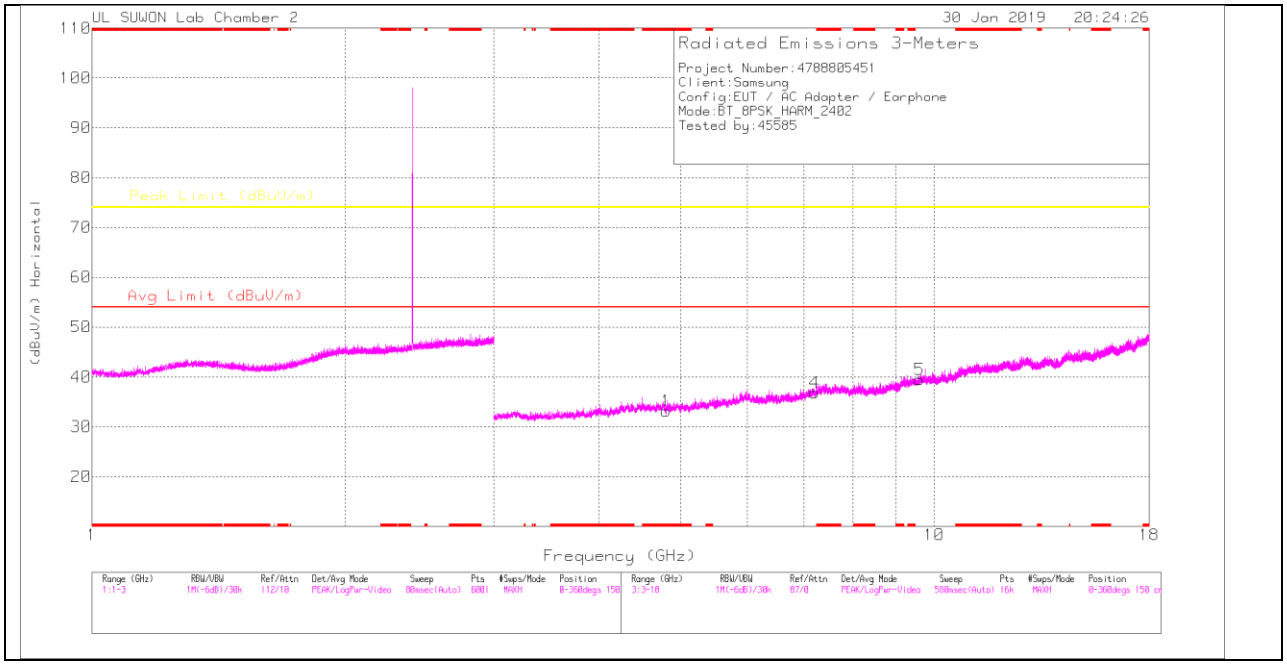
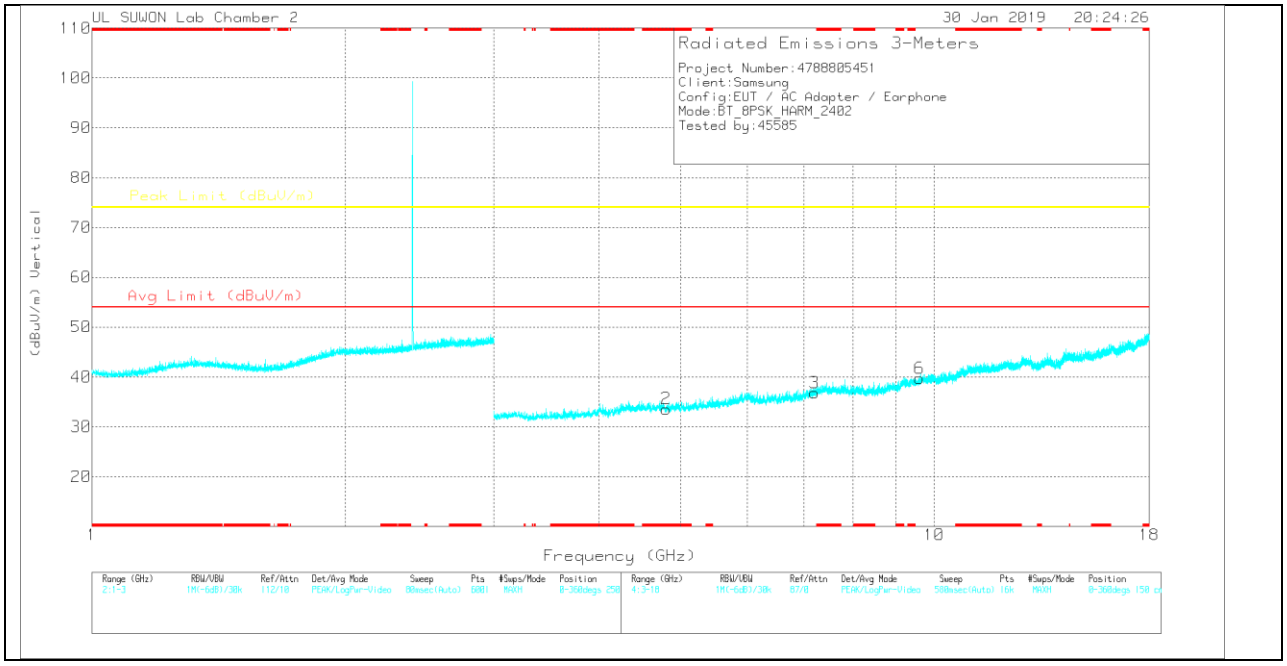
HARMONICS AND SPURIOUS EMISSIONS

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_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.805	27.24	PK	34	-28.1	33.14	-	-	74	-40.86	0-360	250	H
4	7.208	25.97	PK	36.1	-25.3	36.77	-	-	74	-37.23	0-360	250	H
5	9.609	24.35	PK	37	-21.9	39.45	-	-	74	-34.55	0-360	150	H
2	* 4.805	27.7	PK	34	-28.1	33.6	-	-	74	-40.4	0-360	150	V
3	7.208	26.08	PK	36.1	-25.3	36.88	-	-	74	-37.12	0-360	250	V
6	9.606	24.6	PK	37	-21.9	39.7	-	-	74	-34.3	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-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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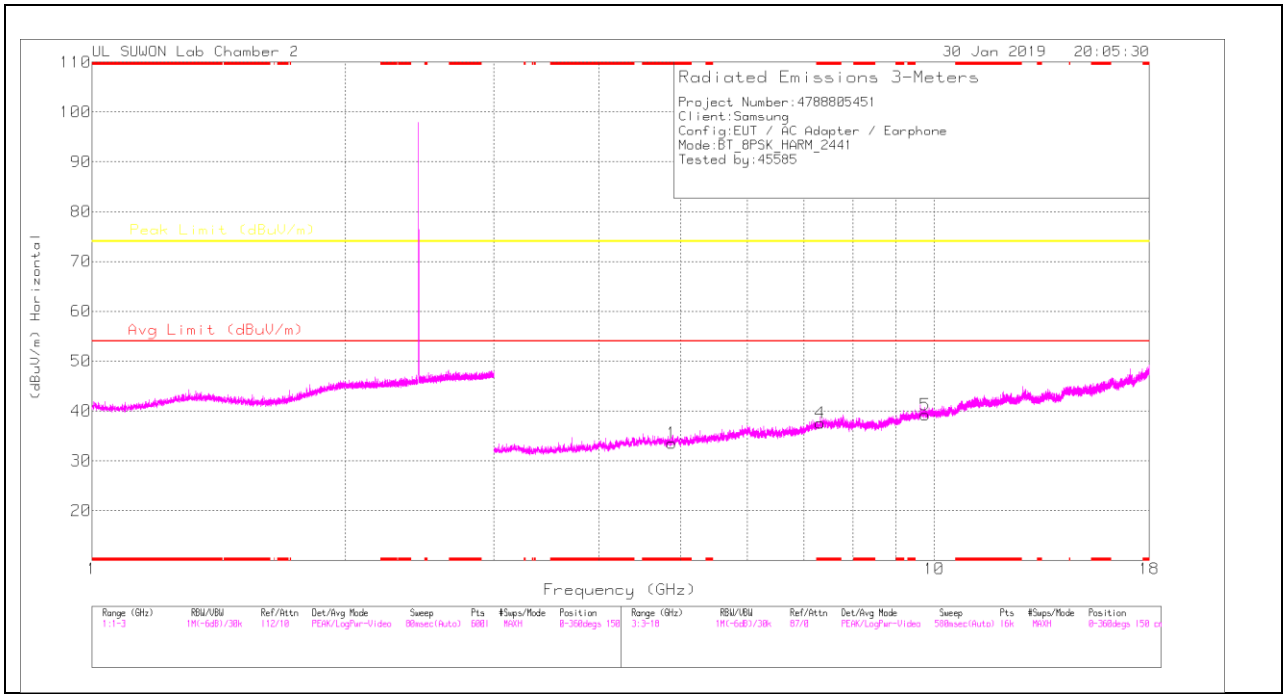
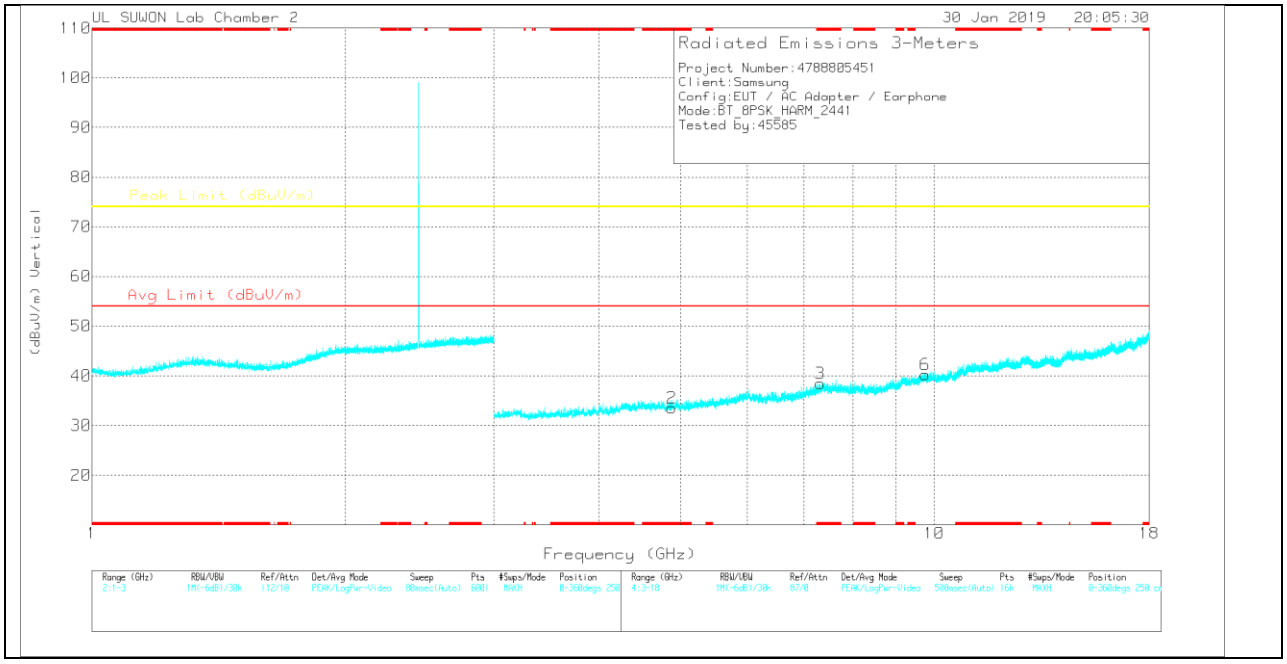
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.882	27.47	PK	34	-27.9	33.57	-	-	74	-40.43	0-360	150	H
4	* 7.323	26.28	PK	36.2	-24.9	37.58	-	-	74	-36.42	0-360	150	H
5	9.765	23.52	PK	37.2	-21.5	39.22	-	-	74	-34.78	0-360	250	H
2	* 4.882	27.4	PK	34	-27.9	33.5	-	-	74	-40.5	0-360	250	V
3	* 7.323	27.18	PK	36.2	-24.9	38.48	-	-	74	-35.52	0-360	150	V
6	9.764	24.48	PK	37.2	-21.5	40.18	-	-	74	-33.82	0-360	150	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-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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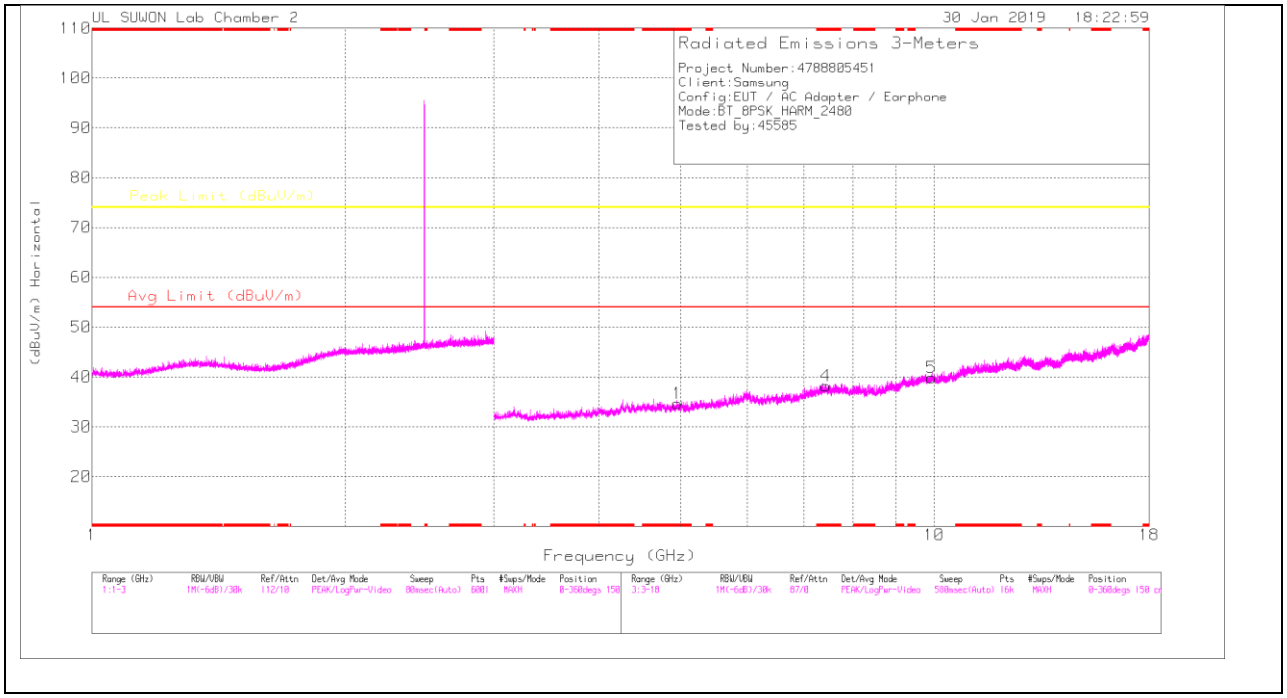
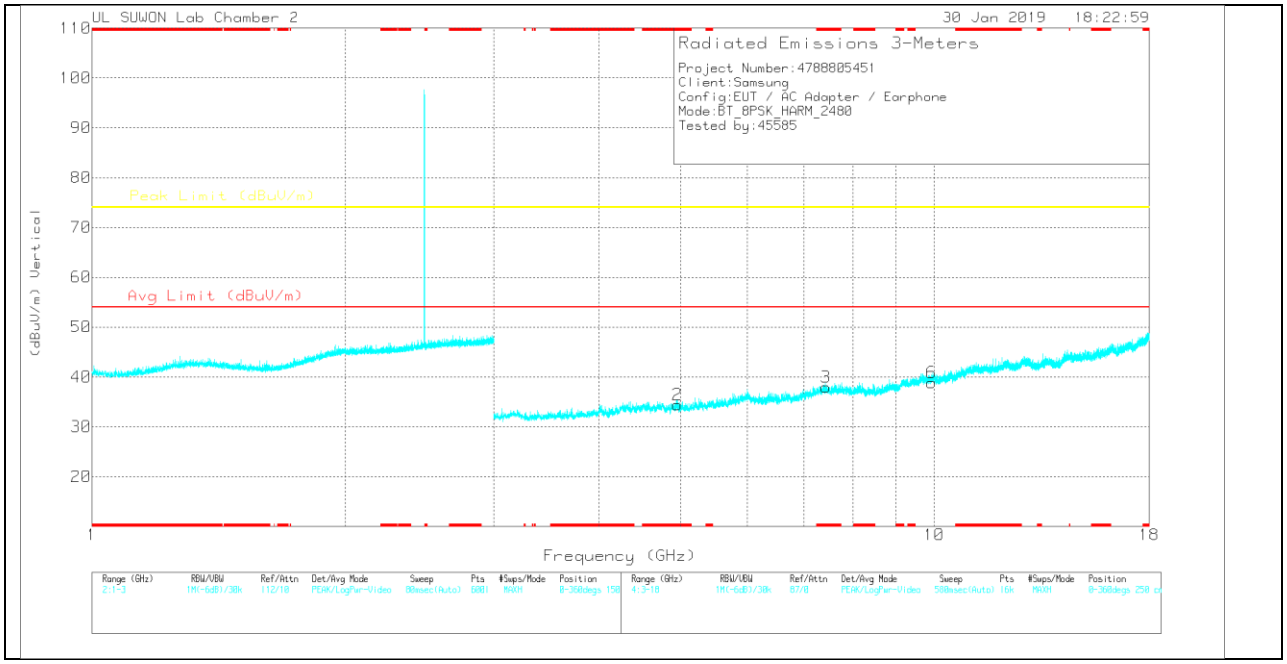
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.959	27.73	PK	34.1	-27.1	34.73	-	-	74	-39.27	0-360	250	H
4	* 7.442	26.14	PK	36.2	-24.1	38.24	-	-	74	-35.76	0-360	150	H
5	9.921	23.51	PK	37.4	-21	39.91	-	-	74	-34.09	0-360	150	H
2	* 4.959	27.4	PK	34.1	-27.1	34.4	-	-	74	-39.6	0-360	250	V
3	* 7.44	25.74	PK	36.2	-24	37.94	-	-	74	-36.06	0-360	250	V
6	9.921	22.45	PK	37.4	-21	38.85	-	-	74	-35.15	0-360	150	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-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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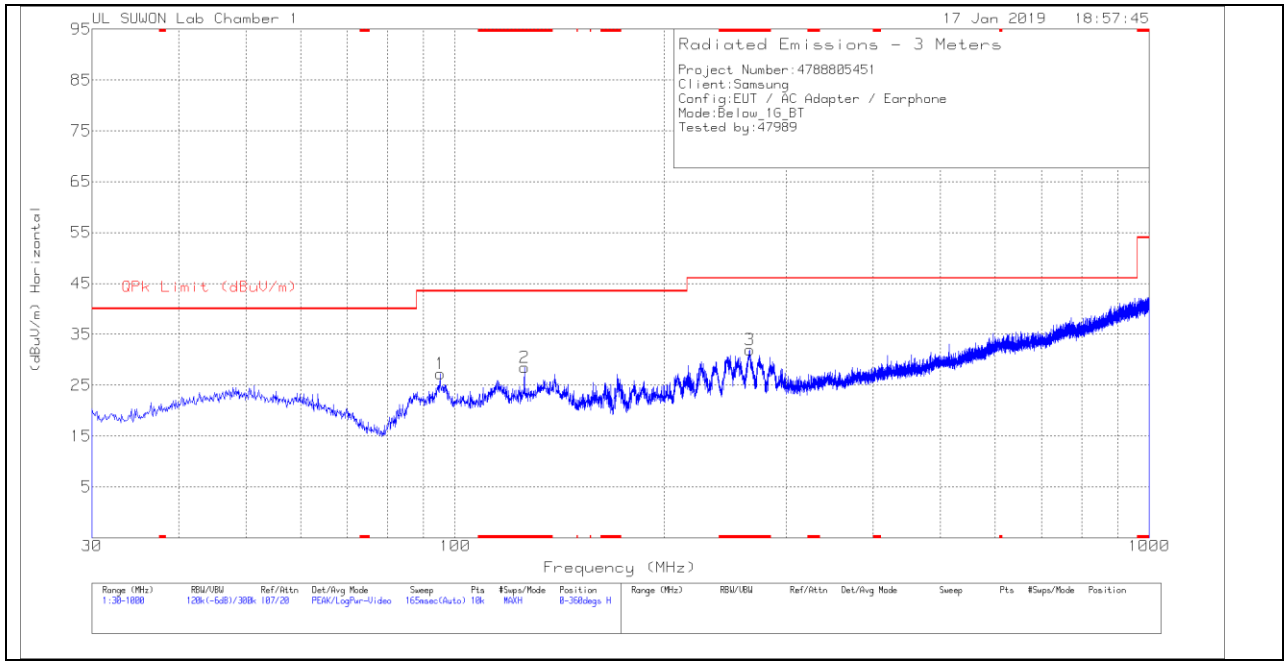
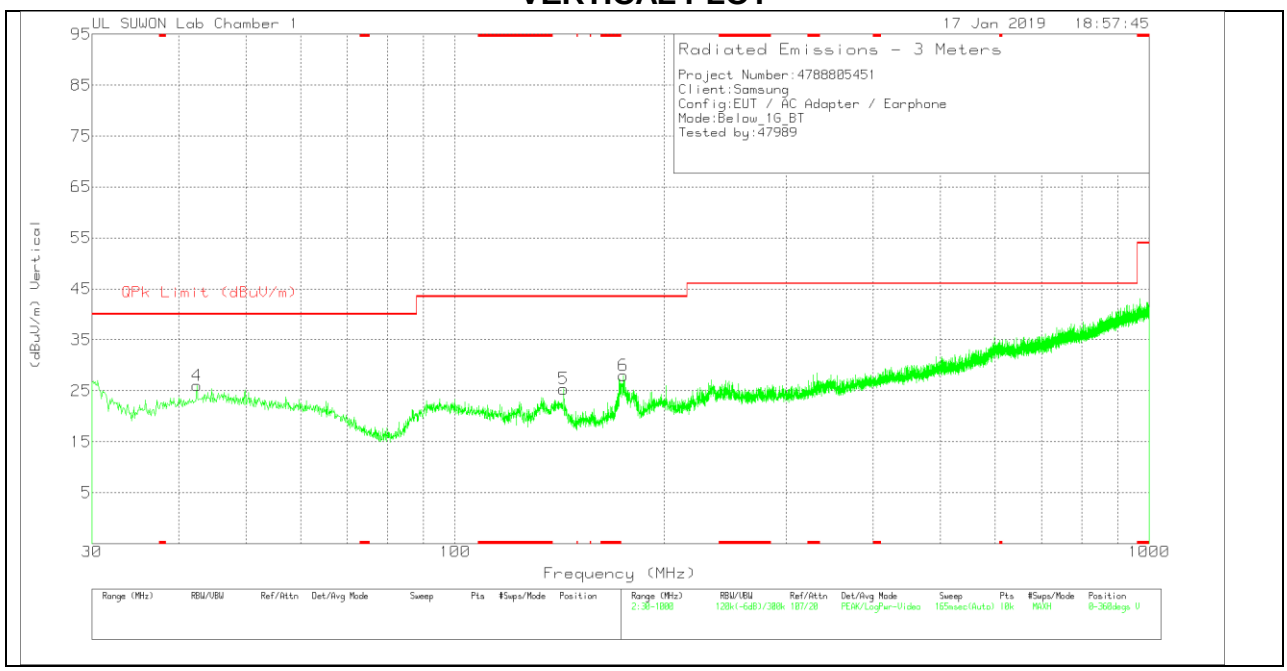
11.2. WORST-CASE BELOW 1 GHz

GFSK SPURIOUS EMISSIONS 30 TO 1000 MHz

HORIZONTAL PLOT



VERTICAL PLOT



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BELOW 1 GHz TABLE

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	95.184	39.69	Pk	17.3	-29.7	27.29	43.52	-16.23	0-360	300	H
2	* 125.933	43.04	Pk	14.7	-29.3	28.44	43.52	-15.08	0-360	400	H
3	* 265.613	41.2	Pk	18.6	-27.9	31.9	46.02	-14.12	0-360	100	H
4	42.513	37.47	Pk	19.2	-30.7	25.97	40	-14.03	0-360	100	V
5	143.4415	40.34	Pk	14.1	-29.1	25.34	43.52	-18.18	0-360	200	V
6	174.918	41.68	Pk	15.1	-28.8	27.98	43.52	-15.54	0-360	100	V

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

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12. 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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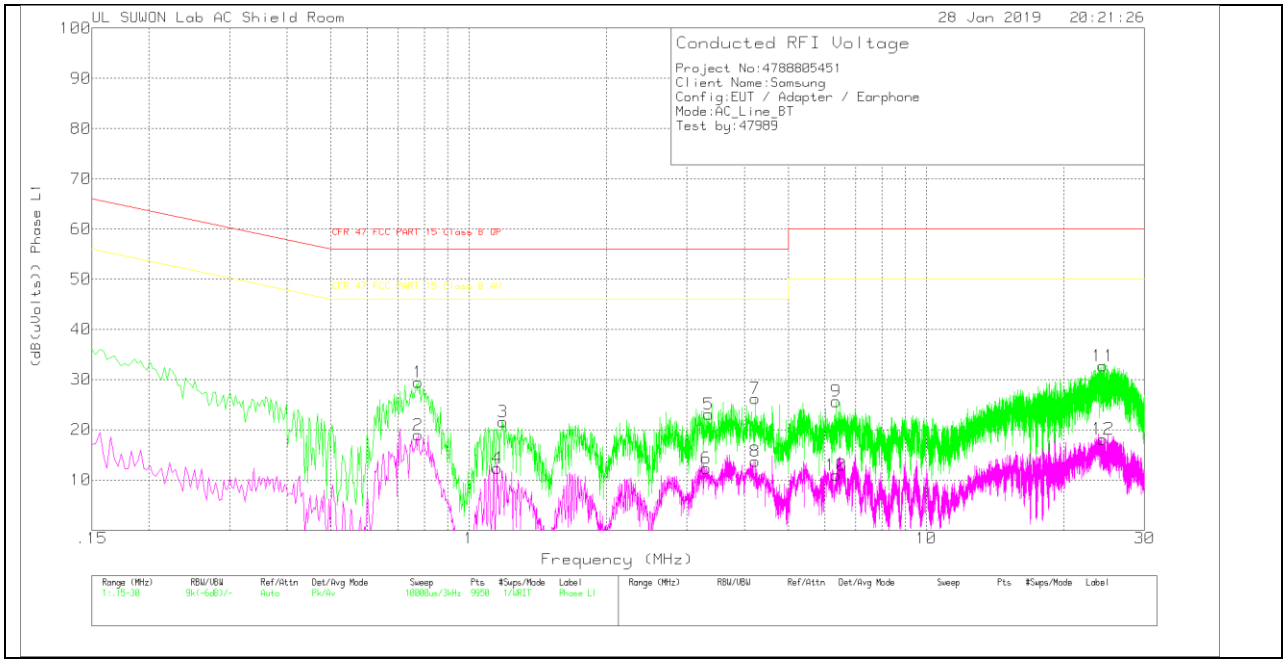
RESULTS

WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ENV216_101836_With ex-cord_L1	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.774	19.32	Pk	9.9	.2	29.42	56	-26.58	-	-
2	.774	8.91	Av	9.9	.2	19.01	-	-	46	-26.99
3	1.188	11.53	Pk	9.8	.3	21.63	56	-34.37	-	-
4	1.155	2.22	Av	9.8	.3	12.32	-	-	46	-33.68
5	3.348	12.89	Pk	9.9	.3	23.09	56	-32.91	-	-
6	3.3	2.1	Av	9.9	.3	12.3	-	-	46	-33.7
7	4.227	16.12	Pk	9.8	.3	26.22	56	-29.78	-	-
8	4.227	3.62	Av	9.8	.3	13.72	-	-	46	-32.28
9	6.348	15.46	Pk	9.9	.3	25.66	60	-34.34	-	-
10	6.357	.76	Av	9.9	.3	10.96	-	-	50	-39.04
11	24.36	21.74	Pk	10.6	.4	32.74	60	-27.26	-	-
12	24.36	7.15	Av	10.6	.4	18.15	-	-	50	-31.85

Pk - Peak detector
Av - Average detection

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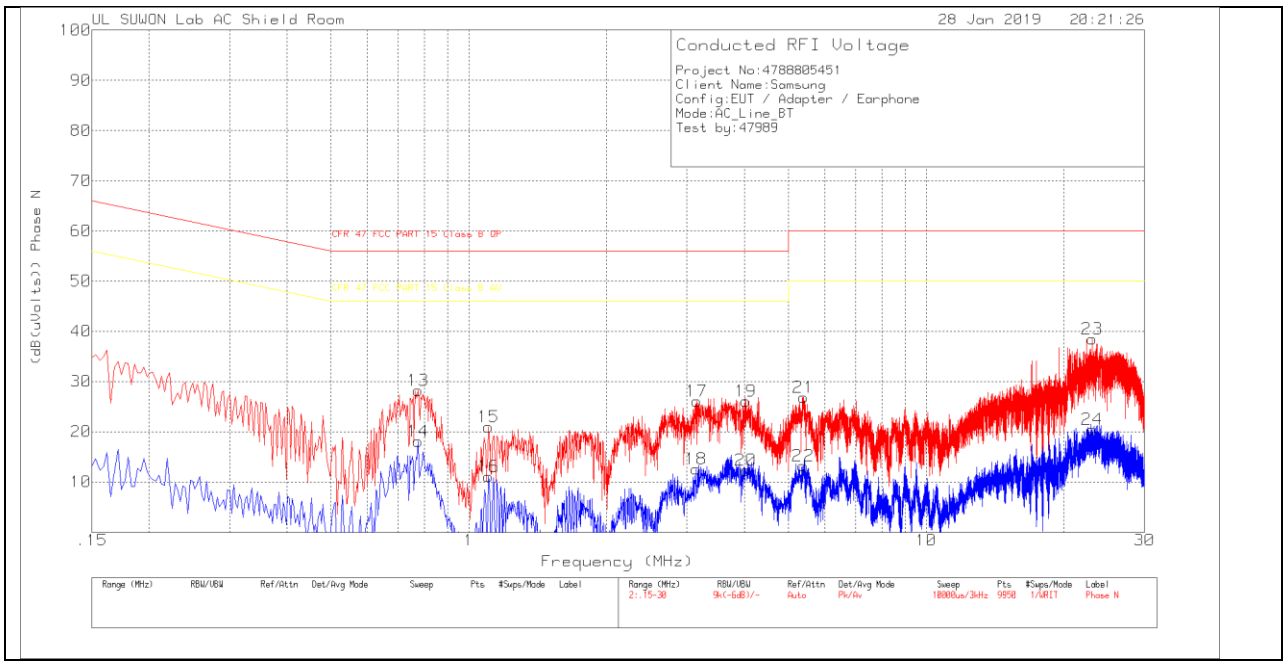
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ENV216_101836_With ex-cord_N	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.774	18.26	Pk	9.8	.2	28.26	56	-27.74	-	-
14	.774	8.04	Av	9.8	.2	18.04	-	-	46	-27.96
15	1.104	10.89	Pk	9.8	.3	20.99	56	-35.01	-	-
16	1.104	.95	Av	9.8	.3	11.05	-	-	46	-34.95
17	3.15	16.07	Pk	9.7	.3	26.07	56	-29.93	-	-
18	3.141	2.57	Av	9.7	.3	12.57	-	-	46	-33.43
19	4.035	16.03	Pk	9.8	.3	26.13	56	-29.87	-	-
20	4.035	2.24	Av	9.8	.3	12.34	-	-	46	-33.66
21	5.388	16.8	Pk	9.8	.3	26.9	60	-33.1	-	-
22	5.382	3.11	Av	9.8	.3	13.21	-	-	50	-36.79
23	23.028	27.46	Pk	10.6	.4	38.46	60	-21.54	-	-
24	23.052	9.51	Av	10.6	.4	20.51	-	-	50	-29.49

Pk - Peak detector

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