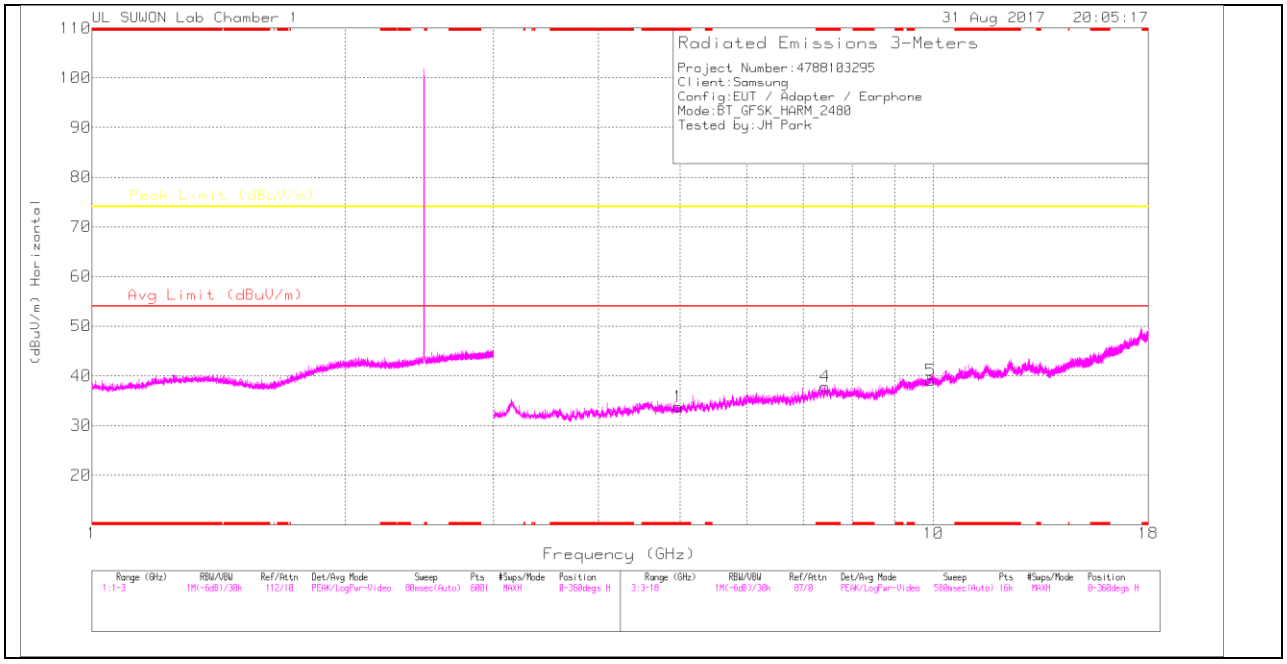
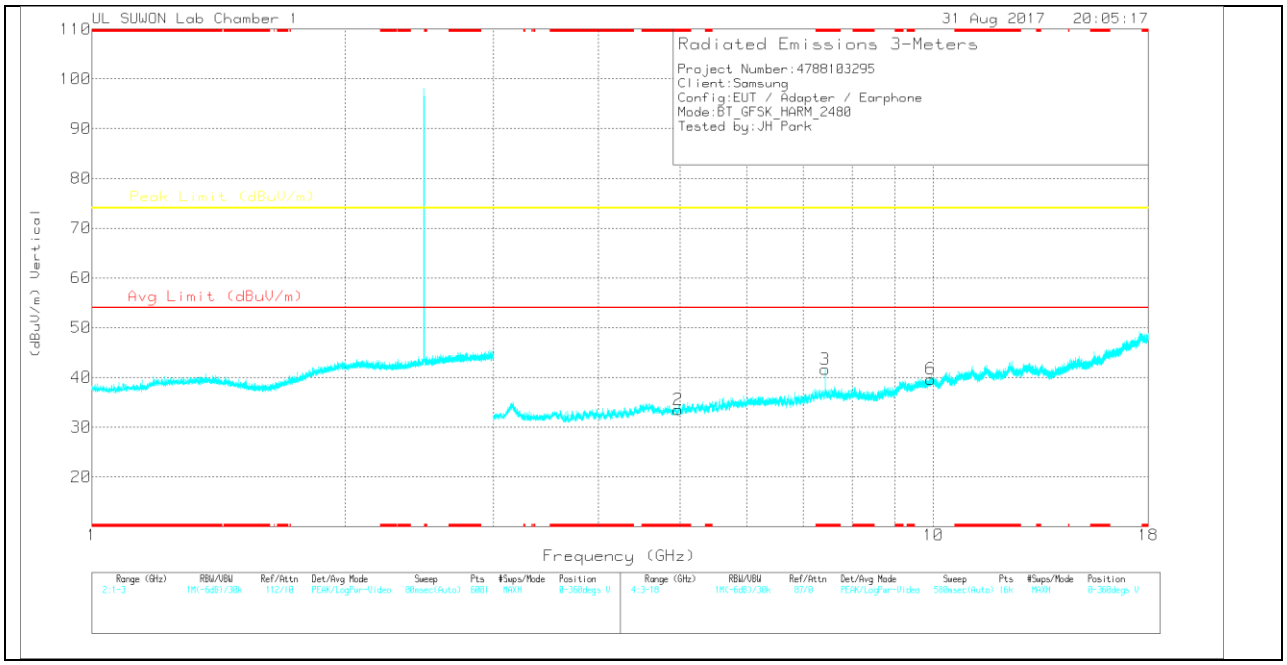
HIGH CHANNEL HORIZONTAL



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	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.971	31.71	PK	33.8	-31.7	33.81	-	-	74	-40.19	0-360	150	H
4	* 7.437	29.09	PK	35.9	-27.2	37.79	-	-	74	-36.21	0-360	150	H
5	9.918	24.42	PK	37.1	-22.4	39.12	-	-	74	-34.88	0-360	150	H
2	* 4.97	31.37	PK	33.8	-31.6	33.57	-	-	74	-40.43	0-360	150	V
3	* 7.441	32.94	PK	35.9	-27.2	41.64	-	-	74	-32.36	0-360	150	V
6	9.925	24.87	PK	37.1	-22.3	39.67	-	-	74	-34.33	0-360	250	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.44	42.61	PK2	35.9	-27.2	51.31	-	-	74	-22.69	8	120	V
* 7.44	32.47	VA1T	35.9	-27.2	41.17	54	-12.83	-	-	8	120	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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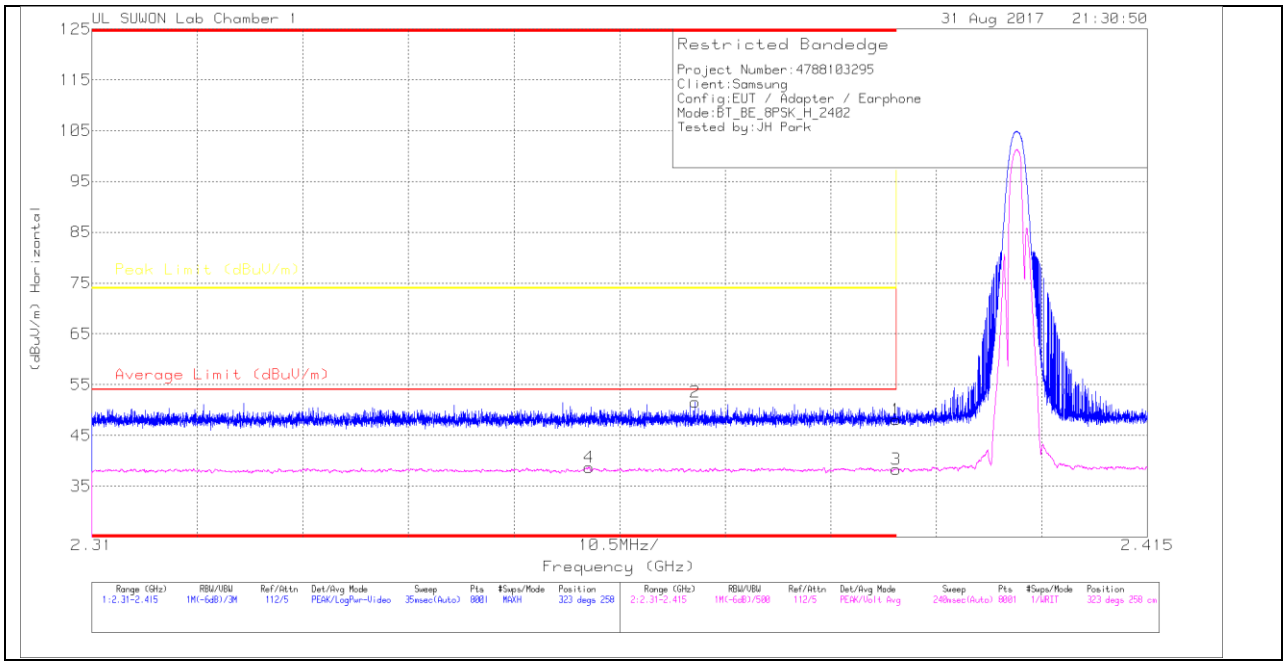
10.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531 _3117_00 168717	10dB_ATT (dB)_1708 09	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	42.51	Pk	31.3	-25.7	48.11	-	-	74	-25.89	323	258	H
2	* 2.37	46.18	Pk	31.2	-25.8	51.58	-	-	74	-22.42	323	258	H
3	* 2.39	32.78	VA1T	31.3	-25.7	38.38	54	-15.62	-	-	323	258	H
4	* 2.359	33.33	VA1T	31.2	-25.8	38.73	54	-15.27	-	-	323	258	H

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

Pk - Peak detector

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

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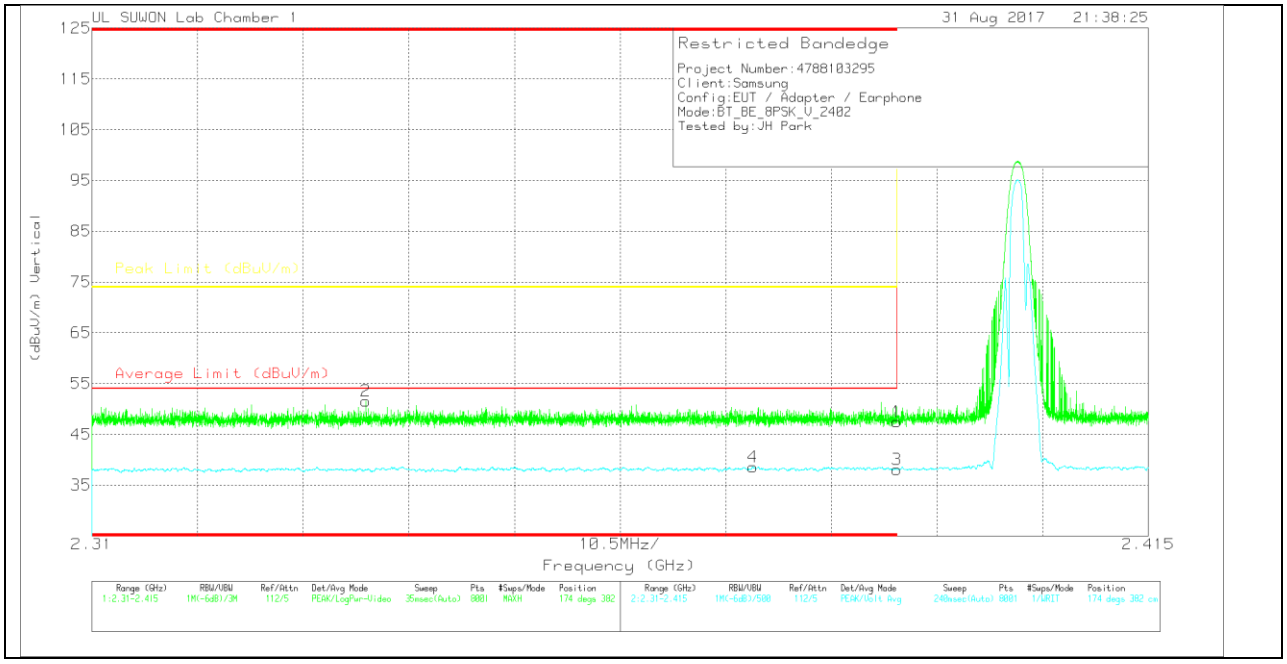
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531 _3117_00 168717	10dB_ATT (dB)_1708 09	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.87	Pk	31.3	-25.7	47.47	-	-	74	-26.53	174	382	V
2	* 2.337	46.14	Pk	31.2	-25.8	51.54	-	-	74	-22.46	174	382	V
3	* 2.39	32.48	VA1T	31.3	-25.7	38.08	54	-15.92	-	-	174	382	V
4	* 2.376	33.02	VA1T	31.3	-25.7	38.62	54	-15.38	-	-	174	382	V

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

Pk - Peak detector

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

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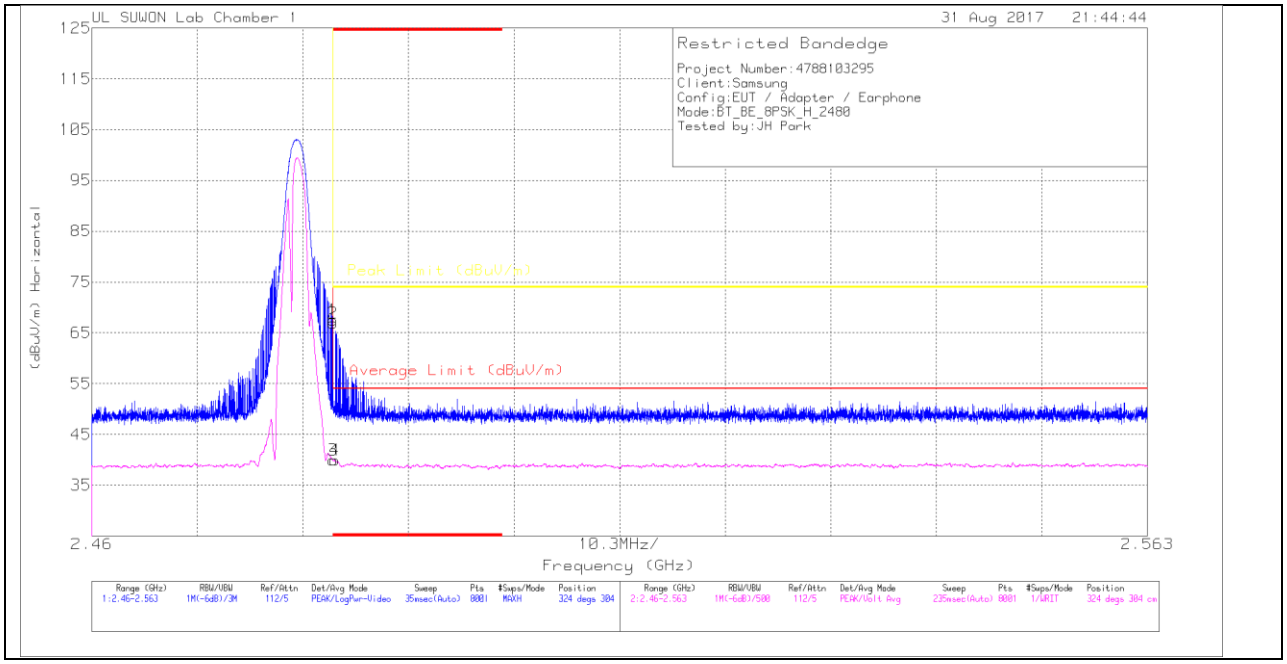
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00168717	10dB_ATT (dB)_170809	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	61.38	Pk	31.6	-25.5	67.48	-	-	74	-6.52	324	304	H
2	* 2.484	60.83	Pk	31.6	-25.5	66.93	-	-	74	-7.07	324	304	H
3	* 2.484	33.79	VA1T	31.6	-25.5	39.89	54	-14.11	-	-	324	304	H
4	* 2.484	33.83	VA1T	31.6	-25.5	39.93	54	-14.07	-	-	324	304	H

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

Pk - Peak detector

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

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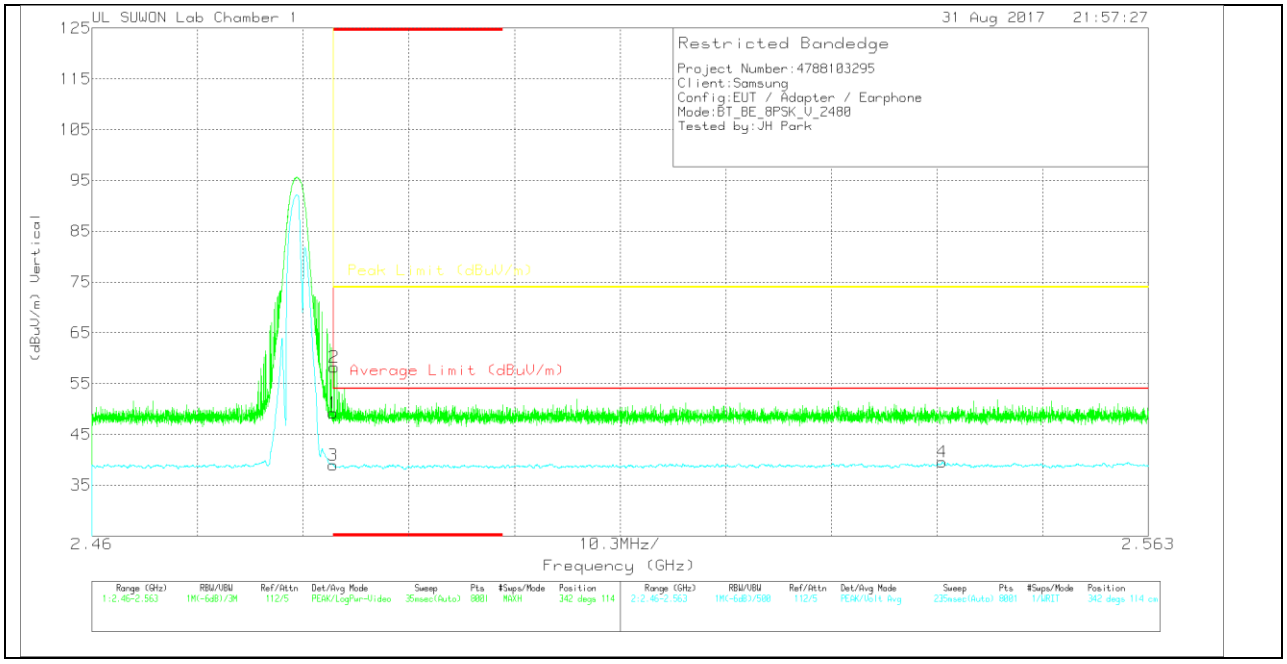
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531 _3117_00 168717	10dB_ATT (dB)_1708 09	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	43.06	Pk	31.6	-25.5	49.16	-	-	74	-24.84	342	114	V
2	* 2.484	52.14	Pk	31.6	-25.5	58.24	-	-	74	-15.76	342	114	V
3	* 2.484	32.9	VA1T	31.6	-25.5	39	54	-15	-	-	342	114	V
4	2.543	33.01	VA1T	31.7	-25.2	39.51	54	-14.49	-	-	342	114	V

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

Pk - Peak detector

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

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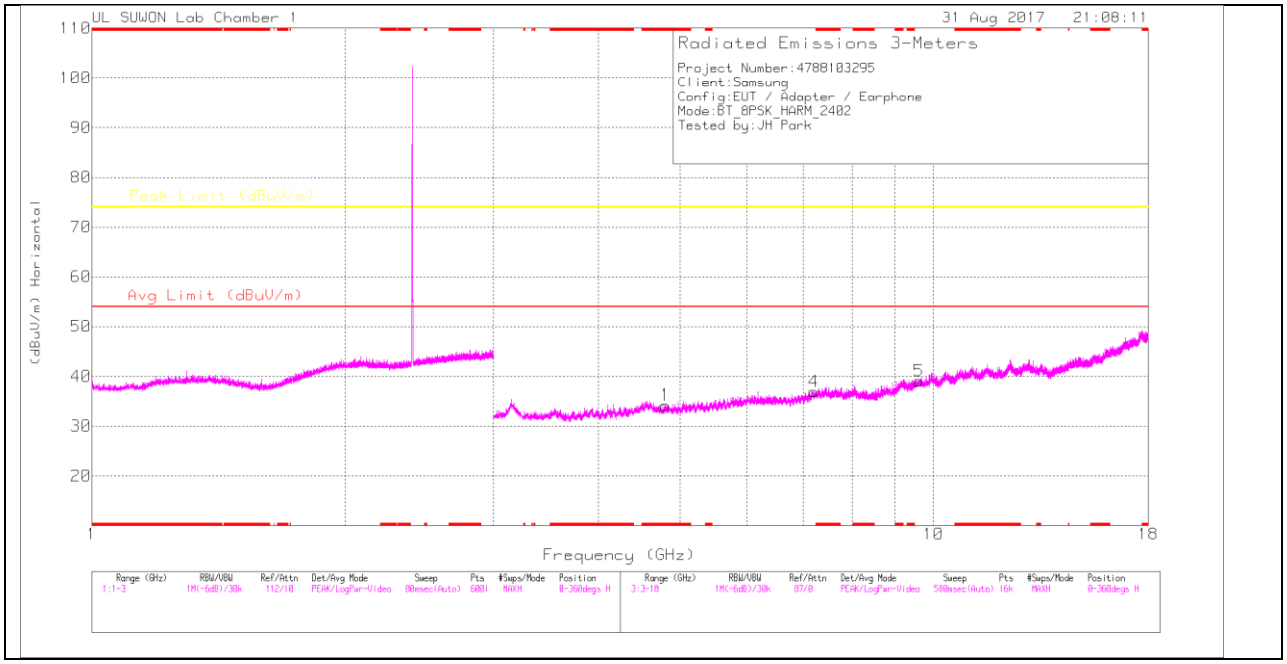
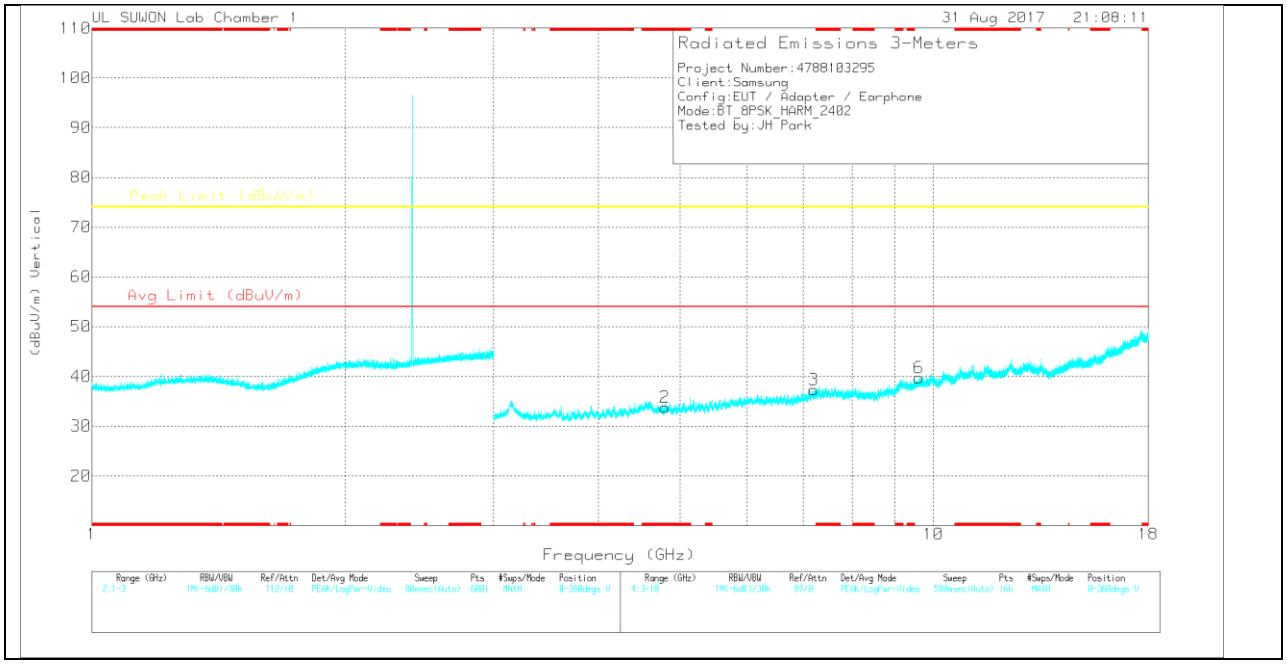
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL 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	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.806	32.03	PK	33.8	-31.6	34.23	-	-	74	-39.77	0-360	150	H
4	7.209	29.14	PK	35.9	-28.1	36.94	-	-	74	-37.06	0-360	250	H
5	9.608	25.88	PK	36.7	-23.5	39.08	-	-	74	-34.92	0-360	250	H
2	* 4.8	31.59	PK	33.8	-31.6	33.79	-	-	74	-40.21	0-360	150	V
3	7.205	29.49	PK	35.9	-28.1	37.29	-	-	74	-36.71	0-360	150	V
6	9.601	26.5	PK	36.7	-23.5	39.7	-	-	74	-34.3	0-360	250	V

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

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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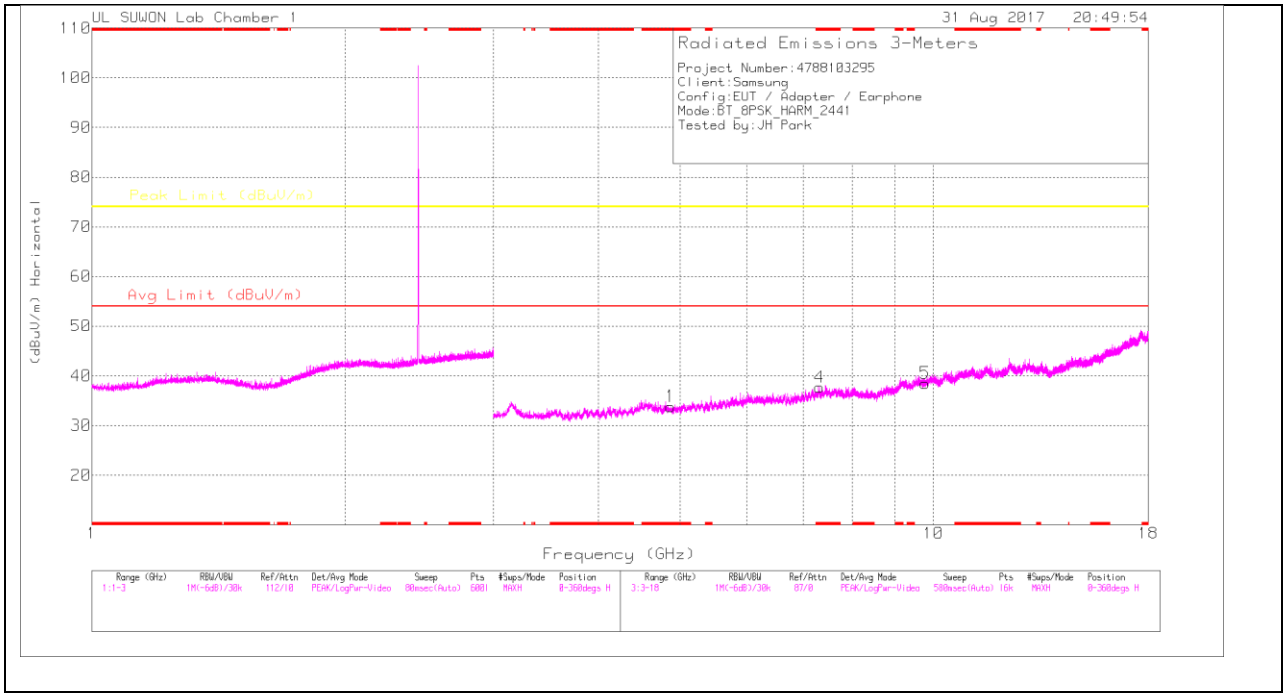
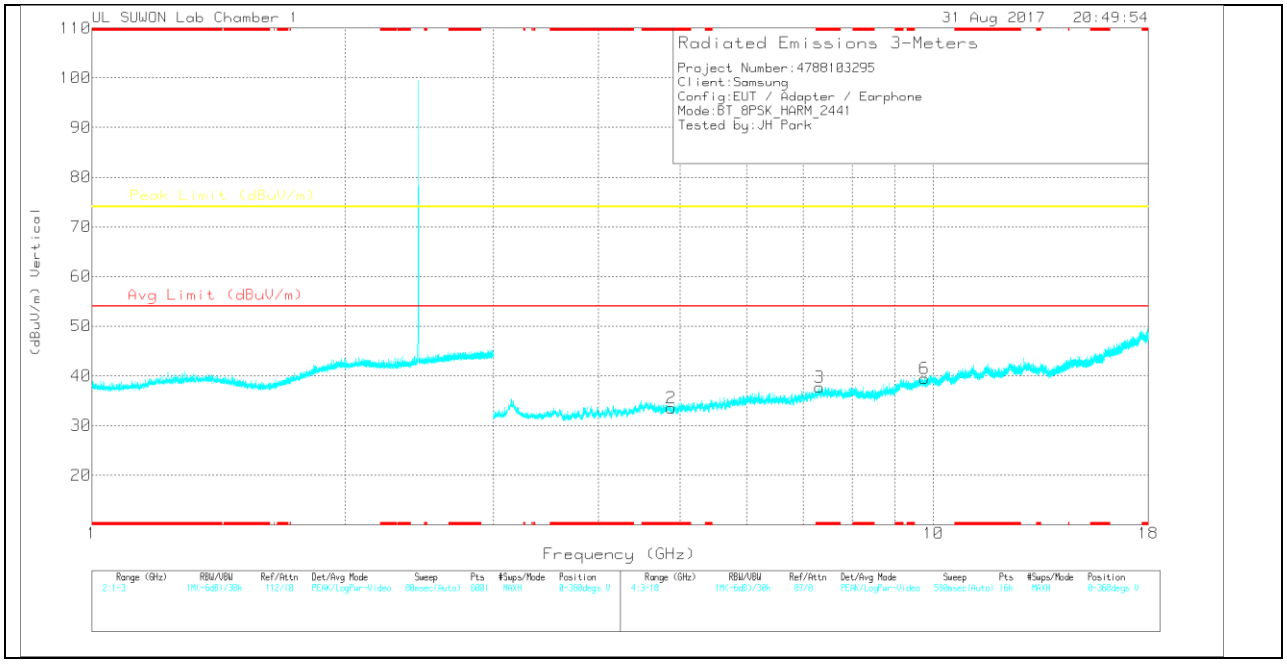
MID CHANNEL HORIZONTAL



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	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.868	31.75	PK	33.8	-31.7	33.85	-	-	74	-40.15	0-360	250	H
4	* 7.324	29.35	PK	35.9	-27.5	37.75	-	-	74	-36.25	0-360	250	H
5	9.767	25.83	PK	36.9	-24.2	38.53	-	-	74	-35.47	0-360	150	H
2	* 4.881	31.41	PK	33.8	-31.7	33.51	-	-	74	-40.49	0-360	150	V
3	* 7.323	29.42	PK	35.9	-27.6	37.72	-	-	74	-36.28	0-360	150	V
6	9.764	26.77	PK	36.9	-24.2	39.47	-	-	74	-34.53	0-360	150	V

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

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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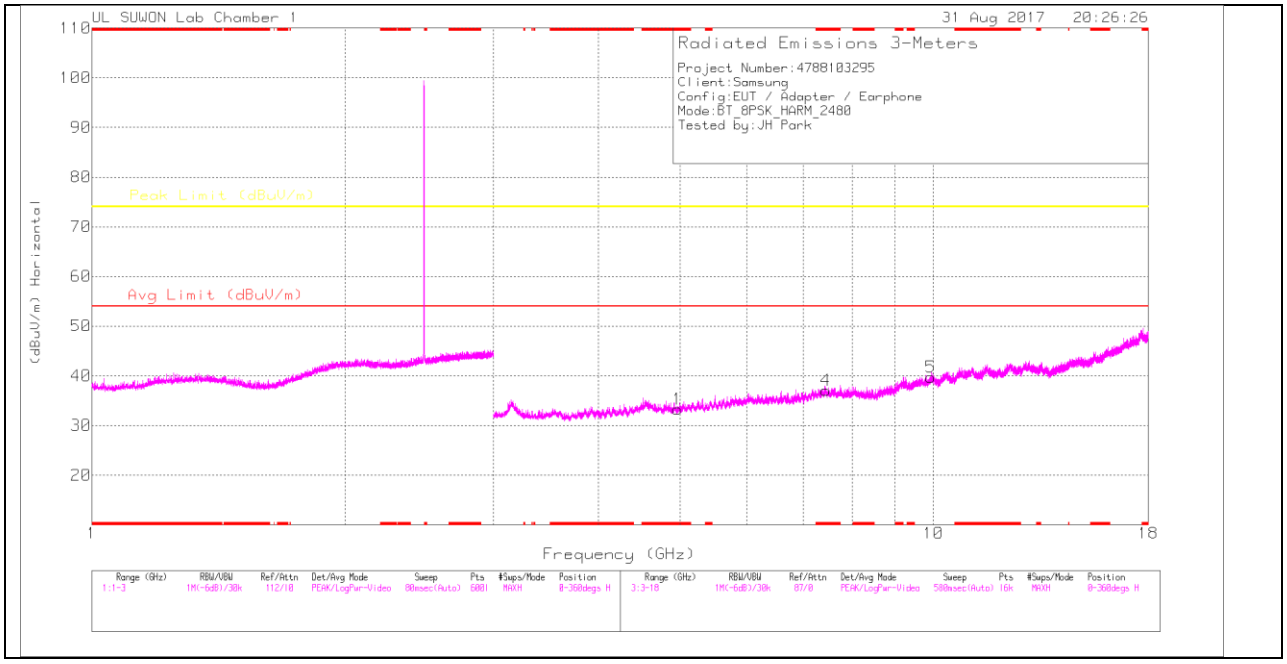
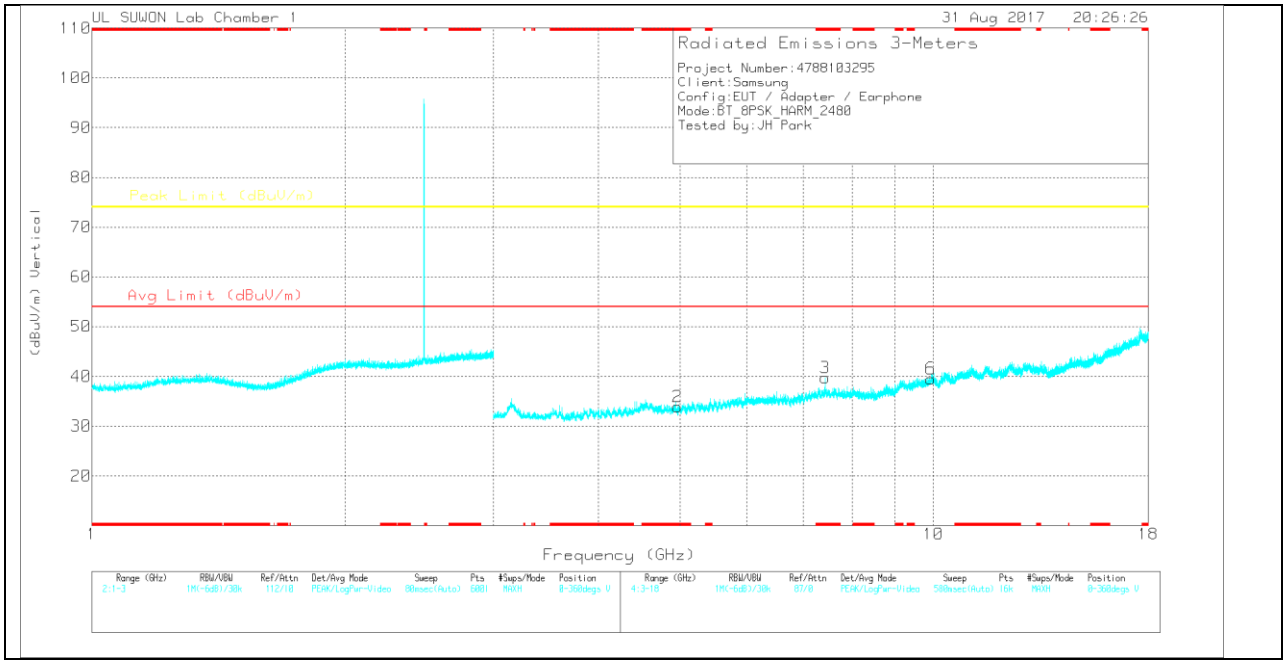
HIGH CHANNEL HORIZONTAL



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	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.96	31.13	PK	33.8	-31.6	33.33	-	-	74	-40.67	0-360	250	H
4	* 7.446	28.43	PK	35.9	-27.2	37.13	-	-	74	-36.87	0-360	250	H
5	9.933	24.85	PK	37.1	-22.2	39.75	-	-	74	-34.25	0-360	250	H
2	* 4.966	31.69	PK	33.8	-31.6	33.89	-	-	74	-40.11	0-360	250	V
3	* 7.44	31.06	PK	35.9	-27.2	39.76	-	-	74	-34.24	0-360	150	V
6	9.931	24.64	PK	37.1	-22.2	39.54	-	-	74	-34.46	0-360	250	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00168717	3GHz_HP(dB)_170809	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.44	41.85	PK2	35.9	-27.2	50.55	-	-	74	-23.45	11	134	V
* 7.44	29.29	VA1T	35.9	-27.2	37.99	54	-16.01	-	-	11	134	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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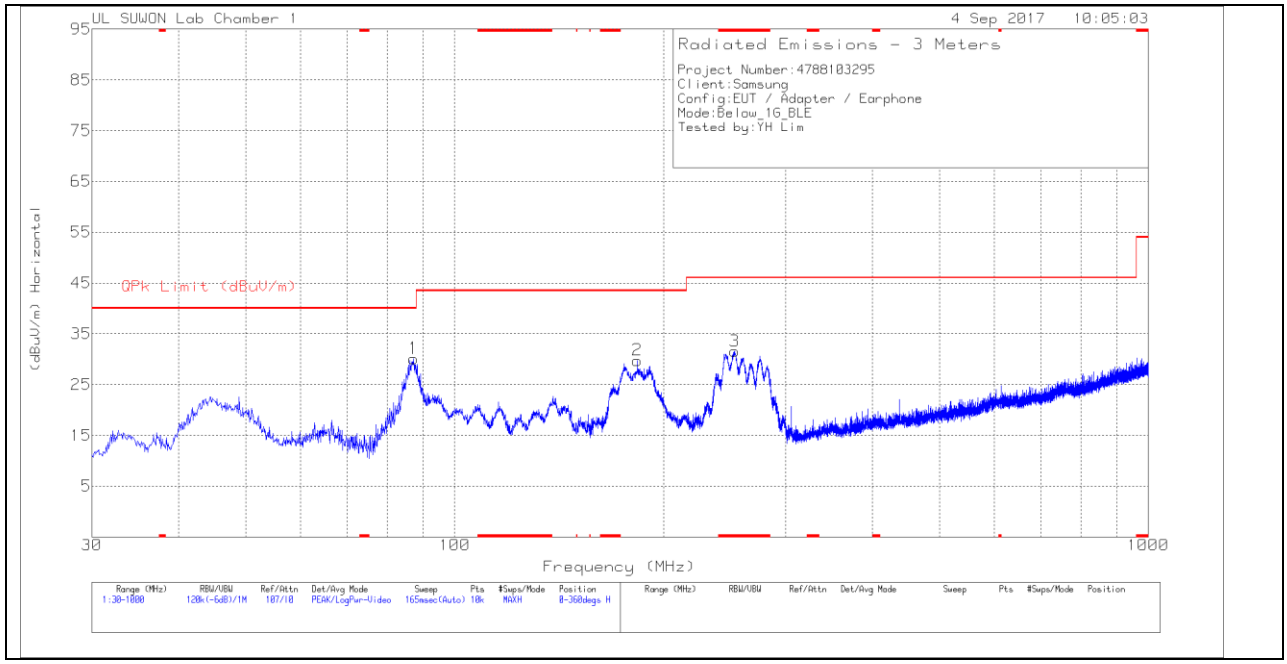
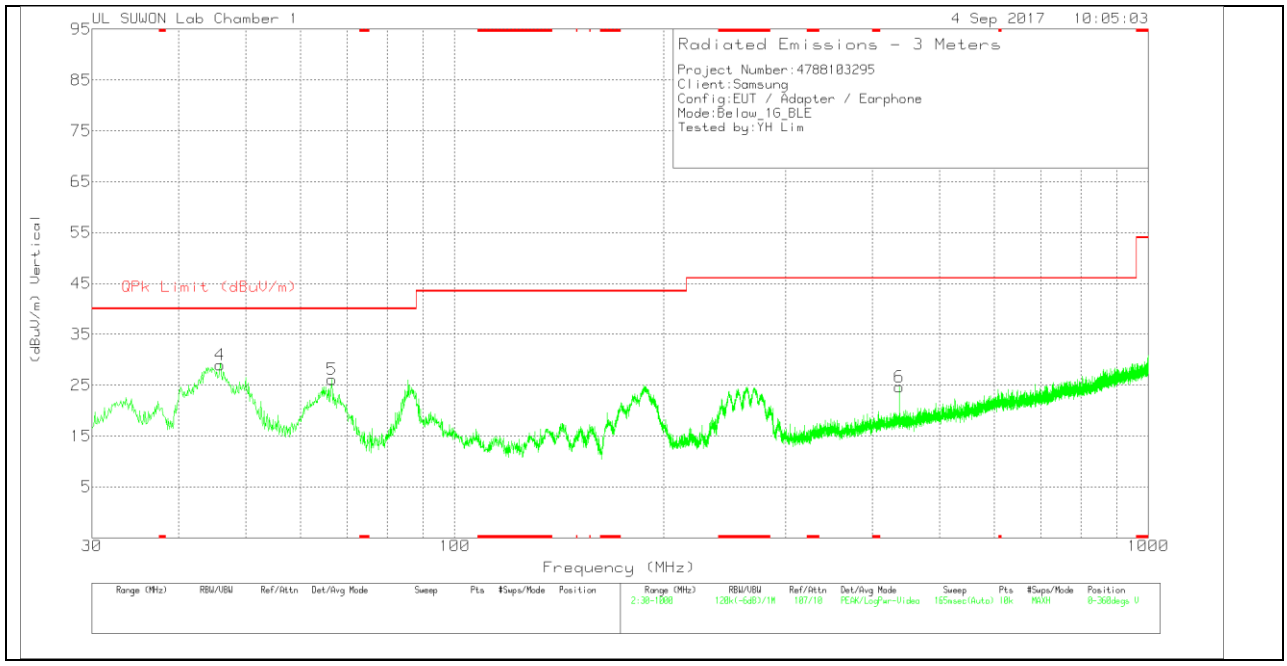
10.3. WORST-CASE BELOW 1 GHz

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_750(dB)	30-1000MHz[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	87.23	49.96	Pk	8.8	-28.6	30.16	40	-9.84	0-360	200	H
2	183.357	47.69	Pk	9.7	-27.6	29.79	43.52	-13.73	0-360	100	H
3	* 253.585	46.48	Pk	12.3	-27.2	31.58	46.02	-14.44	0-360	100	H
4	45.908	44.64	Pk	13.7	-29.3	29.04	40	-10.96	0-360	100	V
5	66.569	44.29	Pk	10.7	-28.9	26.09	40	-13.91	0-360	100	V
6	437.497	34.76	Pk	15.9	-26	24.66	46.02	-21.36	0-360	100	V

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

Pk - Peak detector

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11. 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.

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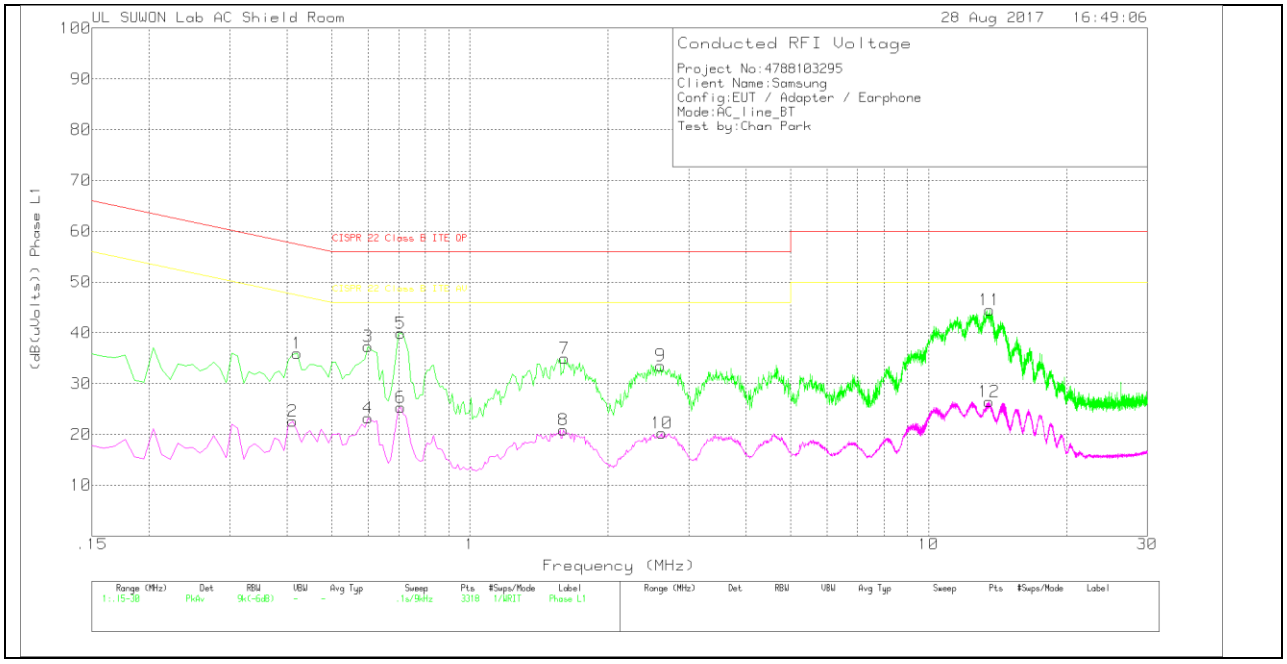
RESULTS

WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_L1_with extension	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.42	25.96	Pk	9.8	.2	35.96	57.45	-21.49	-	-
2	.411	12.61	Av	9.8	.2	22.61	-	-	47.63	-25.02
3	.6	27.34	Pk	9.8	.2	37.34	56	-18.66	-	-
4	.6	13.27	Av	9.8	.2	23.27	-	-	46	-22.73
5	.708	30.07	Pk	9.7	.2	39.97	56	-16.03	-	-
6	.708	15.48	Av	9.7	.2	25.38	-	-	46	-20.62
7	1.608	24.74	Pk	9.9	.3	34.94	56	-21.06	-	-
8	1.599	10.68	Av	9.9	.3	20.88	-	-	46	-25.12
9	2.607	23.45	Pk	9.8	.3	33.55	56	-22.45	-	-
10	2.625	10.18	Av	9.8	.3	20.28	-	-	46	-25.72
11	13.578	34.34	Pk	9.8	.4	44.54	60	-15.46	-	-
12	13.551	16.26	Av	9.8	.4	26.46	-	-	50	-23.54

Pk - Peak detector

Av - Average detection

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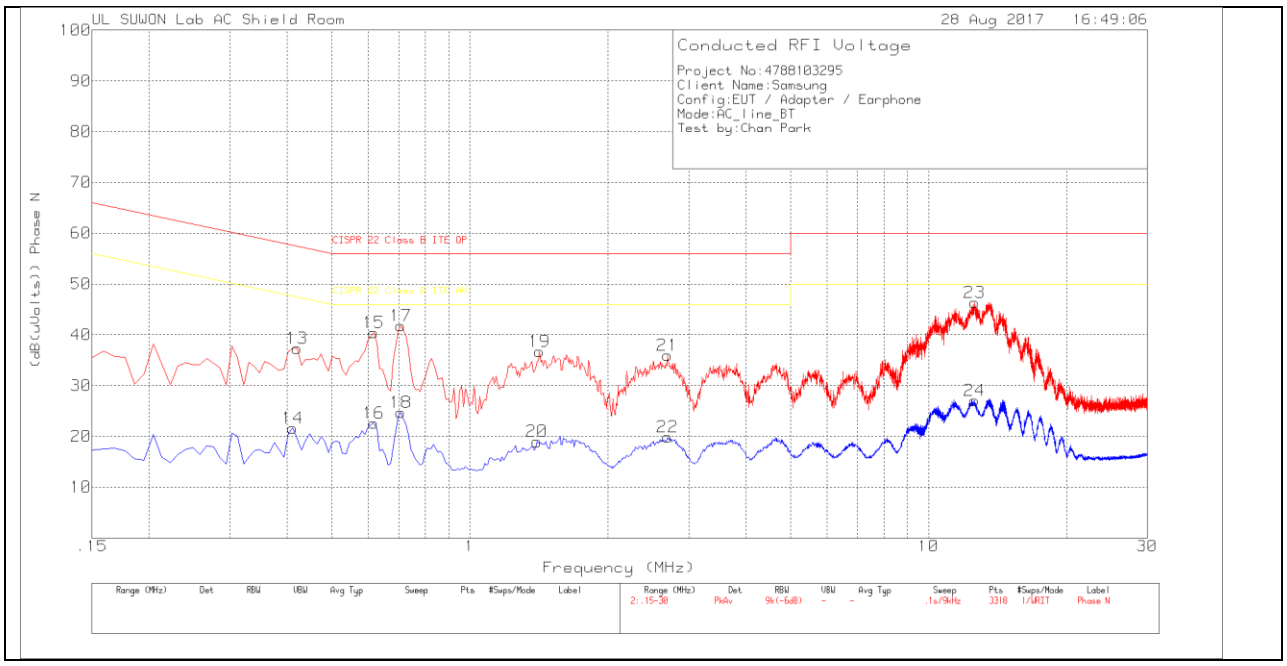
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_N _with extension	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.42	27.37	Pk	9.8	.2	37.37	57.45	-20.08	-	-
14	.411	11.61	Av	9.8	.2	21.61	-	-	47.63	-26.02
15	.618	30.51	Pk	9.7	.2	40.41	56	-15.59	-	-
16	.618	12.66	Av	9.7	.2	22.56	-	-	46	-23.44
17	.708	31.73	Pk	9.8	.2	41.73	56	-14.27	-	-
18	.708	14.66	Av	9.8	.2	24.66	-	-	46	-21.34
19	1.419	26.46	Pk	9.9	.3	36.66	56	-19.34	-	-
20	1.401	8.76	Av	9.9	.3	18.96	-	-	46	-27.04
21	2.697	25.76	Pk	9.9	.3	35.96	56	-20.04	-	-
22	2.697	9.74	Av	9.9	.3	19.94	-	-	46	-26.06
23	12.606	36.22	Pk	9.8	.3	46.32	60	-13.68	-	-
24	12.606	16.94	Av	9.8	.3	27.04	-	-	50	-22.96

Pk - Peak detector

Av - Average detection

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