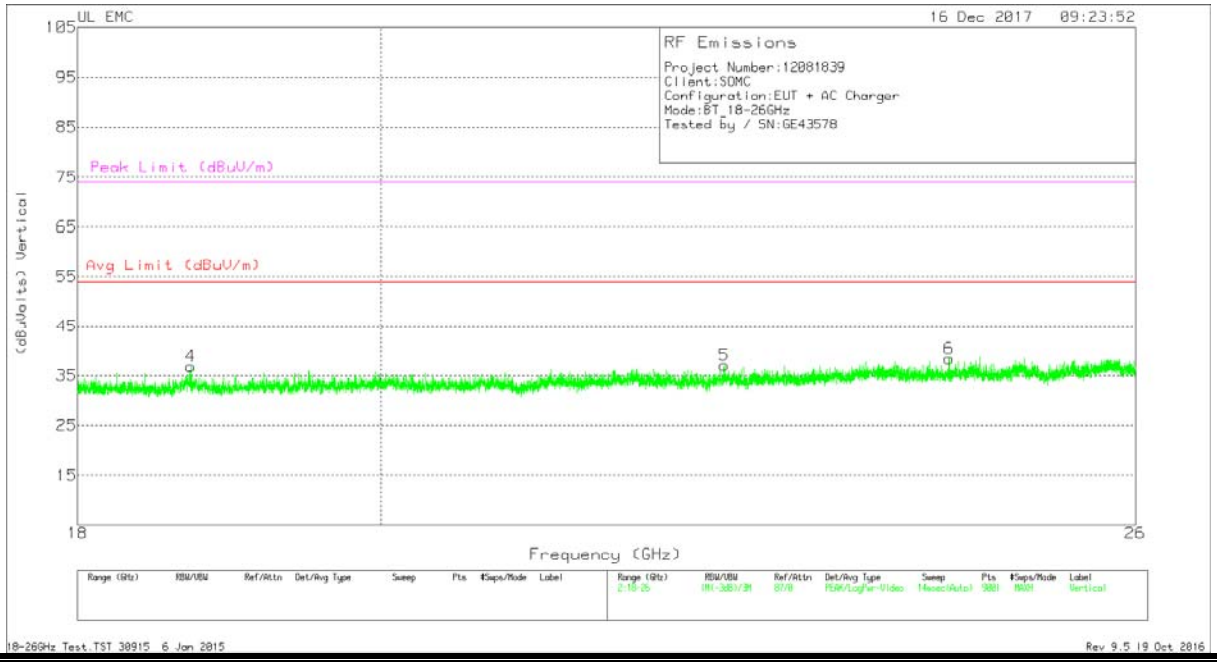
8.6. WORST-CASE ABOVE 18 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION)

HORIZONTAL PLOT



VERTICAL PLOT



Data

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	20.789	38.09	Pk	32.7	-24.9	-9.5	36.39	54	-17.61	74	-37.61
2	23.277	38.31	Pk	33.5	-24.7	-9.5	37.61	54	-16.39	74	-36.39
3	24.441	38.19	Pk	33.9	-24.4	-9.5	38.19	54	-15.81	74	-35.81
4	18.721	38.51	Pk	32.5	-24.7	-9.5	36.81	54	-17.19	74	-37.19
5	22.538	38.27	Pk	33.4	-25.1	-9.5	37.07	54	-16.93	74	-36.93
6	24.37	38.68	Pk	33.8	-24.6	-9.5	38.38	54	-15.62	74	-35.62

Pk - Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

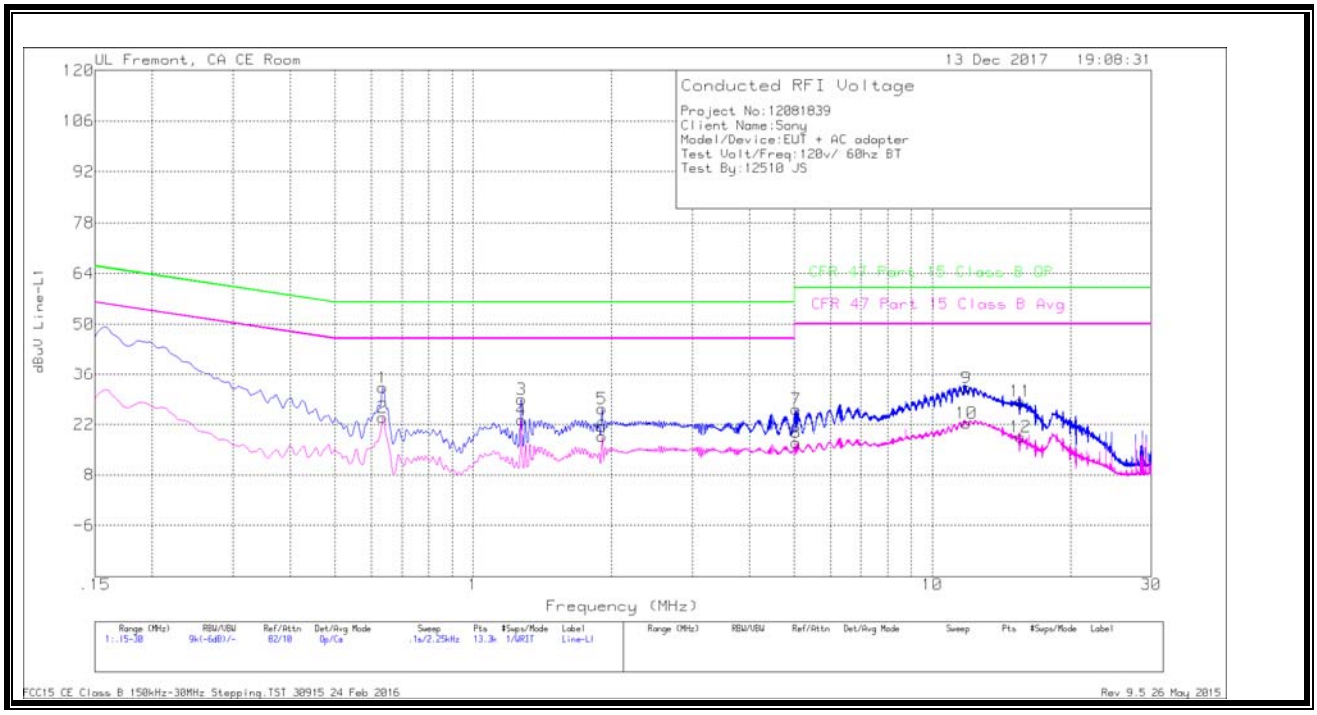
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

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

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

RESULTS

LINE 1 RESULTS



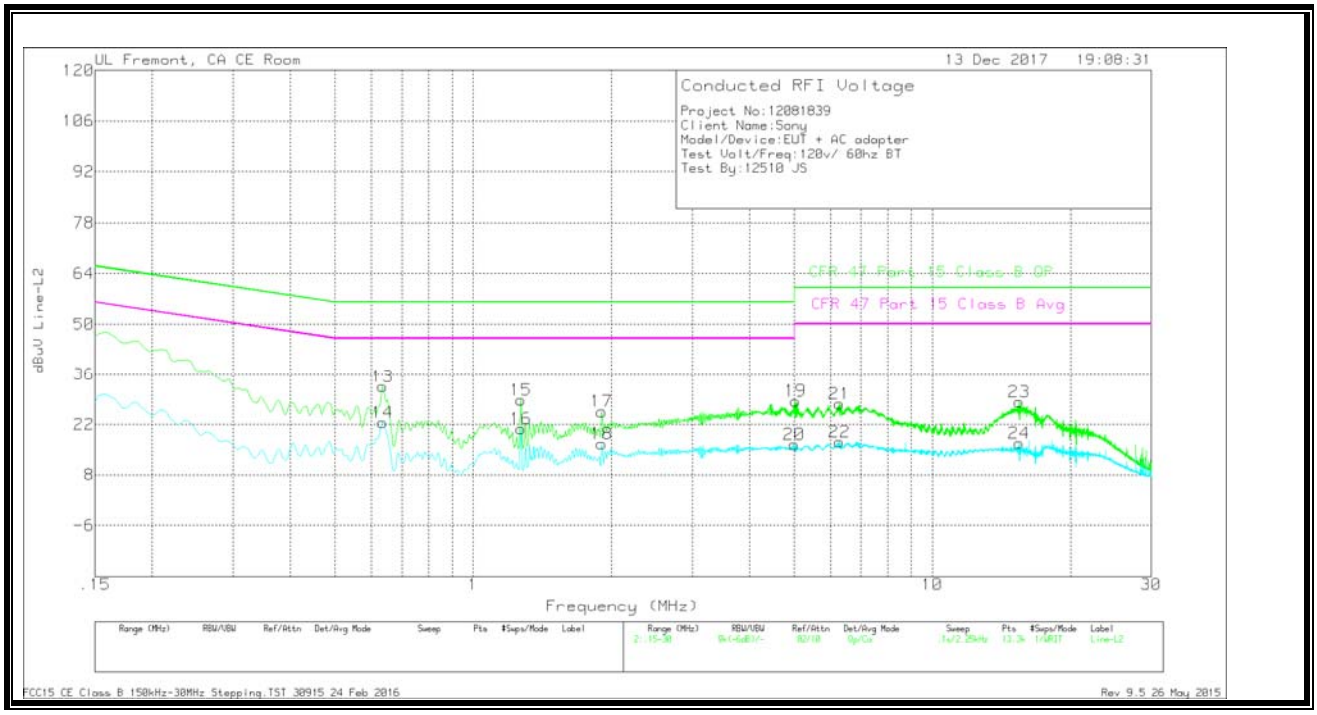
WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.636	22.11	Qp	0	0	10.1	32.21	56	-23.79	-	-
2	.636	13.8	Ca	0	0	10.1	23.9	-	-	46	-22.1
3	1.27275	18.71	Qp	0	.1	10.1	28.91	56	-27.09	-	-
4	1.27275	13.09	Ca	0	.1	10.1	23.29	-	-	46	-22.71
5	1.9095	16.21	Qp	0	.1	10.1	26.41	56	-29.59	-	-
6	1.9095	8.52	Ca	0	.1	10.1	18.72	-	-	46	-27.28
7	5.04825	15.92	Qp	0	.1	10.2	26.22	60	-33.78	-	-
8	5.0505	6.65	Ca	0	.1	10.2	16.95	-	-	50	-33.05
9	11.859	21.74	Qp	.1	.2	10.2	32.24	60	-27.76	-	-
10	11.859	11.94	Ca	.1	.2	10.2	22.44	-	-	50	-27.56
11	15.56138	17.88	Qp	0	.3	10.3	28.48	60	-31.52	-	-
12	15.5625	7.96	Ca	0	.3	10.3	18.56	-	-	50	-31.44

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.636	22.46	Qp	0	0	10.1	32.56	56	-23.44	-	-
14	.63487	12.39	Ca	0	0	10.1	22.49	-	-	46	-23.51
15	1.2705	18.57	Qp	0	.1	10.1	28.77	56	-27.23	-	-
16	1.2705	10.56	Ca	0	.1	10.1	20.76	-	-	46	-25.24
17	1.905	15.38	Qp	0	.1	10.1	25.58	56	-30.42	-	-
18	1.905	6.39	Ca	0	.1	10.1	16.59	-	-	46	-29.41
19	5.0415	18.23	Qp	0	.1	10.2	28.53	60	-31.47	-	-
20	5.01	6.14	Ca	0	.1	10.2	16.44	-	-	50	-33.56
21	6.28688	17.33	Qp	0	.2	10.2	27.73	60	-32.27	-	-
22	6.288	6.7	Ca	0	.2	10.2	17.1	-	-	50	-32.9
23	15.477	17.69	Qp	0	.3	10.3	28.29	60	-31.71	-	-
24	15.477	6.14	Ca	0	.3	10.3	16.74	-	-	50	-33.26

Qp - Quasi-Peak detector

Ca - CISPR average detection