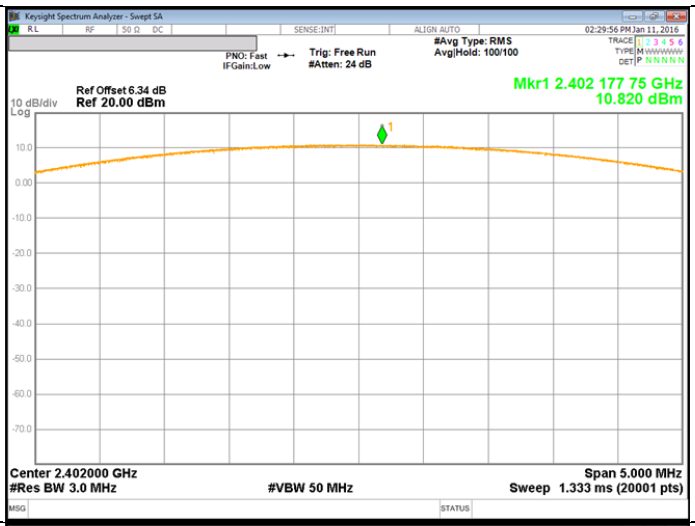
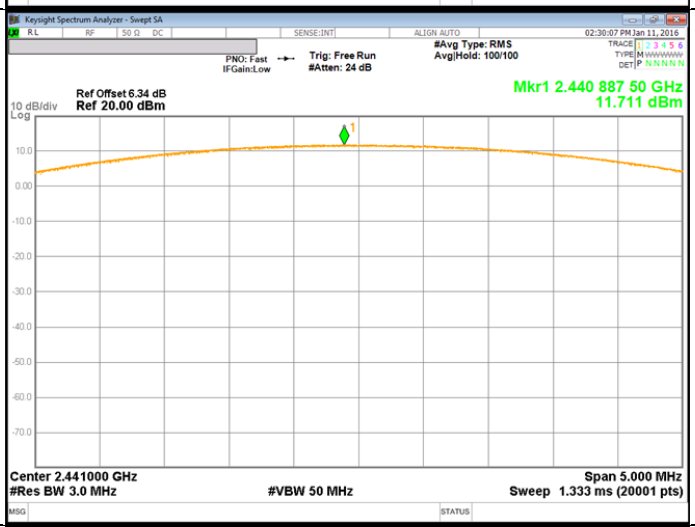
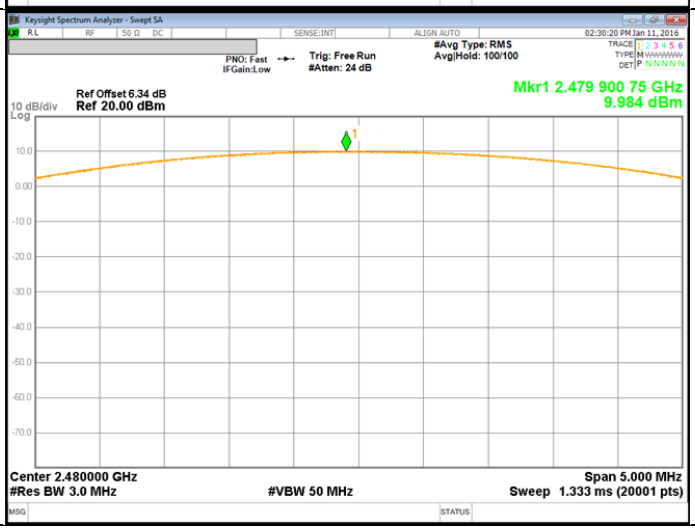
Pi/4-DPSK OUTPUT POWER

Pi/4-DPSK Low CH			
Pi/4-DPSK Middle CH			
Pi/4-DPSK High CH			

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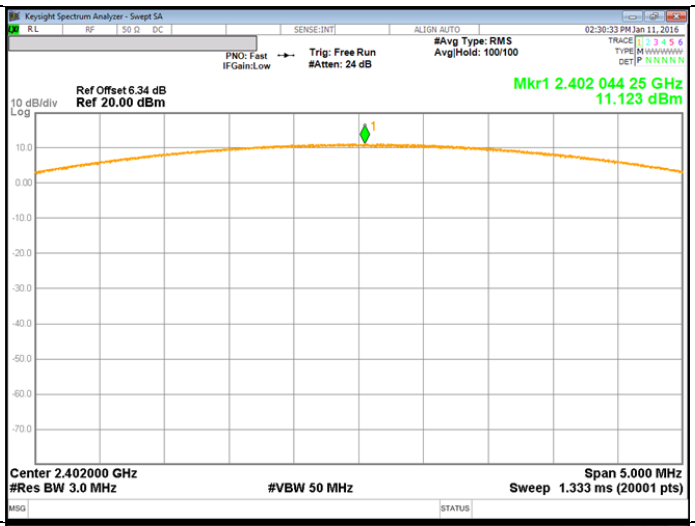
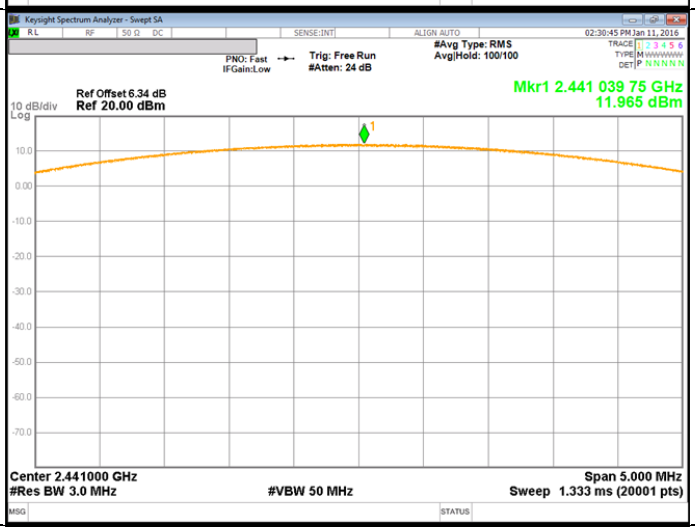
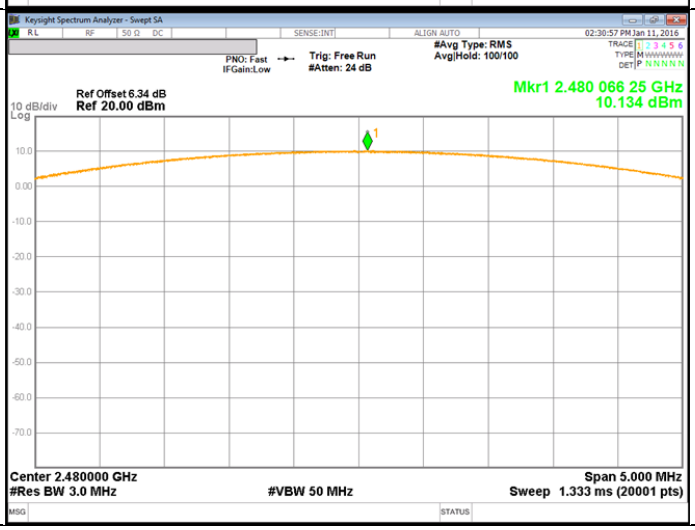
8PSK OUTPUT POWER

8PSK Low CH			
8PSK Middle CH			
8PSK High CH			

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8.6. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.1 dB (including 10 dB pad and 0.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

8.6.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	9.129	8.18
Middle	2441	10.165	10.39
High	2480	8.671	7.36

8.6.2. DATA RATE PI/4-DQPSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	8.666	7.36
Middle	2441	9.681	9.29
High	2480	8.176	6.57

8.6.3. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	8.672	7.37
Middle	2441	9.691	9.31
High	2480	8.192	6.59

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8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Limit = -20 dBc

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.

RESULTS

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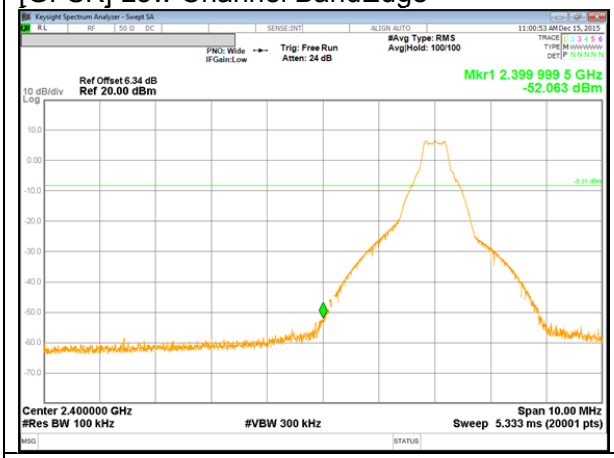
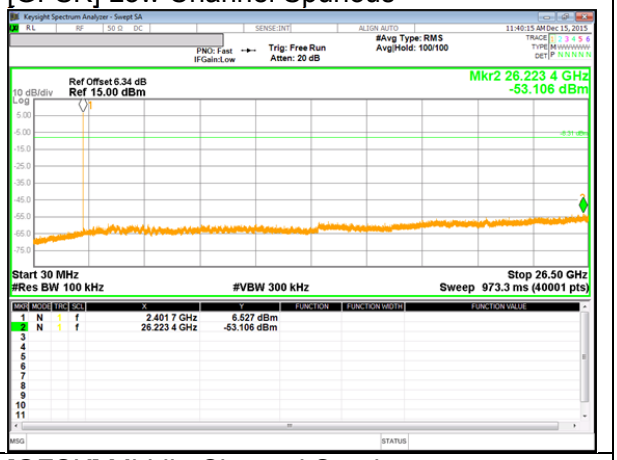
8.7.1. BASIC DATA RATE GFSK MODULATION

GFSK Mode

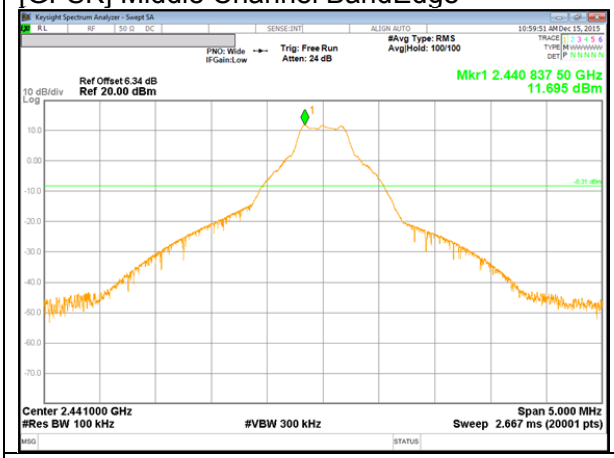
[GFSK] Low Channel BandEdge



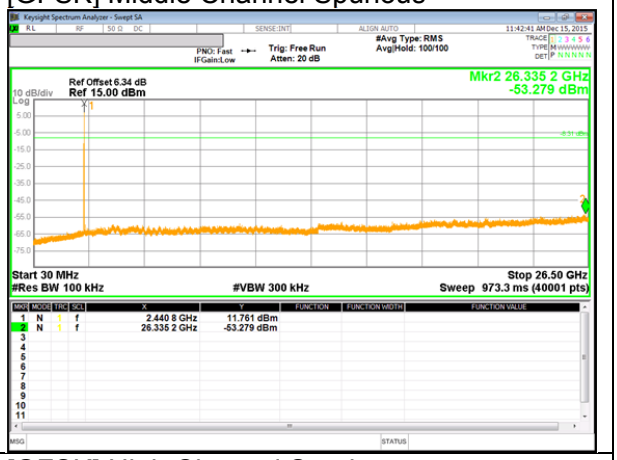
[GFSK] Low Channel Spurious



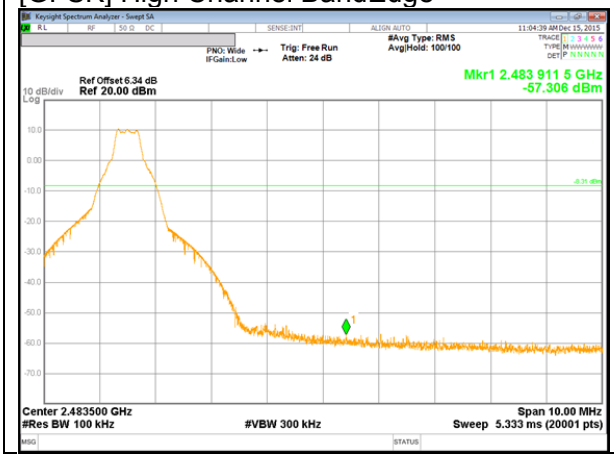
[GFSK] Middle Channel BandEdge



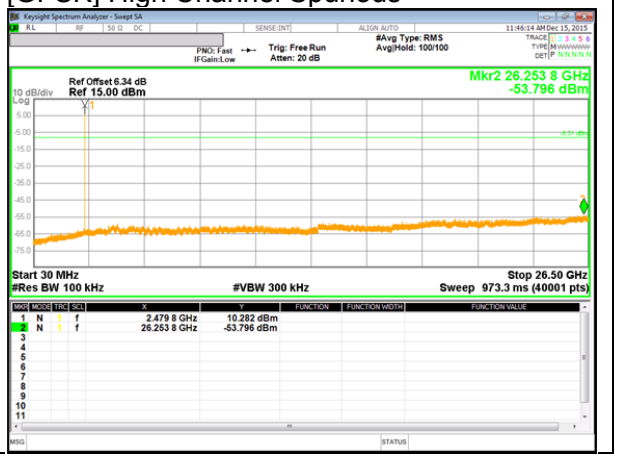
[GFSK] Middle Channel Spurious



[GFSK] High Channel BandEdge



[GFSK] High Channel Spurious



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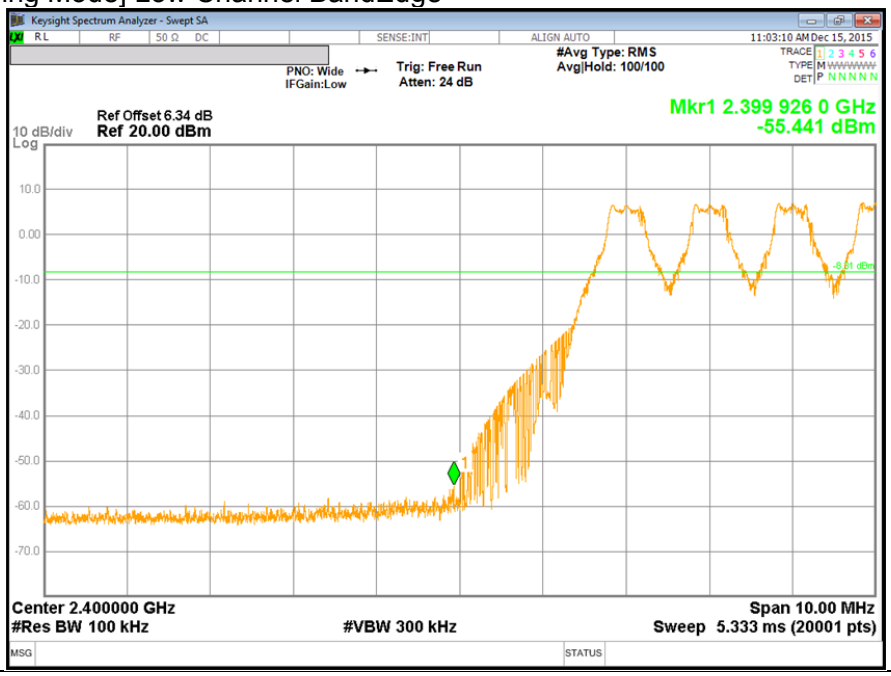
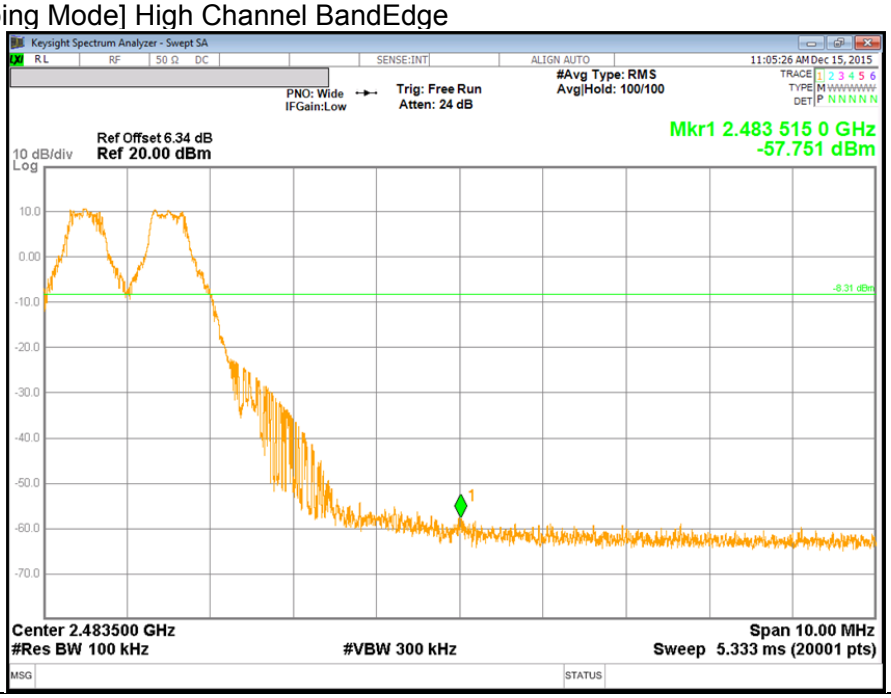
BandEdge Emission at GFSK Hopping Mode

[GFSK Hopping Mode] Low Channel BandEdge



[GFSK Hopping Mode] High Channel BandEdge



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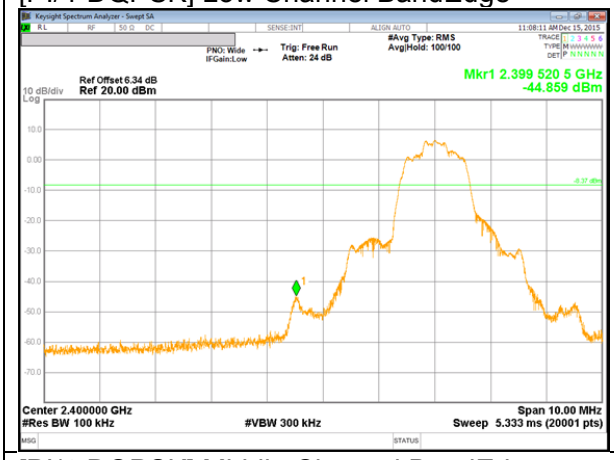
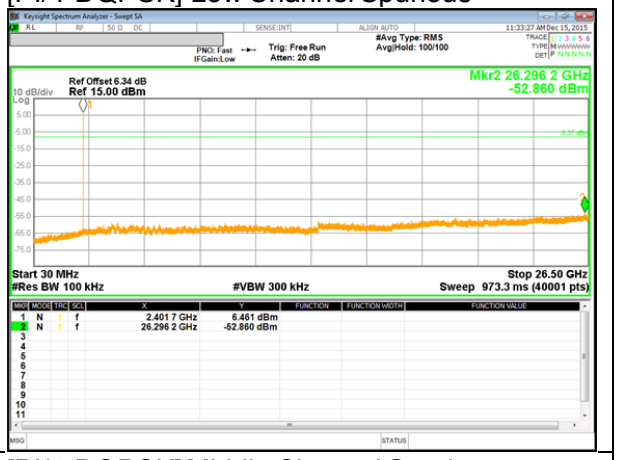
PI/4-DQPSK Mode

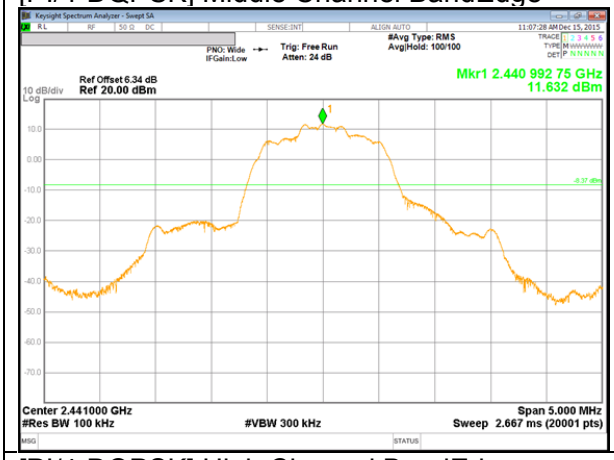
[PI/4-DQPSK] Low Channel BandEdge



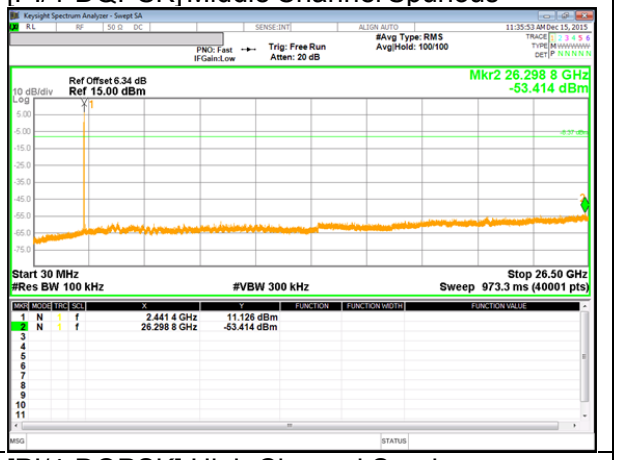
[PI/4-DQPSK] Low Channel Spurious



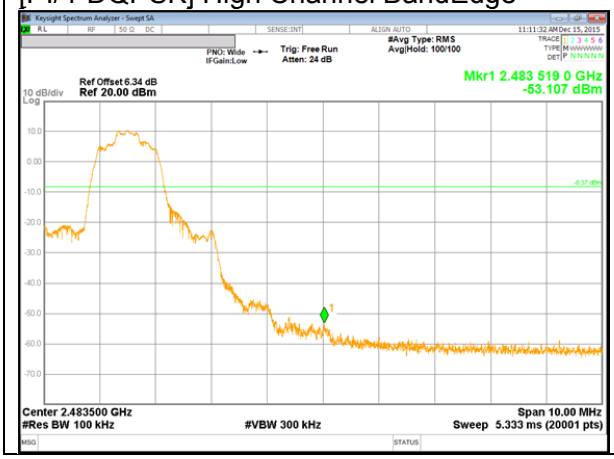
[PI/4-DQPSK] Middle Channel BandEdge



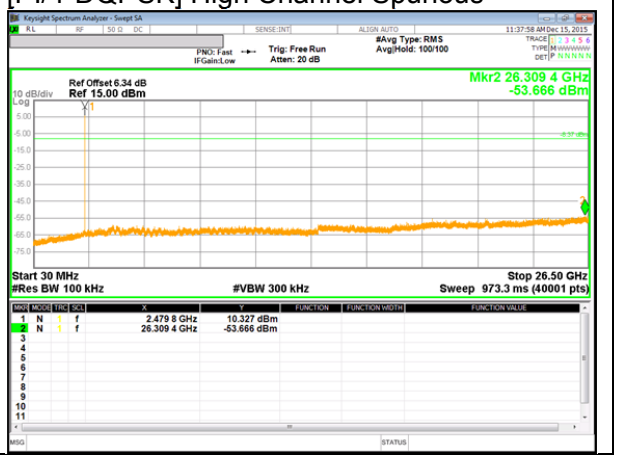
[PI/4-DQPSK] Middle Channel Spurious



[PI/4-DQPSK] High Channel BandEdge



[PI/4-DQPSK] High Channel Spurious



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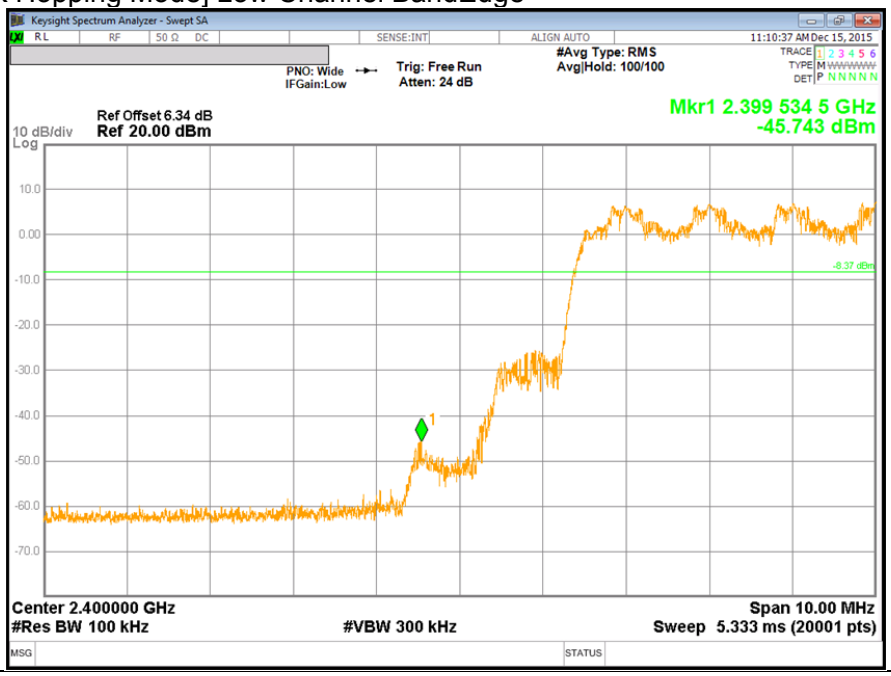
BandEdge Emission at PI/4-DQPSK Hopping Mode

[PI/4-DQPSK Hopping Mode] Low Channel BandEdge



[PI/4-DQPSK Hopping Mode] High Channel BandEdge

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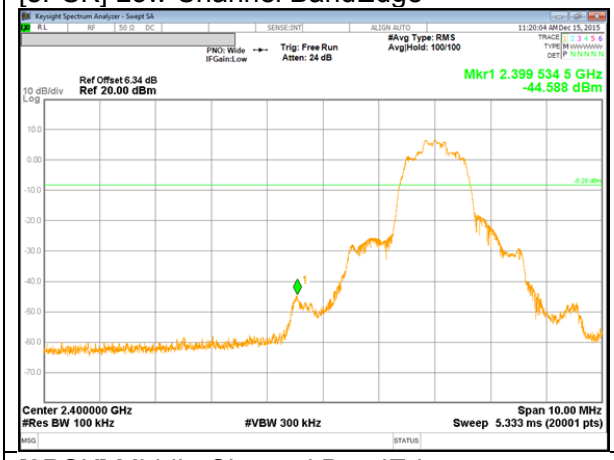
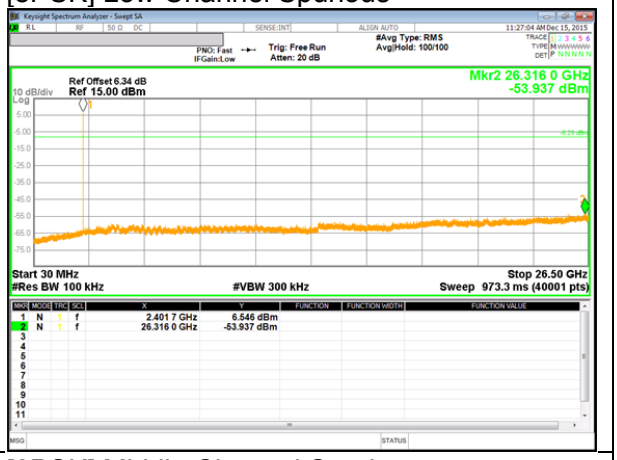
8PSK Mode

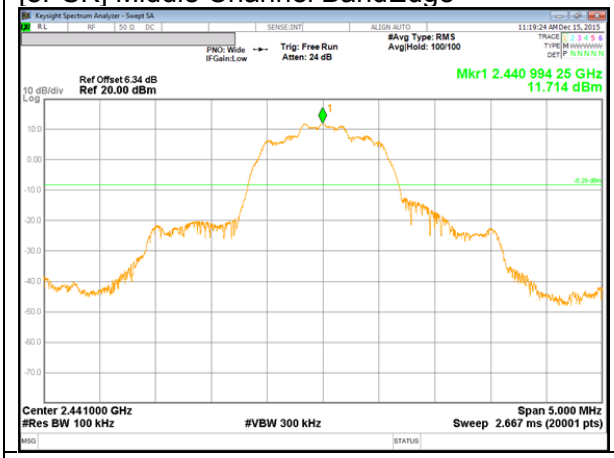
[8PSK] Low Channel BandEdge



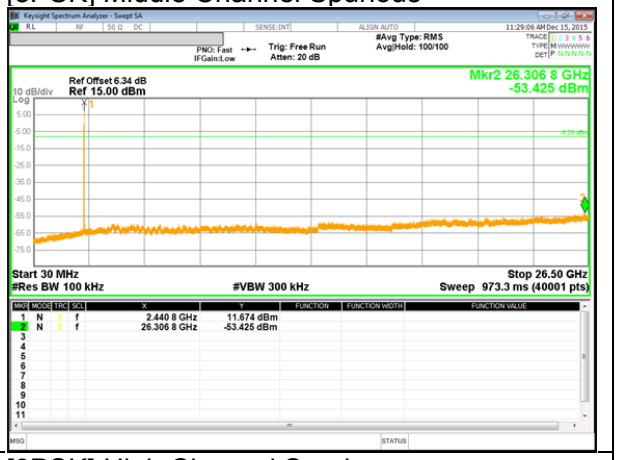
[8PSK] Low Channel Spurious



[8PSK] Middle Channel BandEdge



[8PSK] Middle Channel Spurious



[8PSK] High Channel BandEdge

[8PSK] High Channel Spurious

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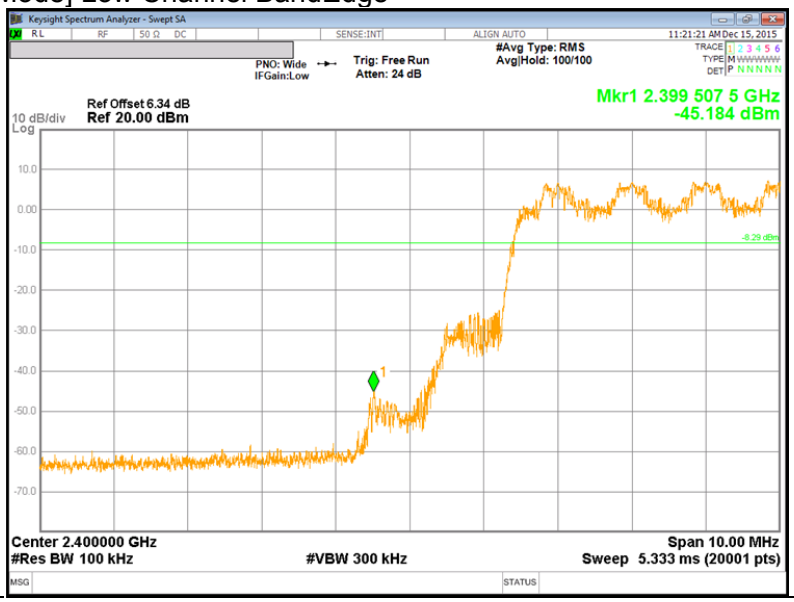
BandEdge Emission at 8PSK Hopping Mode

[8PSK Hopping Mode] Low Channel BandEdge



[8PSK Hopping Mode] High Channel BandEdge

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9. RADIATED TEST RESULTS

9.1. 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
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. 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 band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1/T (on time) for average measurement.

GFSK = 1/T = 1 / 0.0029S = 350Hz.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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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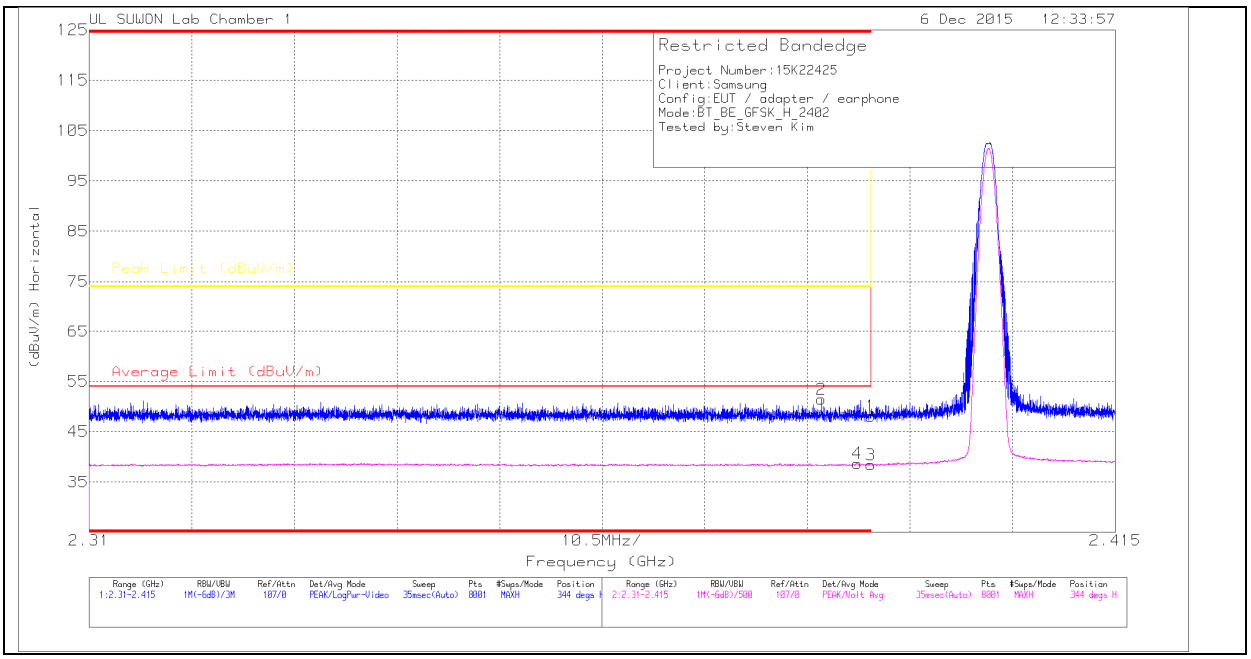
9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.33	Pk	31.8	-29	48.13	-	-	74	-25.87	344	100	H	1
2	* 2.385	48.65	Pk	31.8	-29	51.45	-	-	74	-22.55	344	100	H	2
3	* 2.39	35.62	V1TV	31.8	-29	38.42	54	-15.58	-	-	344	100	H	3
4	* 2.389	35.91	V1TV	31.8	-29	38.71	54	-15.29	-	-	344	100	H	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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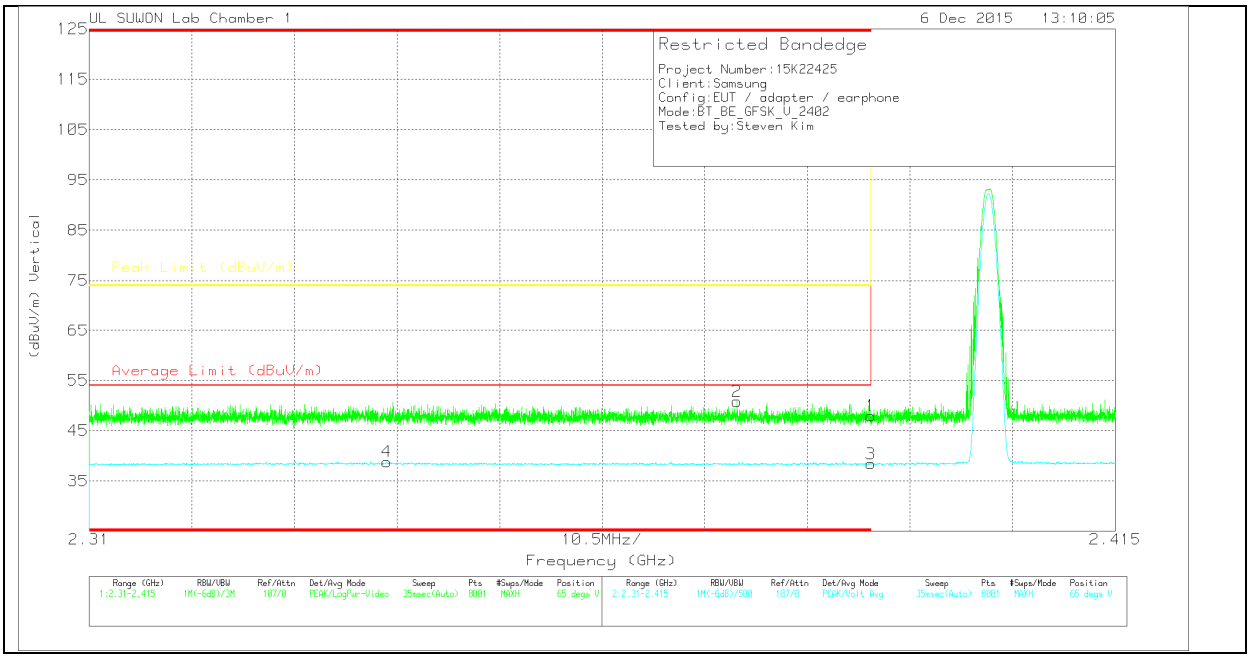
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.17	Pk	31.8	-29	47.97	-	-	74	-26.03	65	377	V	1
2	* 2.376	48.01	Pk	31.8	-29	50.81	-	-	74	-23.19	65	377	V	2
3	* 2.39	35.6	V1TV	31.8	-29	38.4	54	-15.6	-	-	65	377	V	3
4	* 2.34	36.16	V1TV	31.7	-29	38.86	54	-15.14	-	-	65	377	V	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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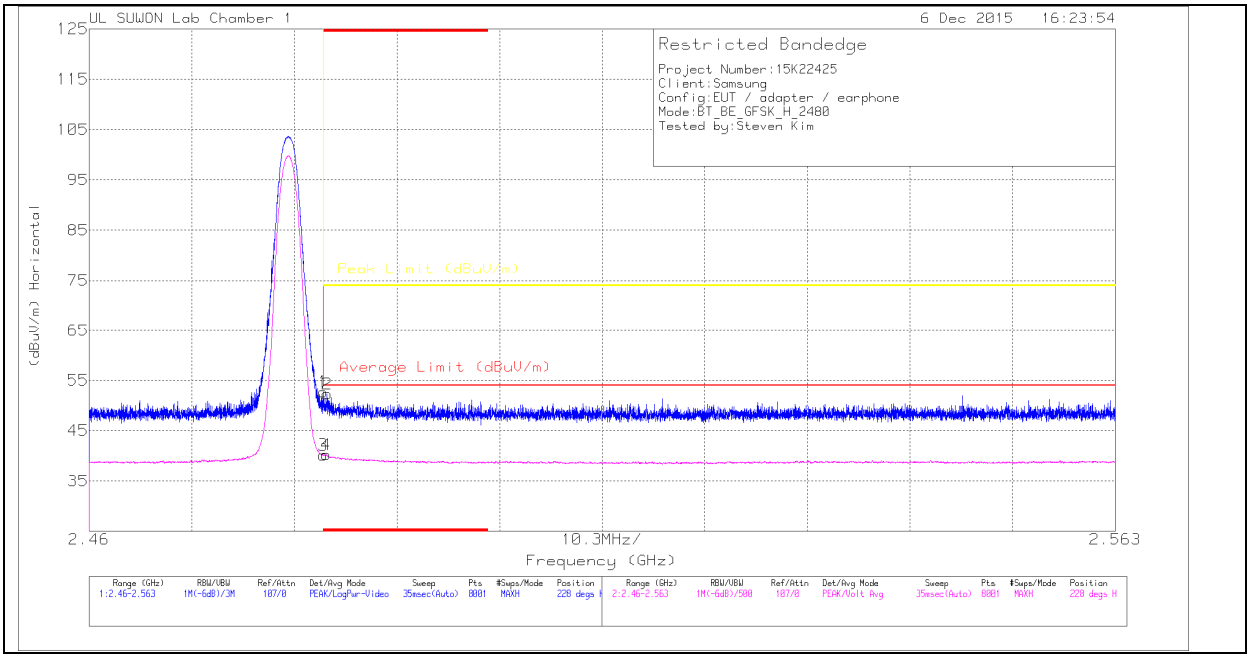
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.61	Pk	32	-28.9	52.71	-	-	74	-21.29	228	100	H	1
2	* 2.484	49.22	Pk	32	-28.9	52.32	-	-	74	-21.68	228	100	H	2
3	* 2.484	37.07	V1TV	32	-28.9	40.17	54	-13.83	-	-	228	100	H	3
4	* 2.484	37.13	V1TV	32	-28.9	40.23	54	-13.77	-	-	228	100	H	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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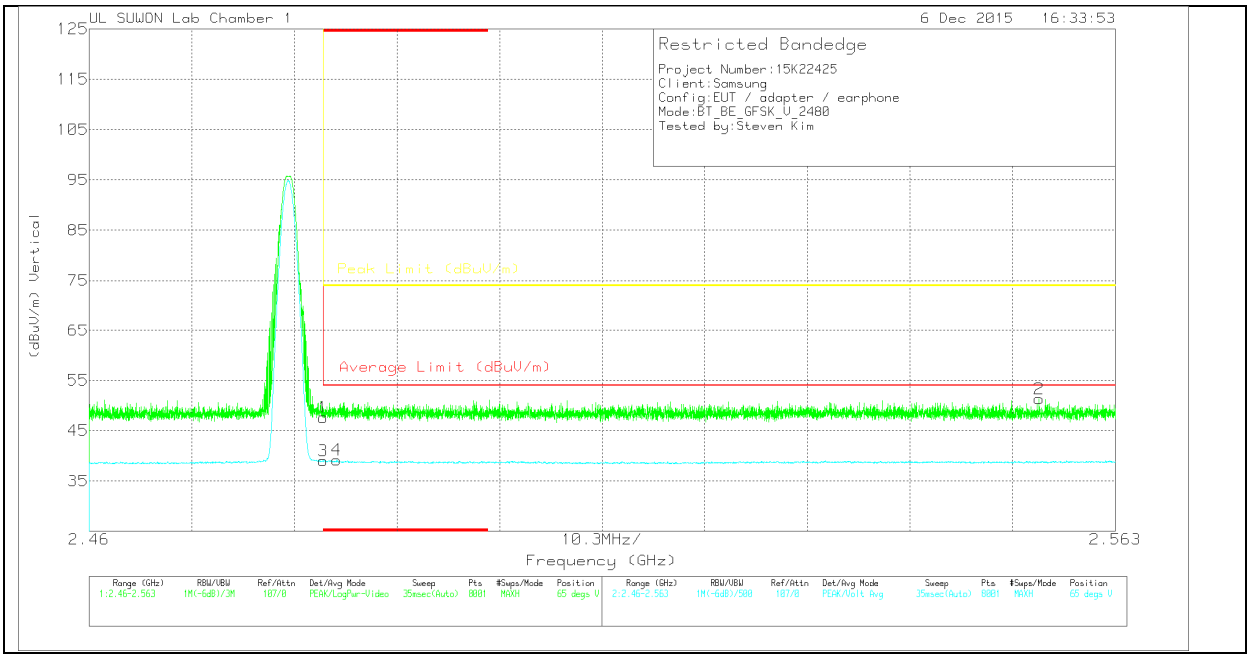
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.53	Pk	32	-28.9	47.63	-	-	74	-26.37	65	282	V	1
2	2.555	48.14	Pk	32	-28.8	51.34	-	-	74	-22.66	65	282	V	2
3	* 2.484	35.92	V1TV	32	-28.9	39.02	54	-14.98	-	-	65	282	V	3
4	* 2.485	36.11	V1TV	32	-28.9	39.21	54	-14.79	-	-	65	282	V	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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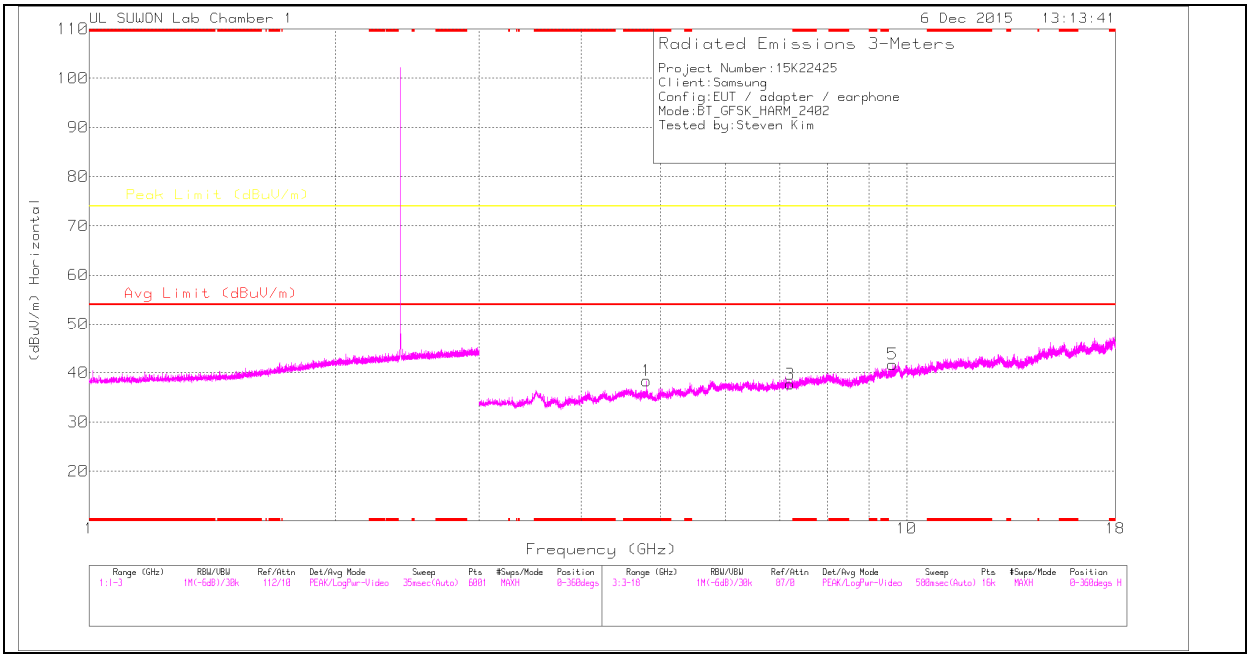
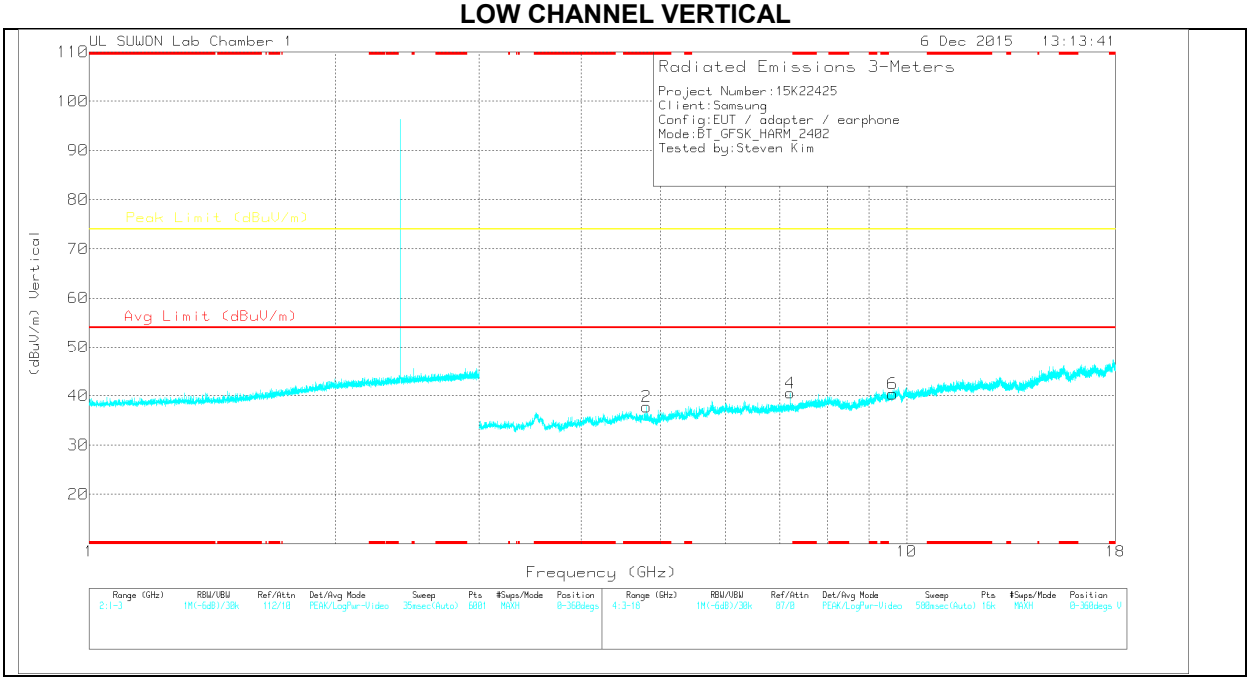
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804	38.17	PK	34	-33.8	38.37	-	-	74	-35.63	0-360	100	H
3	7.206	32.76	PK	35.7	-30.8	37.66	-	-	74	-36.34	0-360	100	H
5	9.61	32.02	PK	37	-27.3	41.72	-	-	74	-32.28	0-360	200	H
2	* 4.804	37.56	PK	34	-33.8	37.76	-	-	74	-36.24	0-360	200	V
4	7.206	35.61	PK	35.7	-30.8	40.51	-	-	74	-33.49	0-360	100	V
6	9.611	30.67	PK	37	-27.3	40.37	-	-	74	-33.63	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.805	49.13	PK2	34	-33.8	49.33	-	-	74	-24.67	172	103	H
* 4.804	36.19	VA1T	34	-33.8	36.39	54	-17.61	-	-	172	103	H
* 4.804	47.94	PK2	34	-33.8	48.14	-	-	74	-25.86	260	326	V
* 4.804	36.09	VA1T	34	-33.8	36.29	54	-17.71	-	-	260	326	V
7.207	44.49	PK2	35.7	-30.8	49.39	-	-	74	-24.61	334	104	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 : Maximum Peak

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

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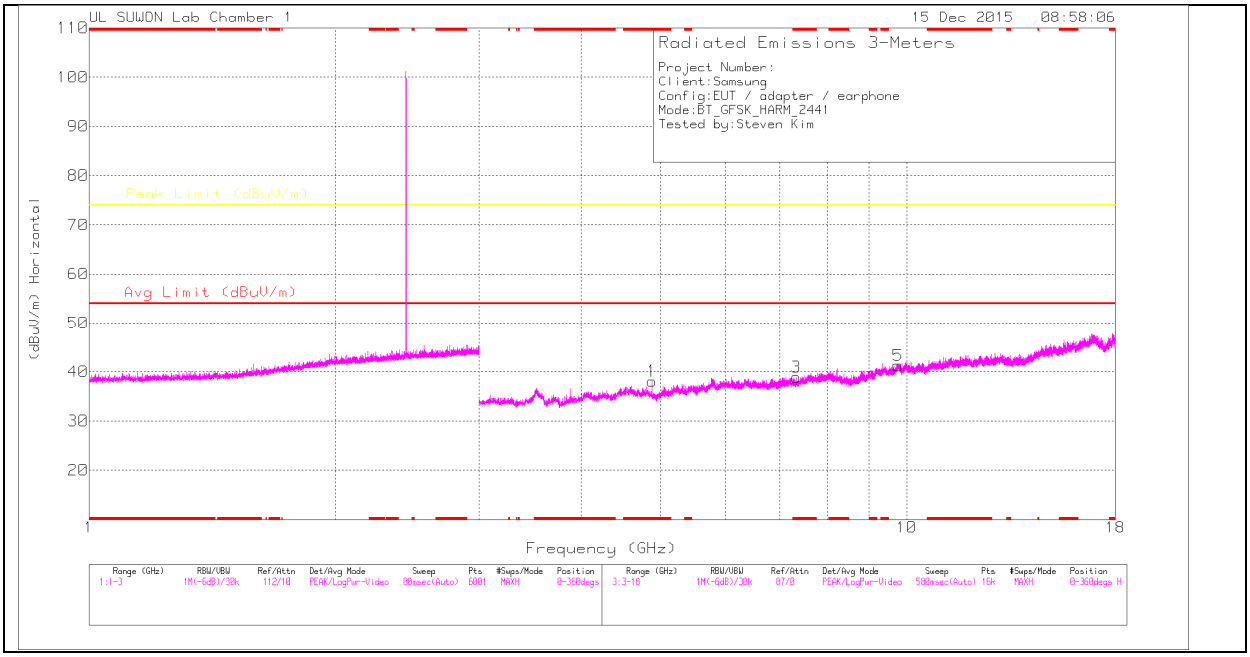
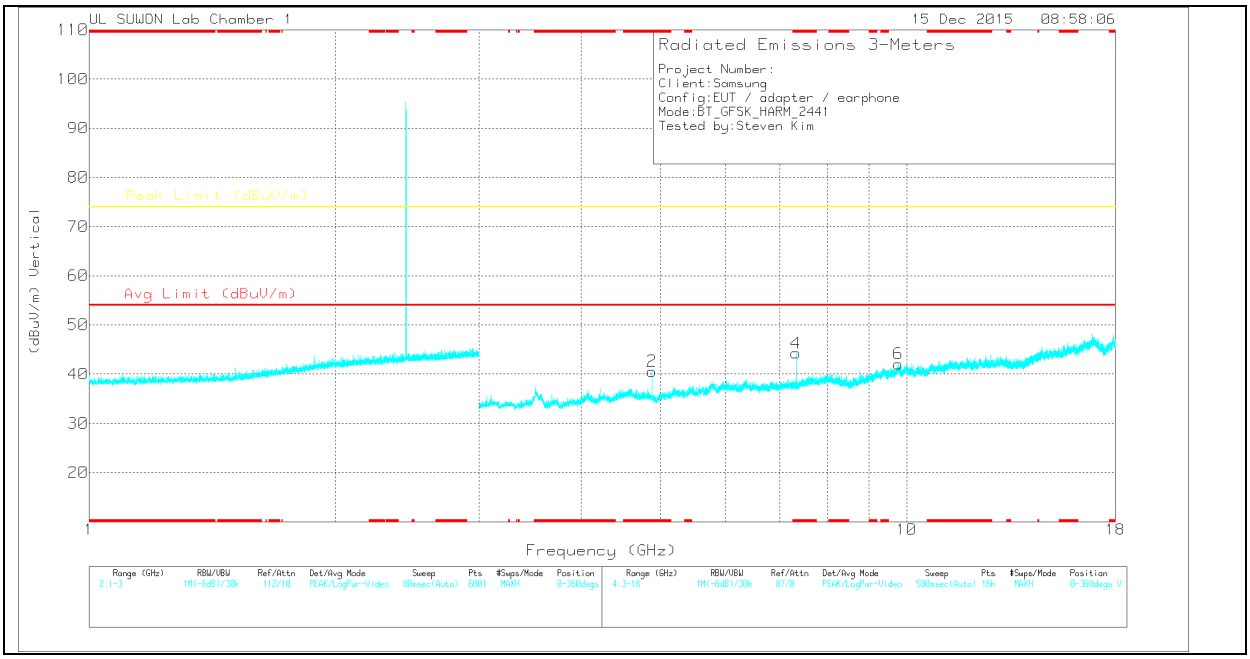
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.881	38.09	PK	34	-34	38.09	-	-	74	-35.91	0-360	100	H
3	* 7.323	33.97	PK	35.8	-30.9	38.87	-	-	74	-35.13	0-360	199	H
5	9.762	30.64	PK	37.2	-26.6	41.24	-	-	74	-32.76	0-360	199	H
2	* 4.881	40.59	PK	34	-34	40.59	-	-	74	-33.41	0-360	100	V
4	* 7.323	39.38	PK	35.8	-30.9	44.28	-	-	74	-29.72	0-360	100	V
6	9.769	31.39	PK	37.2	-26.5	42.09	-	-	74	-31.91	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.881	49.23	PK2	34	-34	49.23	-	-	74	-24.77	272	207	V
* 4.882	39	VA1T	34	-34	39	54	-15	-	-	272	207	V
* 7.323	46.83	PK2	35.8	-30.9	51.73	-	-	74	-22.27	12	100	V
* 7.323	37.52	VA1T	35.8	-30.9	42.42	54	-11.58	-	-	12	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 : Maximum Peak

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

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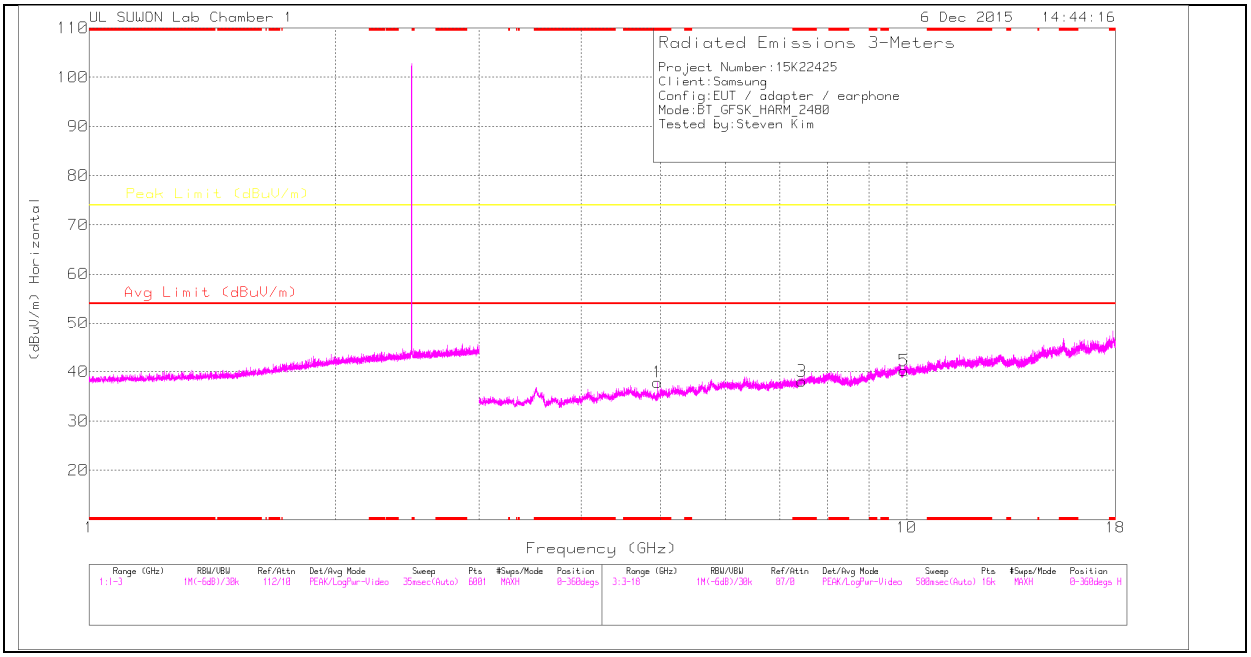
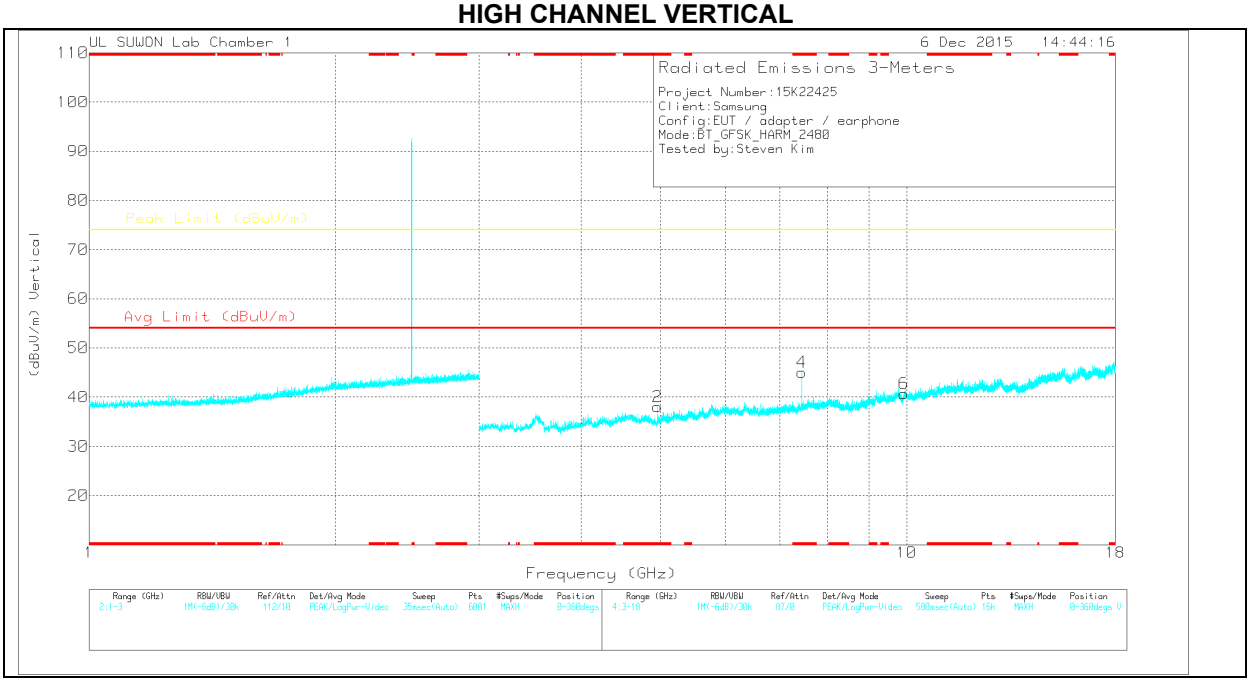
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.959	37.86	Pk	34	-34	37.86	-	-	74	-36.14	0-360	100	H
3	* 7.44	32.98	Pk	35.8	-30.7	38.08	-	-	74	-35.92	0-360	100	H
5	9.922	30.01	Pk	37.4	-27.2	40.21	-	-	74	-33.79	0-360	200	H
2	* 4.96	38.06	Pk	34	-34	38.06	-	-	74	-35.94	0-360	100	V
4	* 7.44	39.94	Pk	35.8	-30.7	45.04	-	-	74	-28.96	0-360	100	V
6	9.92	30.53	Pk	37.4	-27.2	40.73	-	-	74	-33.27	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.96	48.32	PK2	34	-34	48.32	-	-	74	-25.68	303	102	H
* 4.96	36.9	VA1T	34	-34	36.9	54	-17.1	-	-	303	102	H
* 4.96	48.2	PK2	34	-34	48.2	-	-	74	-25.8	262	100	V
* 4.96	37.3	VA1T	34	-34	37.3	54	-16.7	-	-	262	100	V
* 7.44	47.26	PK2	35.8	-30.7	52.36	-	-	74	-21.64	4	102	V
* 7.44	38.42	VA1T	35.8	-30.7	43.52	54	-10.48	-	-	4	102	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

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

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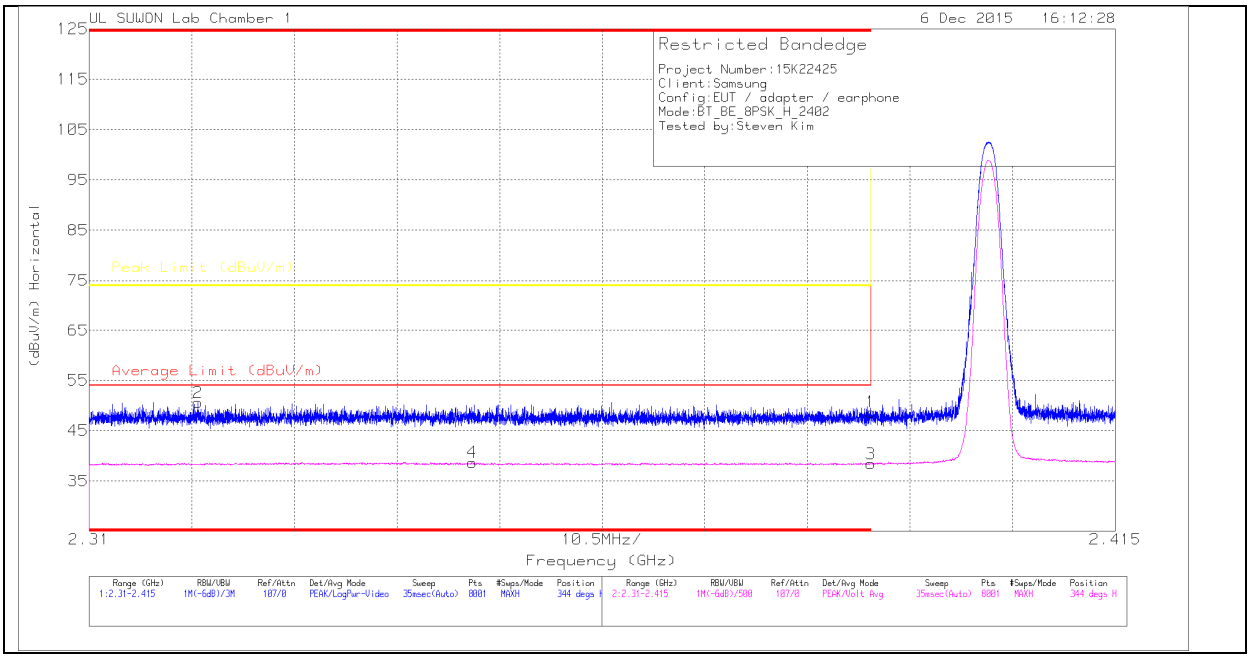
9.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.92	Pk	31.8	-29	48.72	-	-	74	-25.28	344	108	H	1
2	* 2.321	47.91	Pk	31.7	-29	50.61	-	-	74	-23.39	344	108	H	2
3	* 2.39	35.6	V1TV	31.8	-29	38.4	54	-15.6	-	-	344	108	H	3
4	* 2.349	36.02	V1TV	31.7	-29	38.72	54	-15.28	-	-	344	108	H	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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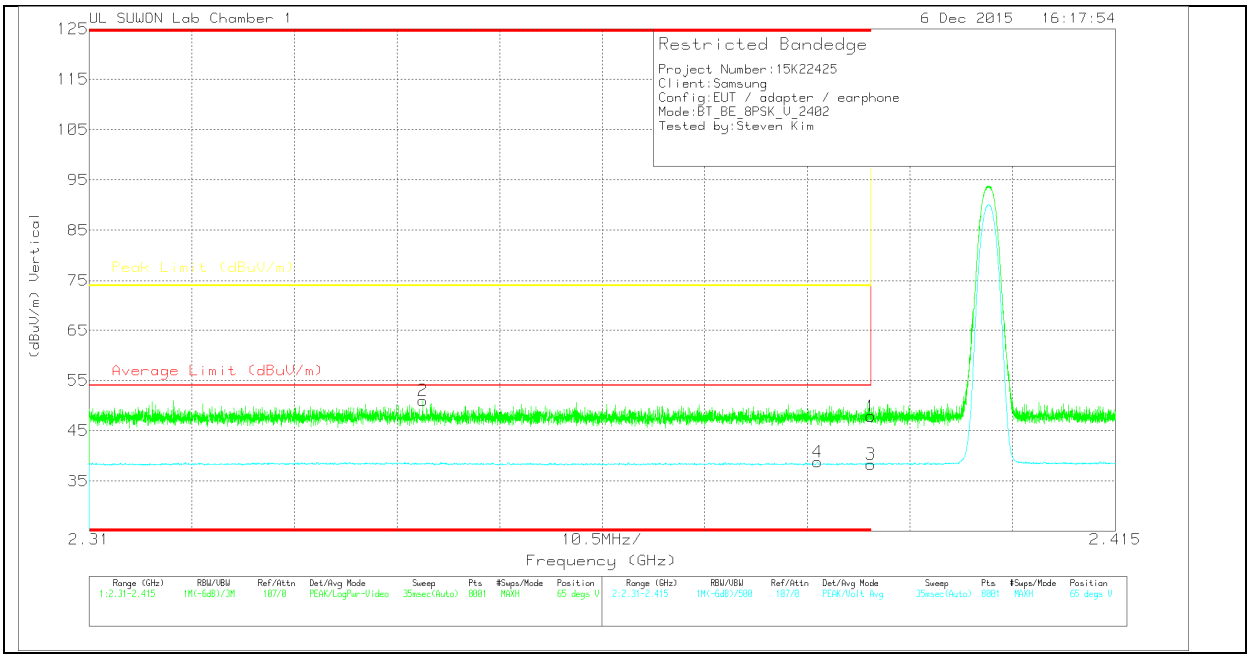
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.09	Pk	31.8	-29	47.89	-	-	74	-26.11	65	377	V	1
2	* 2.344	48.32	Pk	31.7	-29	51.02	-	-	74	-22.98	65	377	V	2
3	* 2.39	35.56	V1TV	31.8	-29	38.36	54	-15.64	-	-	65	377	V	3
4	* 2.385	36.02	V1TV	31.8	-29	38.82	54	-15.18	-	-	65	377	V	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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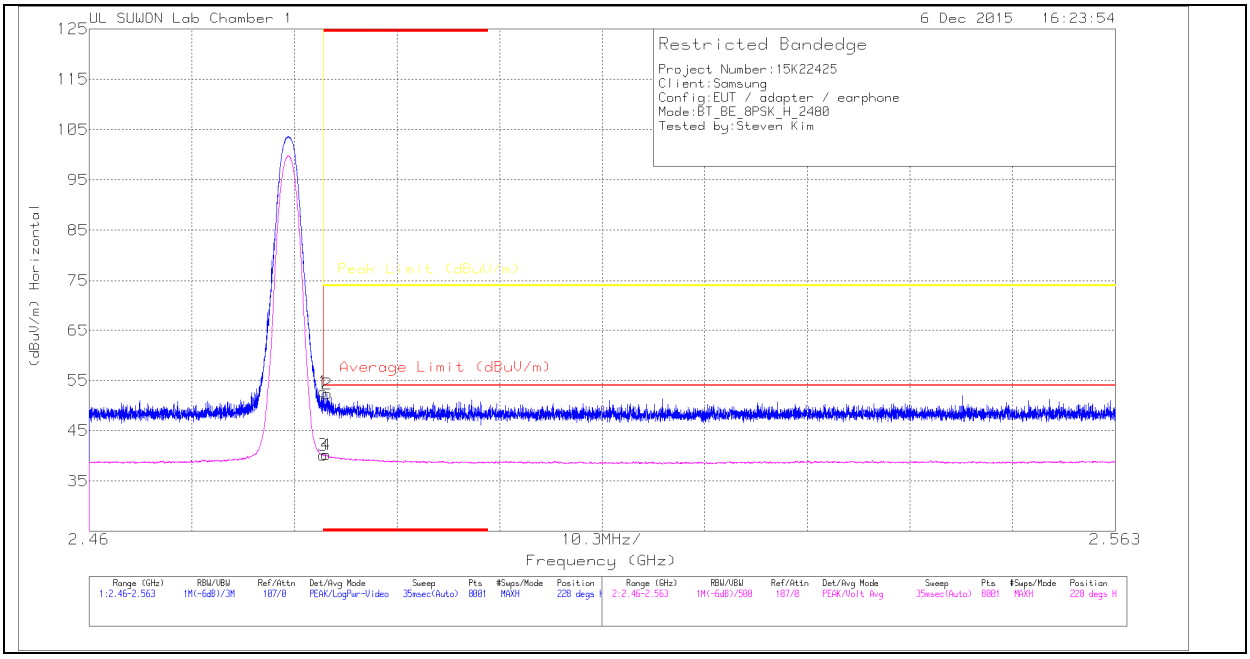
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.61	Pk	32	-28.9	52.71	-	-	74	-21.29	228	100	H	1
2	* 2.484	49.22	Pk	32	-28.9	52.32	-	-	74	-21.68	228	100	H	2
3	* 2.484	37.07	V1TV	32	-28.9	40.17	54	-13.83	-	-	228	100	H	3
4	* 2.484	37.13	V1TV	32	-28.9	40.23	54	-13.77	-	-	228	100	H	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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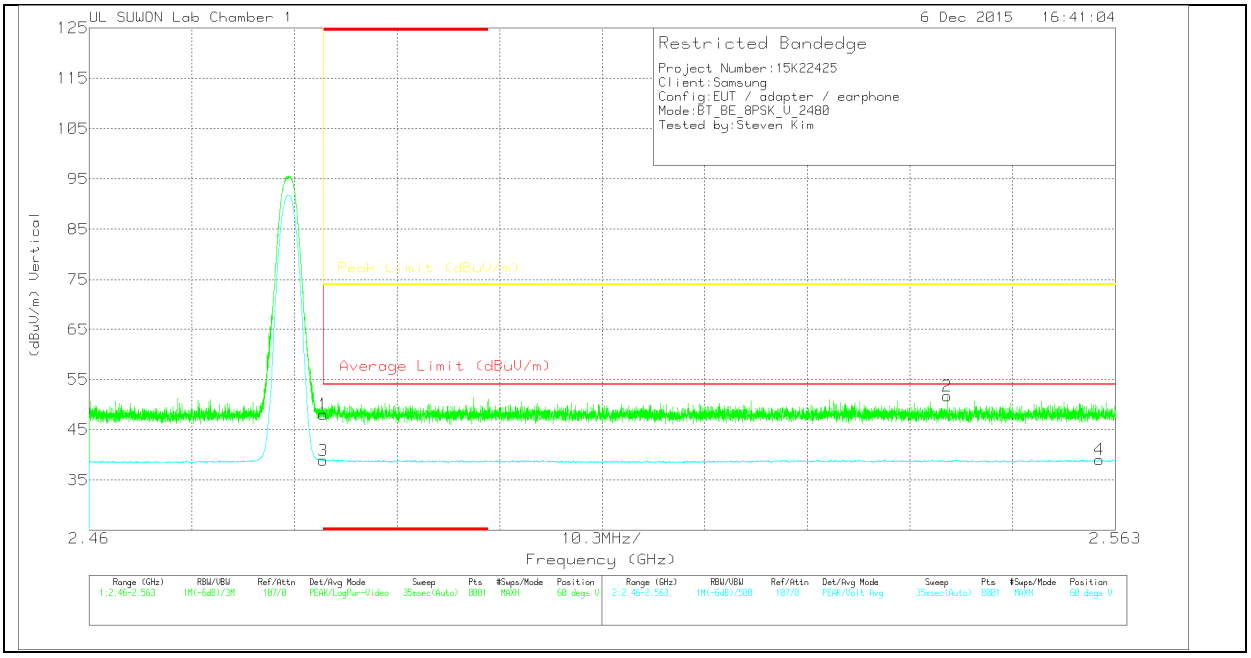
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_2	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.97	Pk	32	-28.9	48.07	-	-	74	-25.93	60	275	V	1
2	2.546	48.49	Pk	32	-28.8	51.69	-	-	74	-22.31	60	275	V	2
3	* 2.484	35.81	V1TV	32	-28.9	38.91	54	-15.09	-	-	60	275	V	3
4	2.561	35.88	V1TV	32	-28.8	39.08	54	-14.92	-	-	60	275	V	4

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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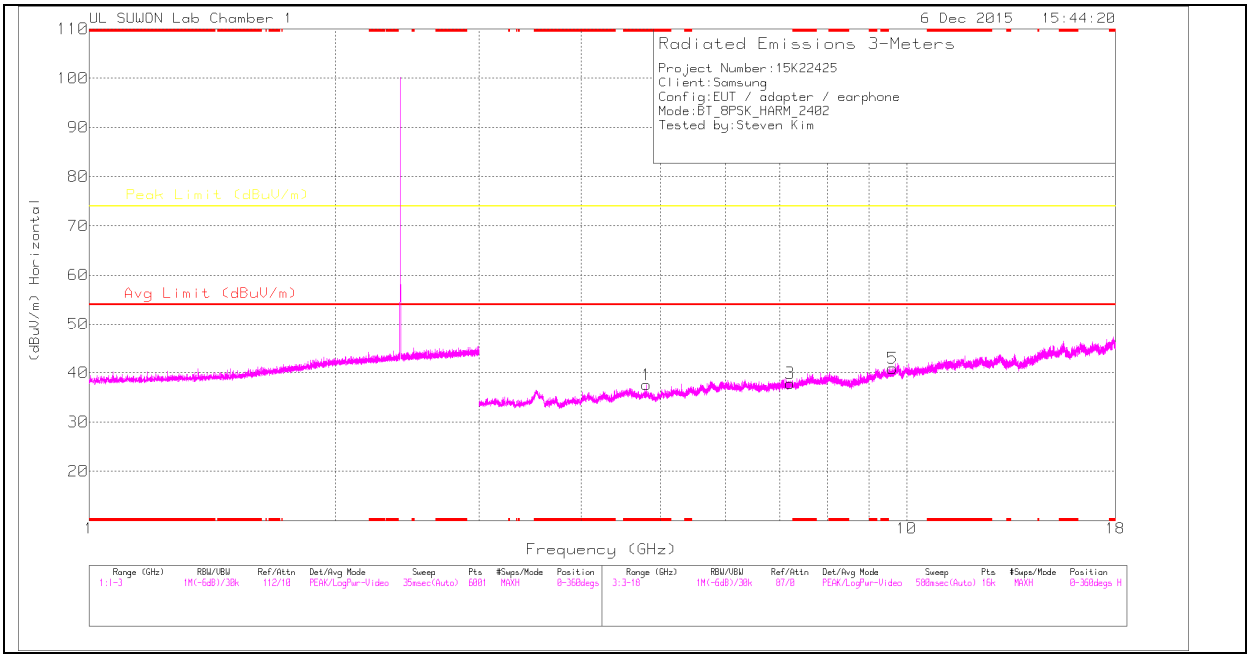
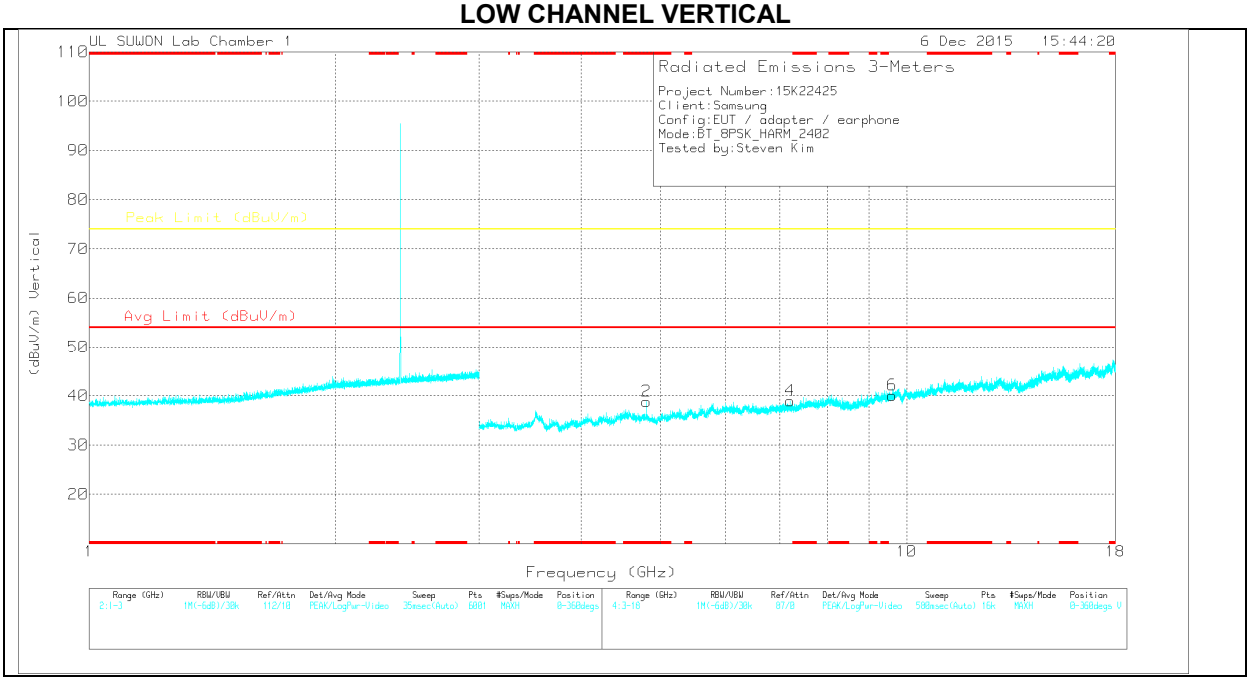
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8717)_150 619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804	37.36	PK	34	-33.8	37.56	-	-	74	-36.44	0-360	100	H
3	7.206	32.95	PK	35.7	-30.8	37.85	-	-	74	-36.15	0-360	100	H
5	9.611	31.18	PK	37	-27.3	40.88	-	-	74	-33.12	0-360	200	H
2	* 4.804	38.66	PK	34	-33.8	38.86	-	-	74	-35.14	0-360	100	V
4	7.206	34.08	PK	35.7	-30.8	38.98	-	-	74	-35.02	0-360	100	V
6	9.608	30.41	PK	37	-27.3	40.11	-	-	74	-33.89	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Avg - Video bandwidth < Resolution bandwidth

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8717)_150 619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.804	48.13	PK2	34	-33.8	48.33	-	-	74	-25.67	212	101	H
* 4.804	35.12	VA1T	34	-33.8	35.32	54	-18.68	-	-	212	101	H
* 4.804	48.71	PK2	34	-33.8	48.91	-	-	74	-25.09	272	366	V
* 4.804	36.11	VA1T	34	-33.8	36.31	54	-17.69	-	-	272	366	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 : Maximum Peak

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

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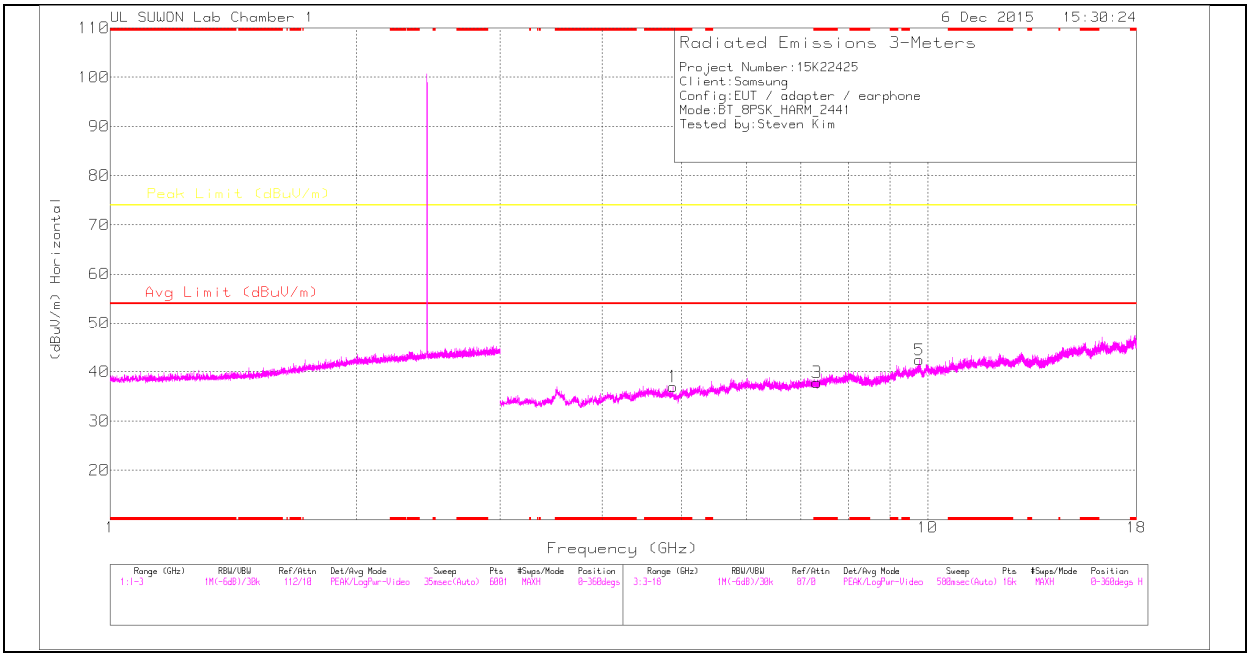
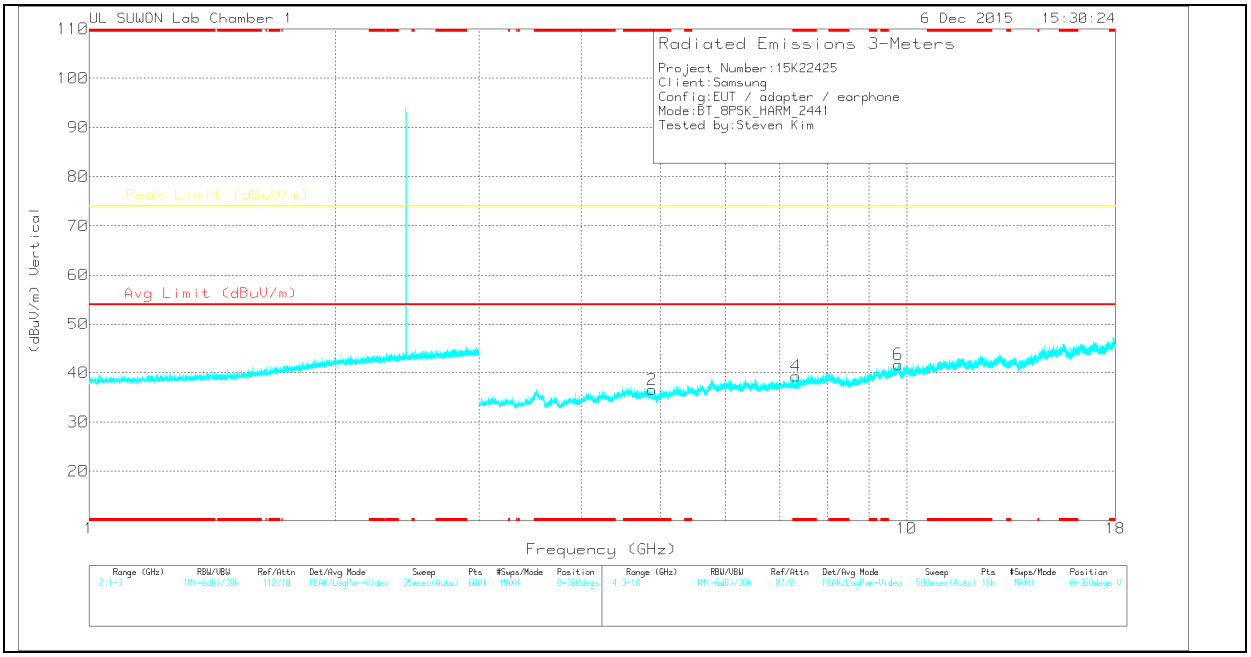
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.882	36.98	PK	34	-34	36.98	-	-	74	-37.02	0-360	100	H
3	* 7.323	32.92	PK	35.8	-30.9	37.82	-	-	74	-36.18	0-360	200	H
5	9.765	31.8	PK	37.2	-26.6	42.4	-	-	74	-31.6	0-360	200	H
2	* 4.881	36.55	PK	34	-34	36.55	-	-	74	-37.45	0-360	100	V
4	* 7.323	34.42	PK	35.8	-30.9	39.32	-	-	74	-34.68	0-360	100	V
6	9.765	31.09	PK	37.2	-26.6	41.69	-	-	74	-32.31	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.804	48.13	PK2	34	-33.8	48.33	-	-	74	-25.67	212	101	H
* 4.804	35.12	VA1T	34	-33.8	35.32	54	-18.68	-	-	212	101	H
* 4.804	48.71	PK2	34	-33.8	48.91	-	-	74	-25.09	272	366	V
* 4.804	36.11	VA1T	34	-33.8	36.31	54	-17.69	-	-	272	366	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 : Maximum Peak

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

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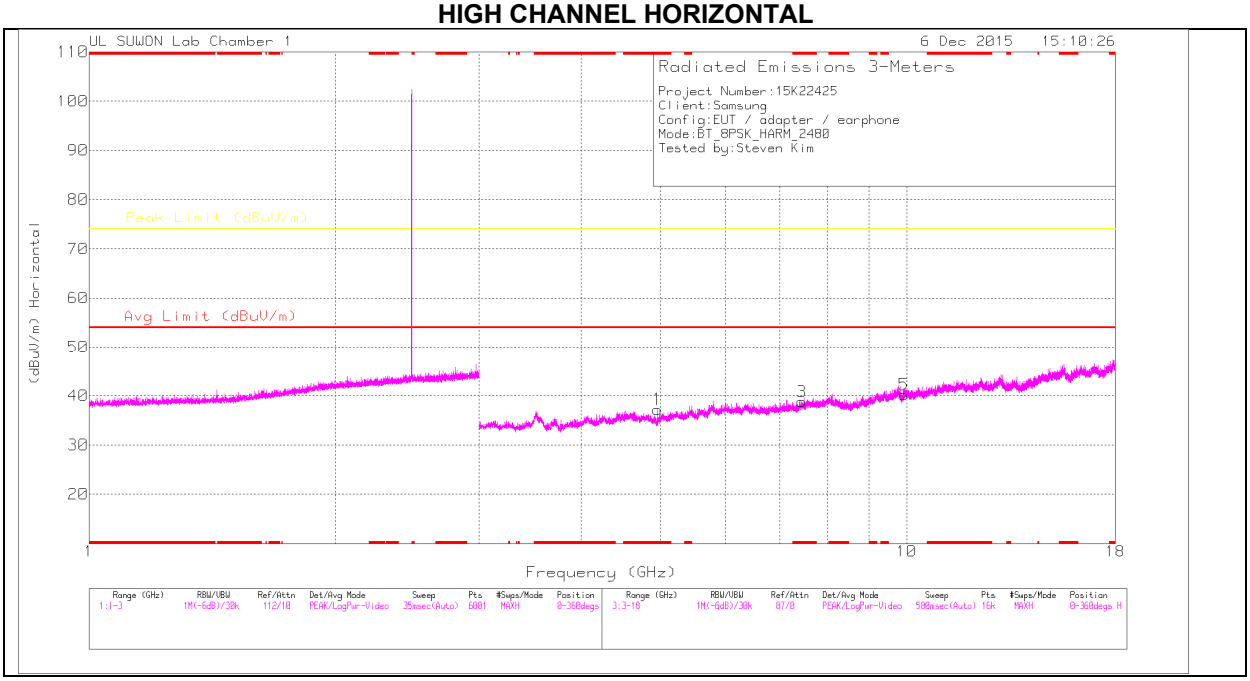
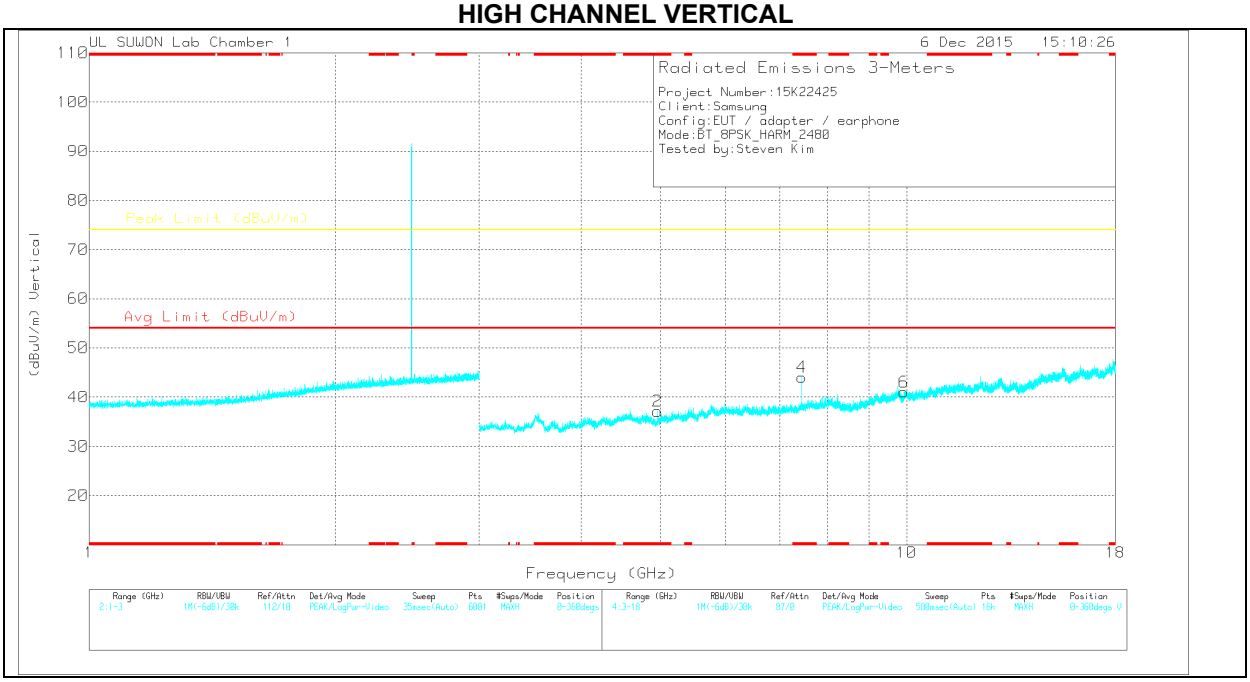
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.959	37.22	PK	34	-34	37.22	-	-	74	-36.78	0-360	100	H
3	* 7.44	33.68	PK	35.8	-30.7	38.78	-	-	74	-35.22	0-360	200	H
5	9.921	30.02	PK	37.4	-27.2	40.22	-	-	74	-33.78	0-360	200	H
2	* 4.96	37.14	PK	34	-34	37.14	-	-	74	-36.86	0-360	100	V
4	* 7.44	38.95	PK	35.8	-30.7	44.05	-	-	74	-29.95	0-360	100	V
6	9.922	30.84	PK	37.4	-27.2	41.04	-	-	74	-32.96	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.44	48.5	PK2	35.8	-30.7	53.6	-	-	74	-20.4	342	103	V
* 7.44	35.88	VA1T	35.8	-30.7	40.98	54	-13.02	-	-	342	103	V
* 4.804	48.71	PK2	34	-33.8	48.91	-	-	74	-25.09	272	366	V
* 4.804	36.11	VA1T	34	-33.8	36.31	54	-17.69	-	-	272	366	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

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

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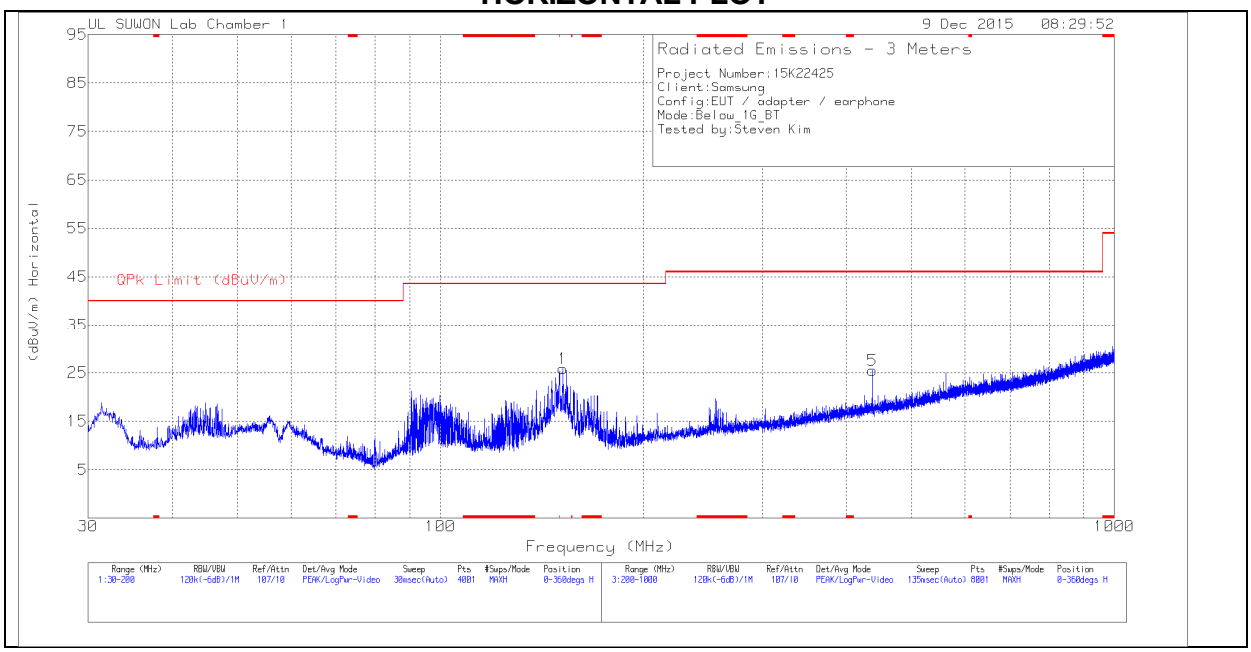
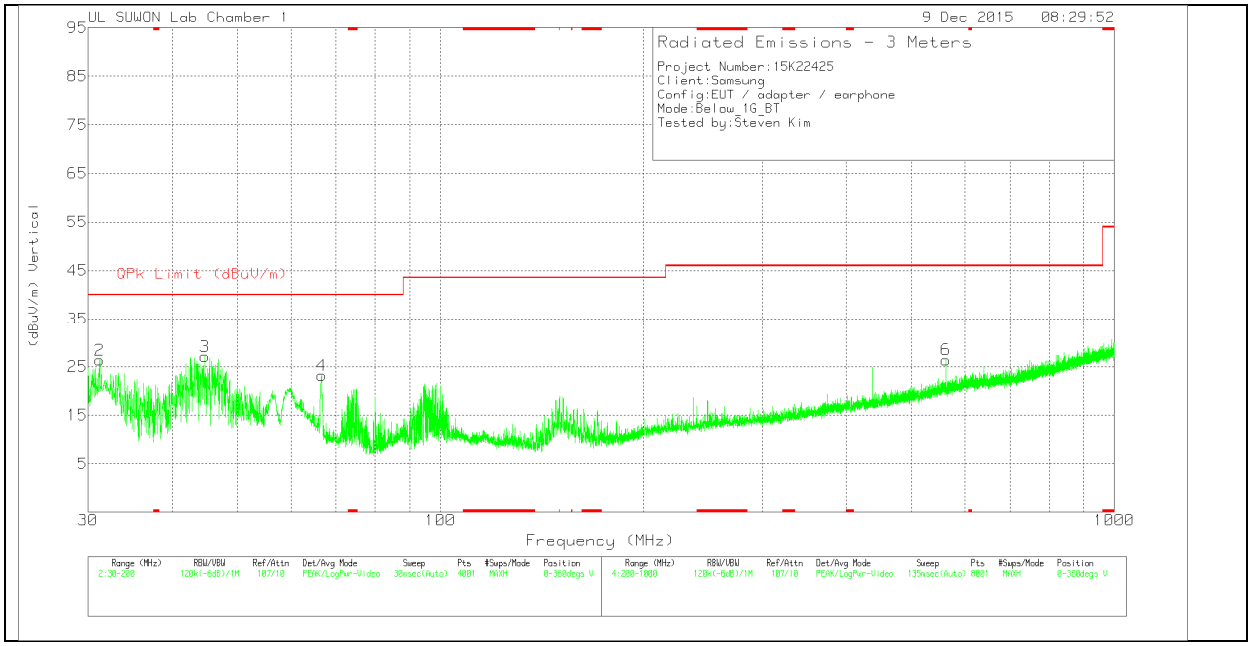
9.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



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BELOW 1 GHz TABLE

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163-749	Below_1G	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	152.0175	46.31	Pk	8.2	-28.6	25.91	43.52	-17.61	0-360	200	H
2	31.19	46.6	Pk	10.3	-30.5	26.4	40	-13.6	0-360	100	V
3	44.705	43.89	Pk	13.5	-30.2	27.19	40	-12.81	0-360	100	V
4	66.5925	42.28	Pk	10.7	-29.8	23.18	40	-16.82	0-360	100	V
5	437.5	36.04	Pk	16.1	-26.6	25.54	46.02	-20.48	0-360	200	H
6	562.6	34.04	Pk	18.4	-26	26.44	46.02	-19.58	0-360	100	V

Pk - Peak detector

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

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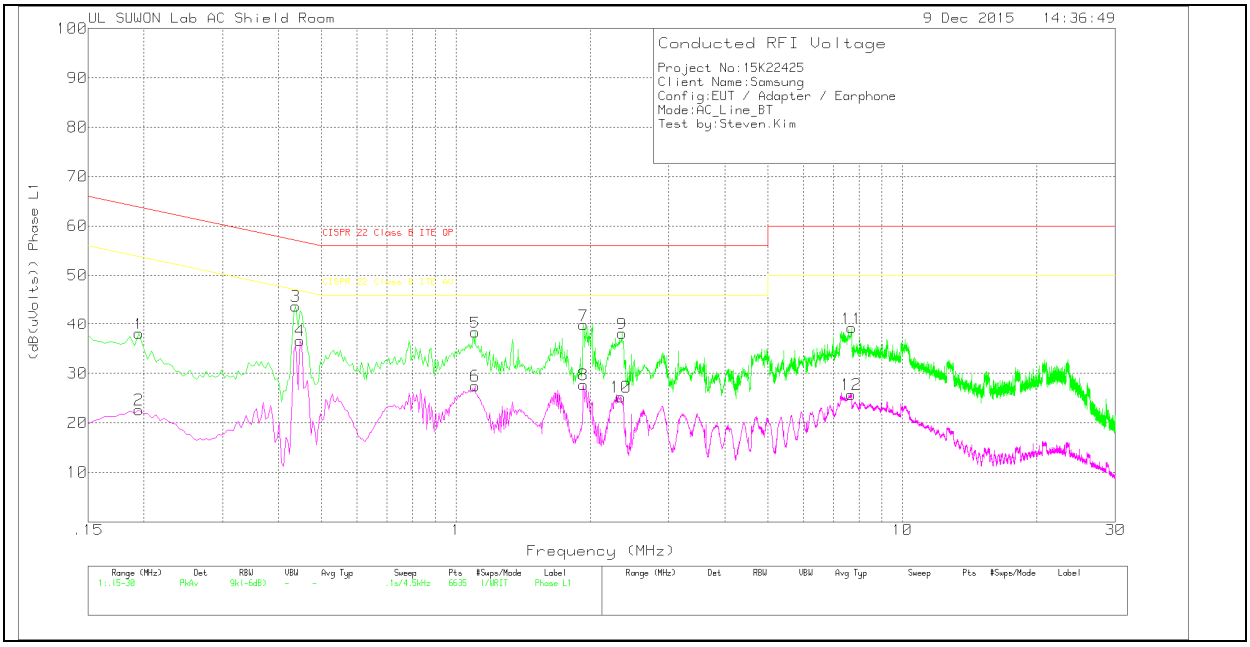
6 WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_N	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.195	28.06	Pk	10	0	38.06	63.82	-25.76	-	-
2	.195	12.66	Av	10	0	22.66	-	-	53.82	-31.16
3	.438	33.61	Pk	10.1	0	43.71	57.1	-13.39	-	-
4	.447	26.45	Av	10.1	0	36.55	-	-	46.93	-10.38
5	1.104	28.36	Pk	9.9	0	38.26	56	-17.74	-	-
6	1.104	17.58	Av	9.9	0	27.48	-	-	46	-18.52
7	1.932	29.87	Pk	9.8	.1	39.77	56	-16.23	-	-
8	1.932	17.76	Av	9.8	.1	27.66	-	-	46	-18.34
9	2.355	28.11	Pk	9.8	.1	38.01	56	-17.99	-	-
10	2.3415	15.31	Av	9.8	.1	25.21	-	-	46	-20.79
11	7.692	29.2	Pk	9.9	.1	39.2	60	-20.8	-	-
12	7.6785	15.72	Av	9.9	.1	25.72	-	-	50	-24.28
1	.195	28.06	Pk	10	0	38.06	63.82	-25.76	-	-
2	.195	12.66	Av	10	0	22.66	-	-	53.82	-31.16

Pk - Peak detector

Av - Average detection

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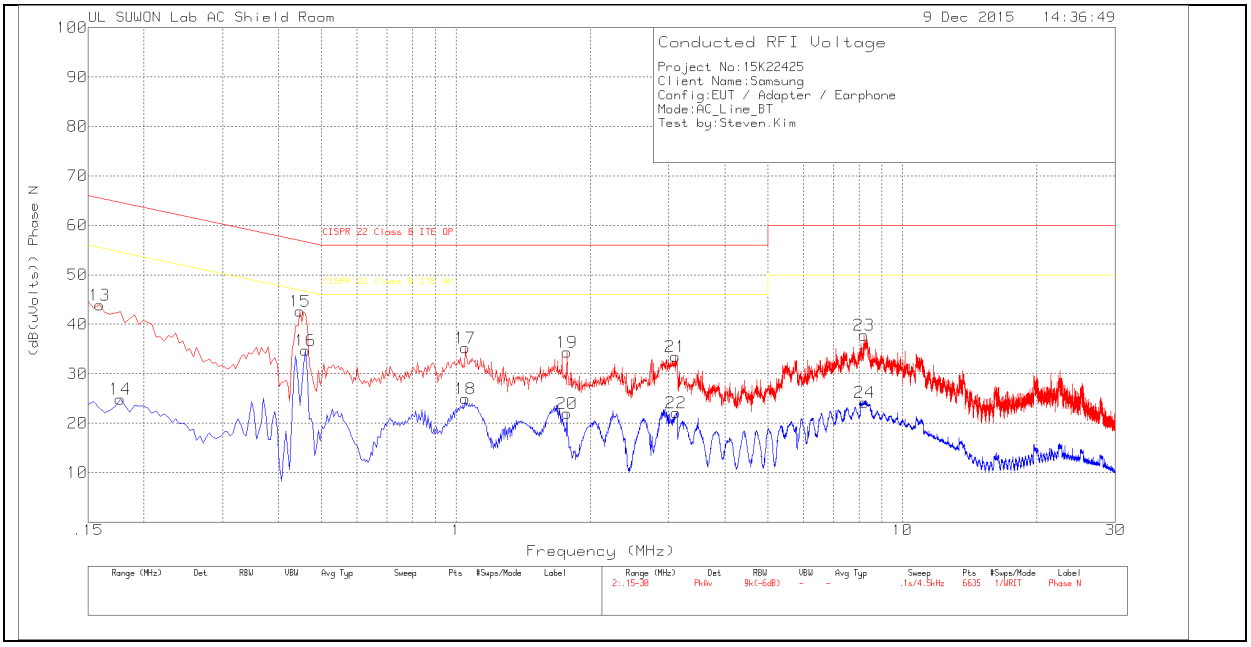
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_L1	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.159	33.88	Pk	10	0	43.88	65.52	-21.64	-	-
14	.177	14.79	Av	10.1	0	24.89	-	-	54.63	-29.74
15	.447	32.49	Pk	10.1	0	42.59	56.93	-14.34	-	-
16	.4605	24.59	Av	10.1	0	34.69	-	-	46.68	-11.99
17	1.05	25.33	Pk	9.9	0	35.23	56	-20.77	-	-
18	1.05	15.08	Av	9.9	0	24.98	-	-	46	-21.02
19	1.7745	24.44	Pk	9.8	.1	34.34	56	-21.66	-	-
20	1.7745	12.08	Av	9.8	.1	21.98	-	-	46	-24.02
21	3.0975	23.58	Pk	9.8	.1	33.48	56	-22.52	-	-
22	3.1155	12.16	Av	9.8	.1	22.06	-	-	46	-23.94
23	8.2005	27.76	Pk	9.9	.1	37.76	60	-22.24	-	-
24	8.2275	14.2	Av	9.9	.1	24.2	-	-	50	-25.8
13	.159	33.88	Pk	10	0	43.88	65.52	-21.64	-	-
14	.177	14.79	Av	10.1	0	24.89	-	-	54.63	-29.74

Pk - Peak detector

Av - Average detection

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