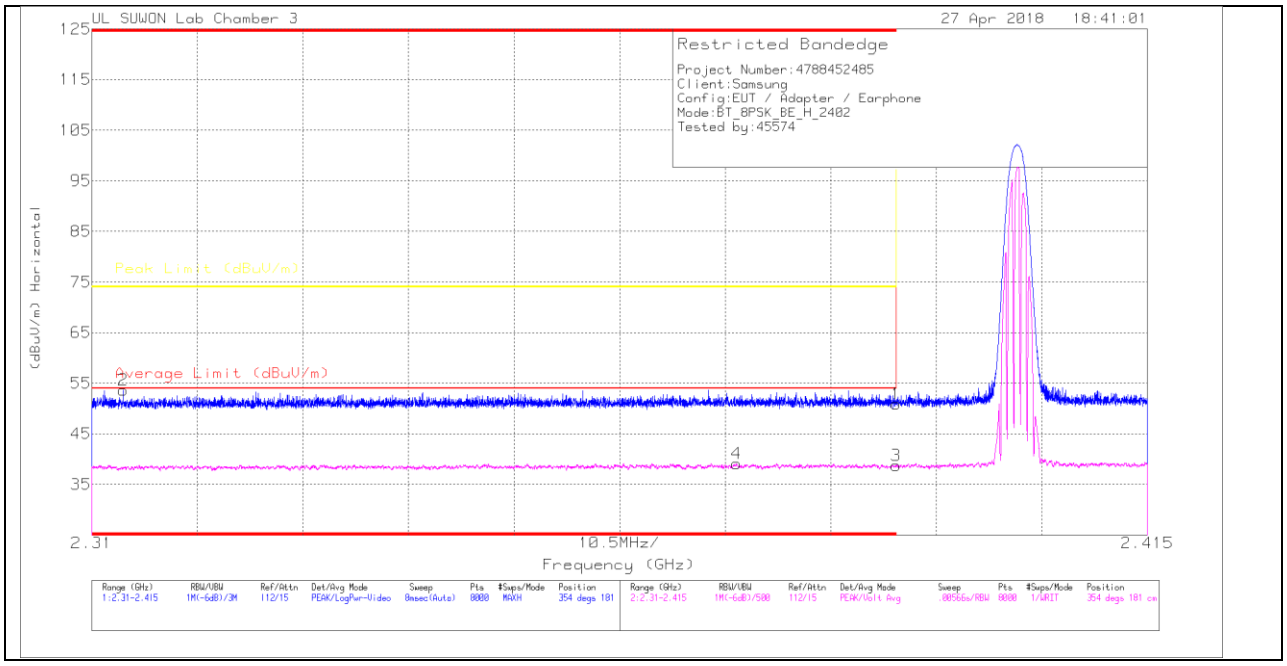
11.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.46	Pk	31.8	-23.3	50.96	-	-	74	-23.04	354	181	H
2	* 2.313	45.29	Pk	31.6	-23.2	53.69	-	-	74	-20.31	354	181	H
3	* 2.39	30.21	VA1T	31.8	-23.3	38.71	54	-15.29	-	-	354	181	H
4	* 2.374	30.66	VA1T	31.7	-23.2	39.16	54	-14.84	-	-	354	181	H

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

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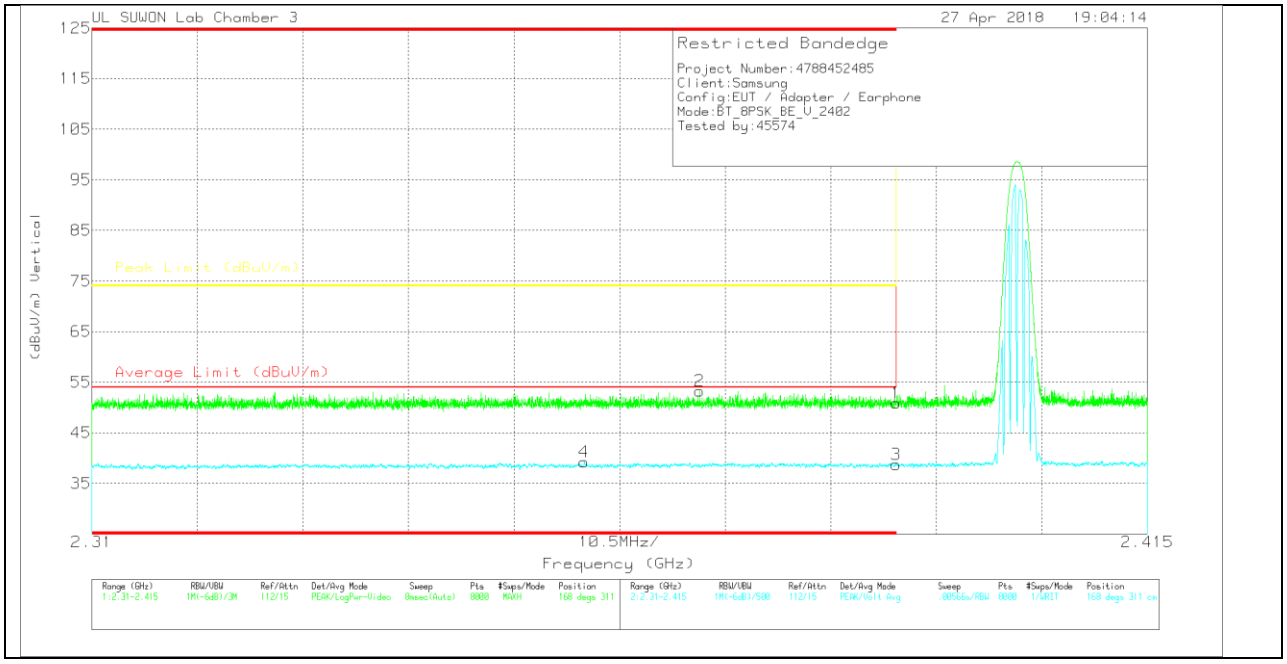
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.39	Pk	31.8	-23.3	50.89	-	-	74	-23.11	168	311	V
2	* 2.37	44.82	Pk	31.7	-23.3	53.22	-	-	74	-20.78	168	311	V
3	* 2.39	30.22	VA1T	31.8	-23.3	38.72	54	-15.28	-	-	168	311	V
4	* 2.359	30.72	VA1T	31.7	-23.2	39.22	54	-14.78	-	-	168	311	V

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

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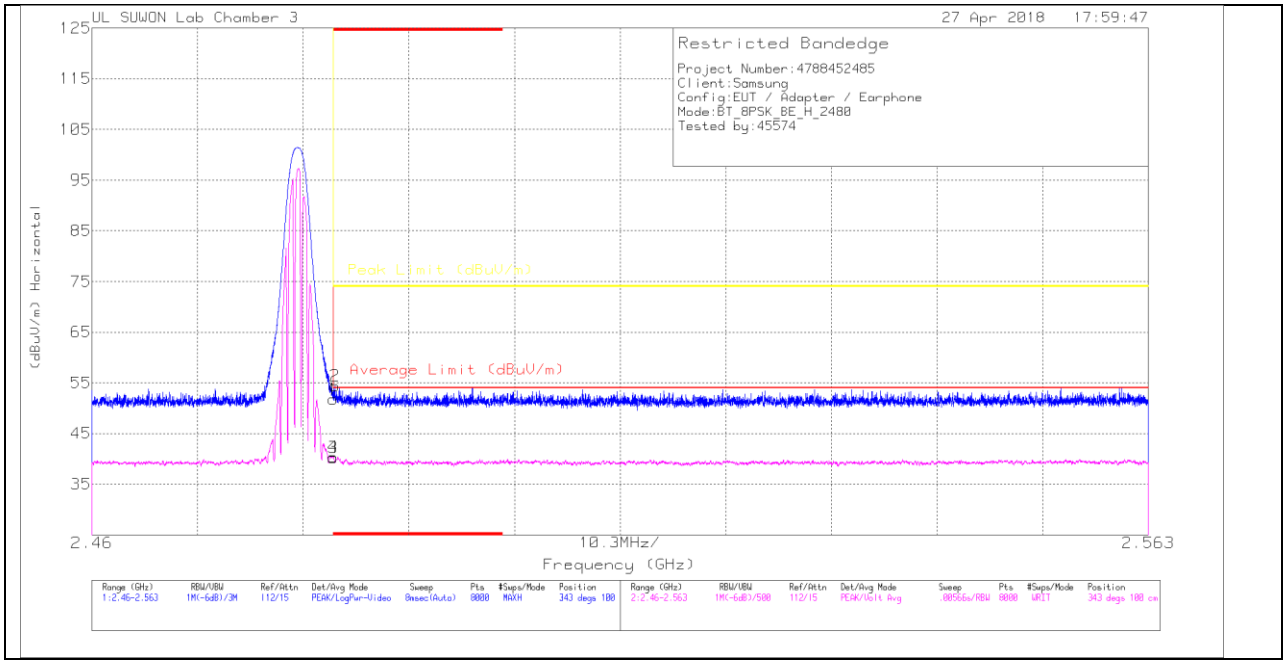
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.69	Pk	32.1	-23	51.79	-	-	74	-22.21	343	100	H
2	* 2.484	45.27	Pk	32.1	-23	54.37	-	-	74	-19.63	343	100	H
3	* 2.484	31.16	VA1T	32.1	-23	40.26	54	-13.74	-	-	343	100	H
4	* 2.484	31.25	VA1T	32.1	-23	40.35	54	-13.65	-	-	343	100	H

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

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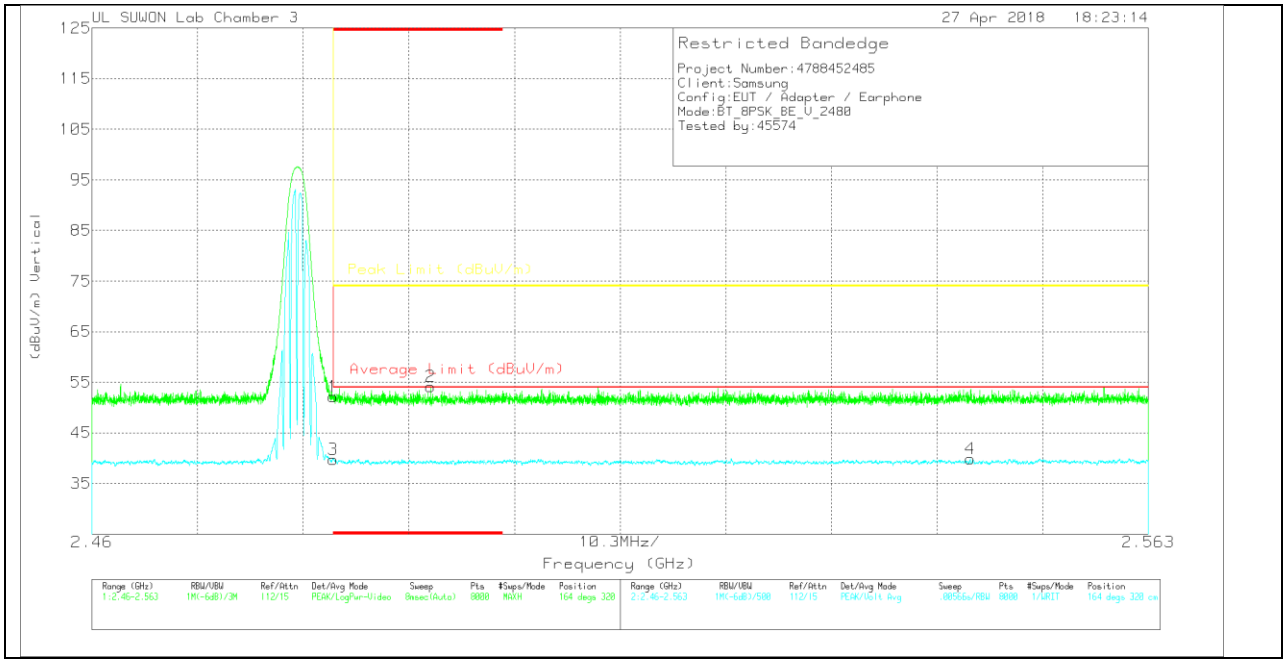
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[00205959]	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	43.04	Pk	32.1	-23	52.14	-	-	74	-21.86	164	320	V
2	* 2.493	45.16	Pk	32.1	-23.1	54.16	-	-	74	-19.84	164	320	V
3	* 2.484	30.66	VA1T	32.1	-23	39.76	54	-14.24	-	-	164	320	V
4	2.546	30.8	VA1T	32.1	-23	39.9	54	-14.1	-	-	164	320	V

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

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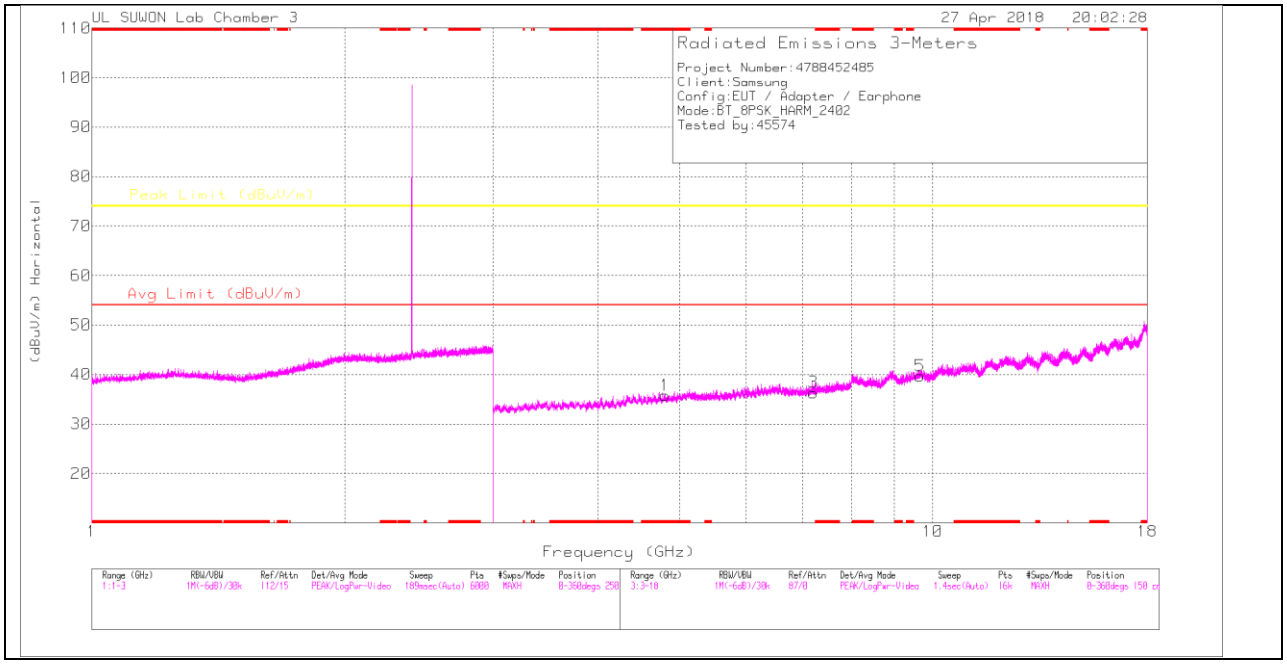
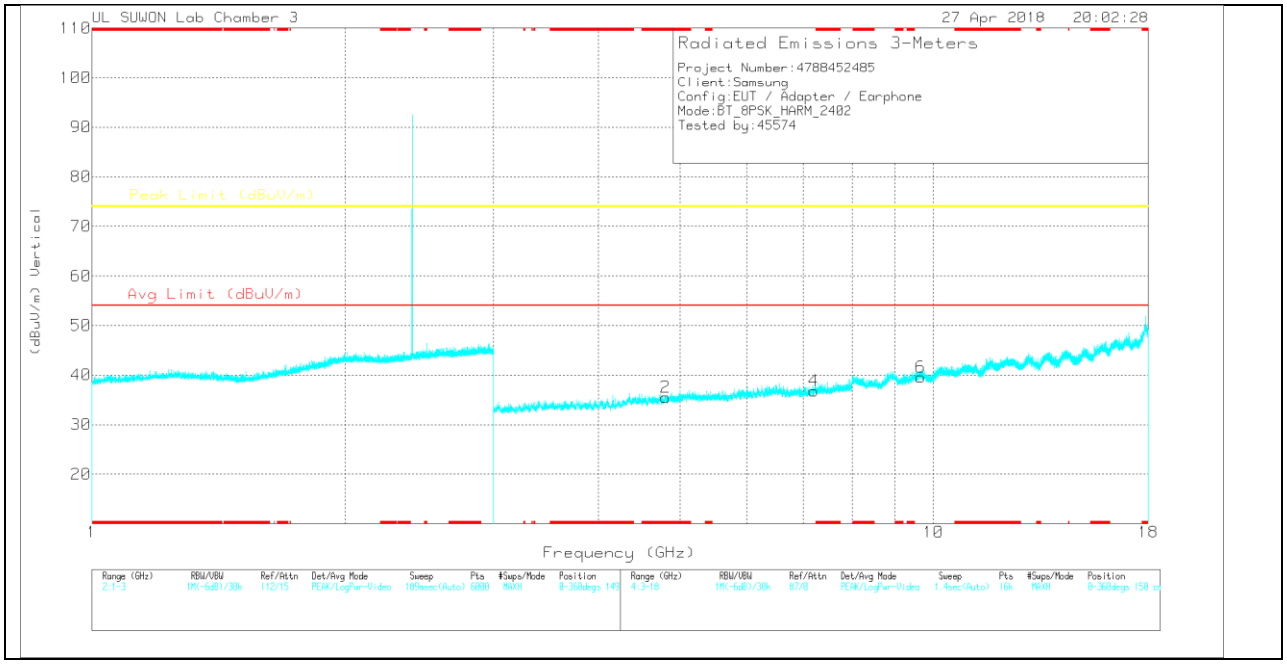
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL 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[00205959]	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	* 4.804	30.13	PK	33.9	-28.2	35.83	-	-	74	-38.17	0-360	150	H
3	7.206	24.65	PK	35.6	-23.9	36.35	-	-	74	-37.65	0-360	250	H
5	9.649	22.72	PK	36.7	-19.7	39.72	-	-	74	-34.28	0-360	150	H
2	* 4.804	29.81	PK	33.9	-28.2	35.51	-	-	74	-38.49	0-360	150	V
4	7.207	25.23	PK	35.6	-24	36.83	-	-	74	-37.17	0-360	150	V
6	9.649	22.53	PK	36.7	-19.7	39.53	-	-	74	-34.47	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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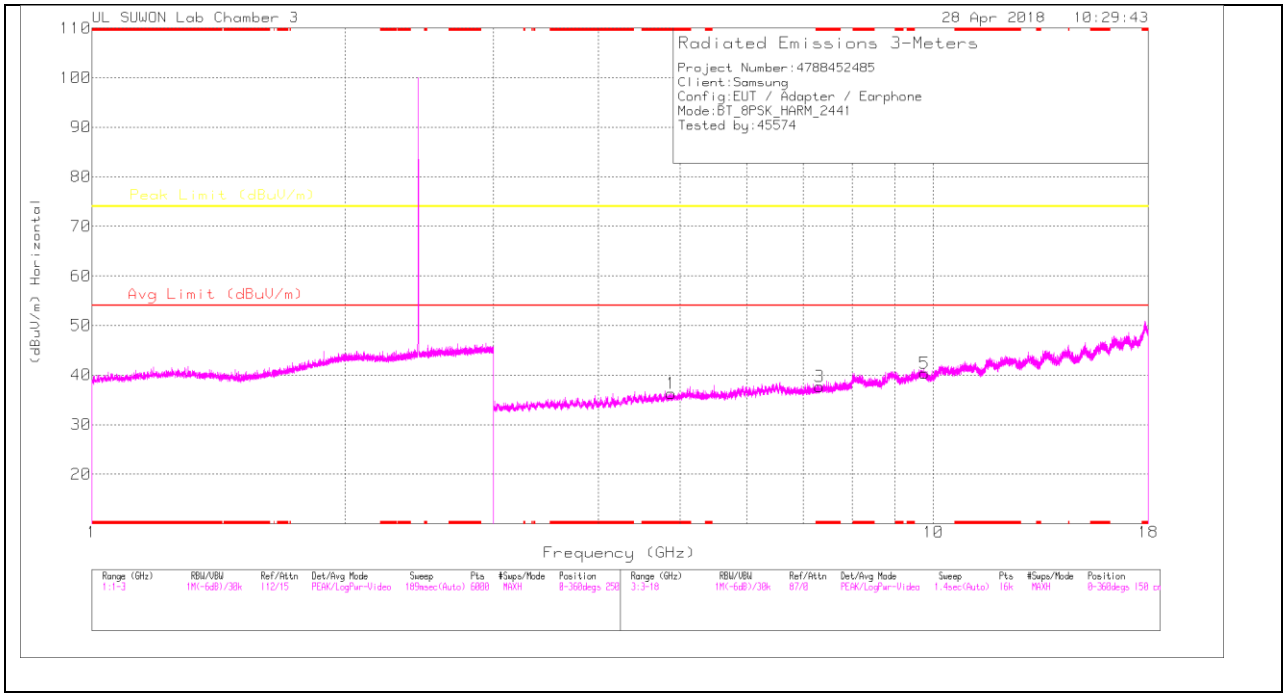
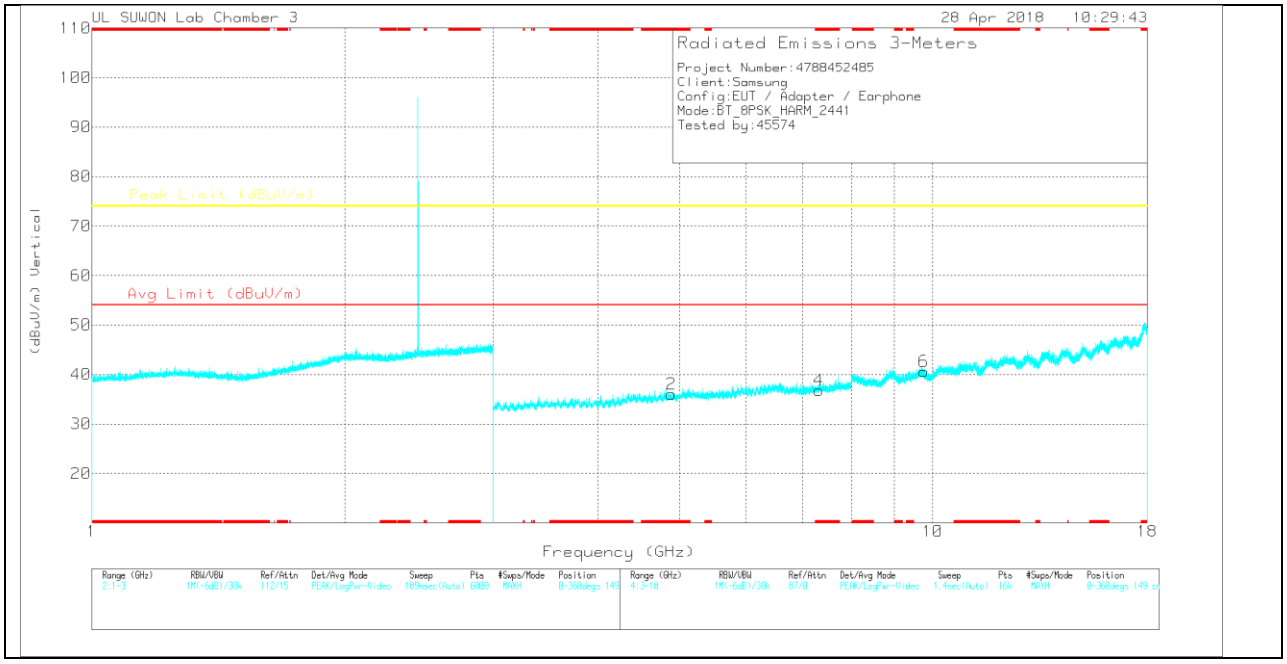
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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[00205959]	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	* 4.883	31.17	PK	34	-28.9	36.27	-	-	74	-37.73	0-360	250	H
3	* 7.323	25.49	PK	35.6	-23.4	37.69	-	-	74	-36.31	0-360	150	H
5	9.764	22.98	PK	36.9	-19.5	40.38	-	-	74	-33.62	0-360	150	H
2	* 4.884	30.9	PK	34	-28.9	36	-	-	74	-38	0-360	251	V
4	* 7.324	24.58	PK	35.6	-23.4	36.78	-	-	74	-37.22	0-360	149	V
6	9.763	23.15	PK	36.9	-19.5	40.55	-	-	74	-33.45	0-360	149	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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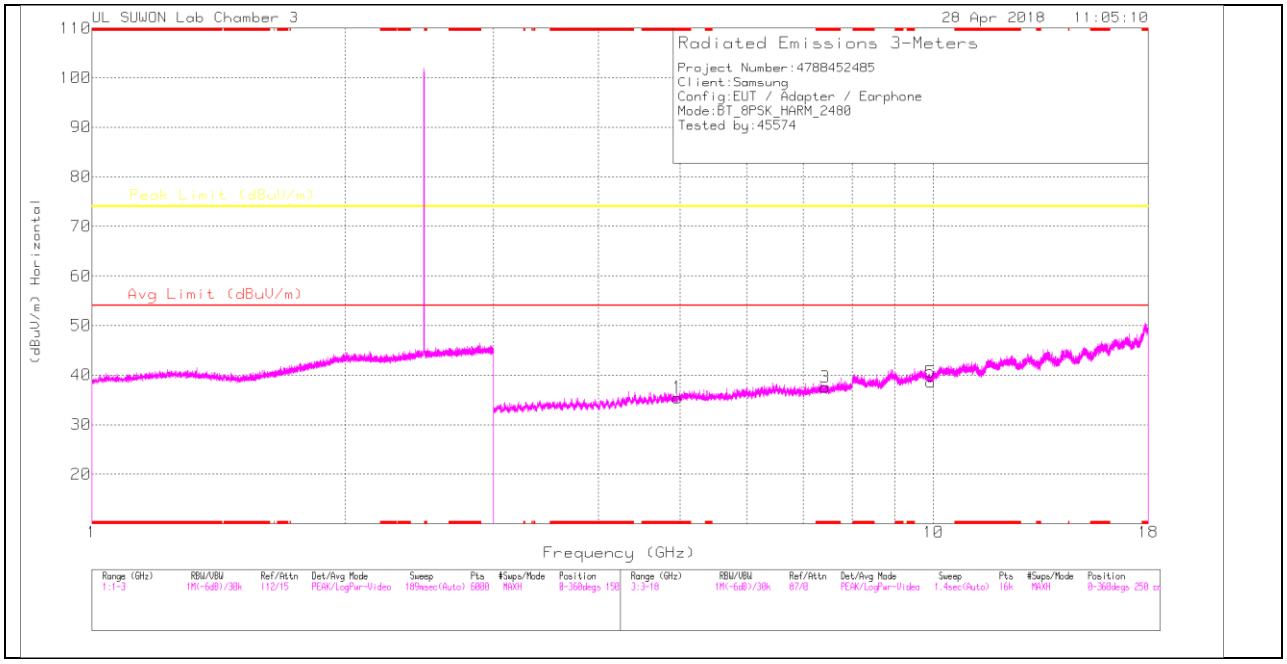
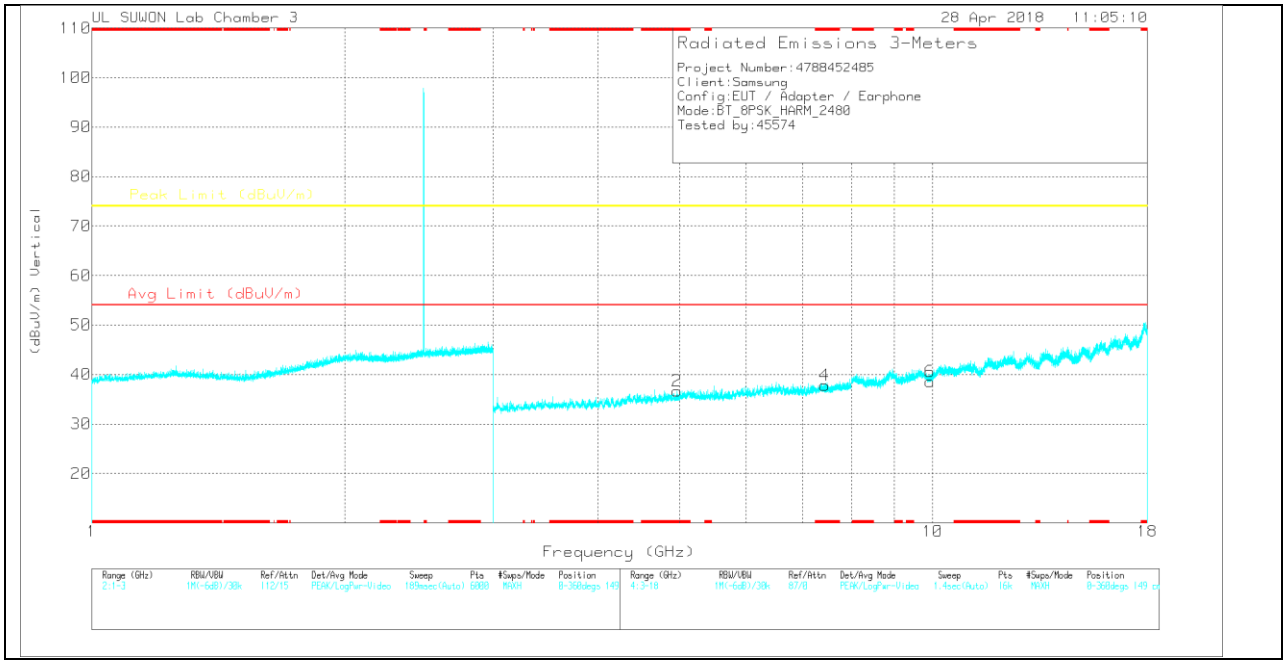
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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[00205959]	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	* 4.963	29.86	PK	34.1	-28.5	35.46	-	-	74	-38.54	0-360	150	H
3	* 7.44	25.2	PK	35.6	-23.2	37.6	-	-	74	-36.4	0-360	150	H
5	9.921	21.26	PK	37	-19.7	38.56	-	-	74	-35.44	0-360	250	H
2	* 4.962	31.02	PK	34.1	-28.5	36.62	-	-	74	-37.38	0-360	149	V
4	* 7.442	25.54	PK	35.6	-23.3	37.84	-	-	74	-36.16	0-360	250	V
6	9.921	21.3	PK	37	-19.7	38.6	-	-	74	-35.4	0-360	149	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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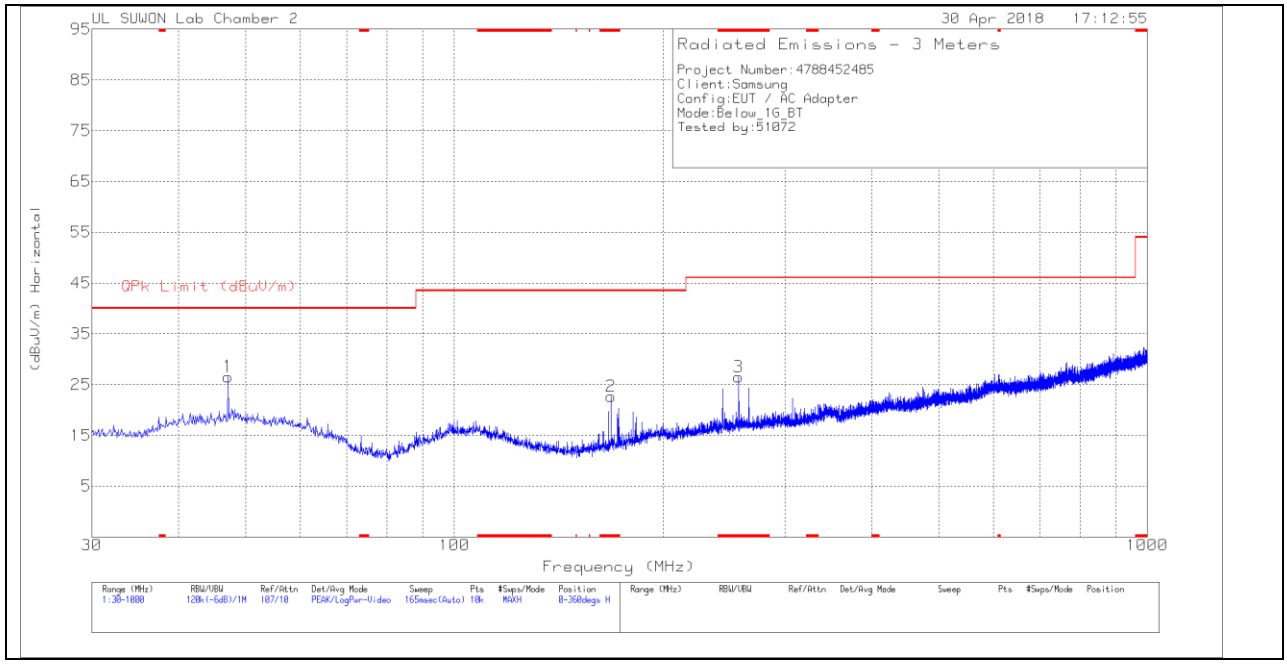
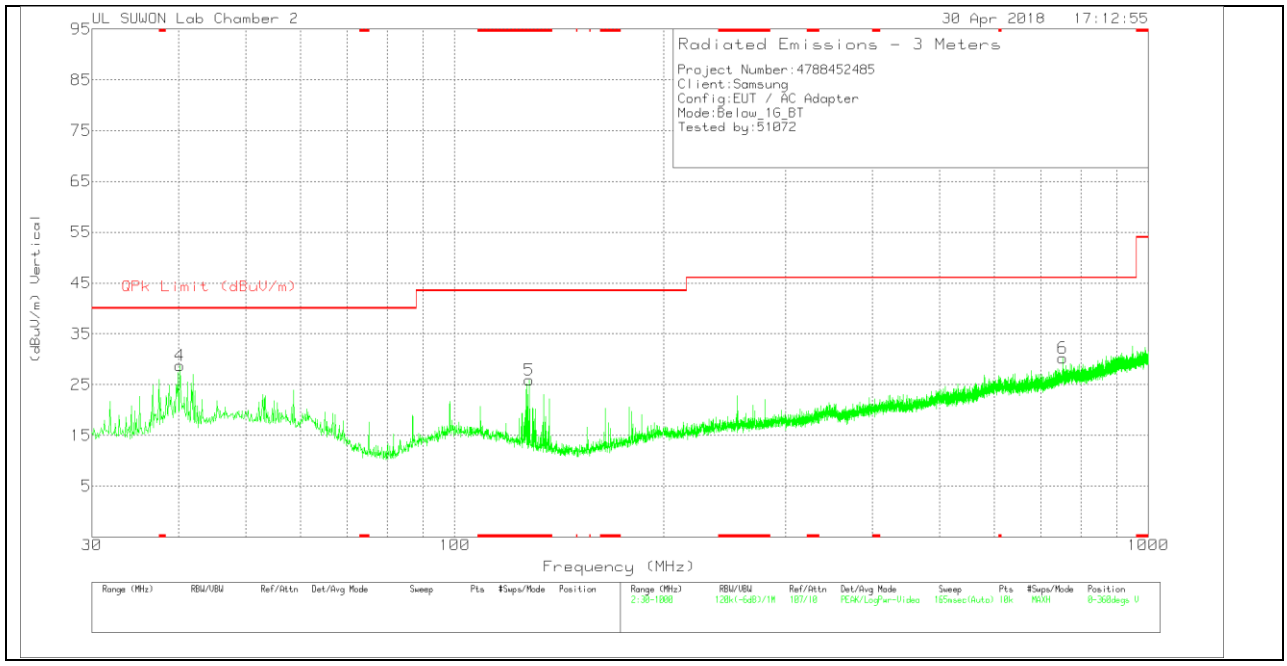
11.3. WORST-CASE BELOW 1 GHz

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	30-1000MHz[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.169	38.07	Pk	20	-31.5	26.57	40	-13.43	0-360	100	H
2	* 168.419	38.73	Pk	14.6	-30.7	22.63	43.52	-20.89	0-360	400	H
3	* 257.271	38.37	Pk	18.3	-30.2	26.47	46.02	-19.55	0-360	100	H
4	40.185	41.19	Pk	19	-31.5	28.69	40	-11.31	0-360	100	V
5	* 128.164	42.06	Pk	14.7	-30.9	25.86	43.52	-17.66	0-360	100	V
6	752.941	32.54	Pk	26.5	-28.8	30.24	46.02	-15.78	0-360	400	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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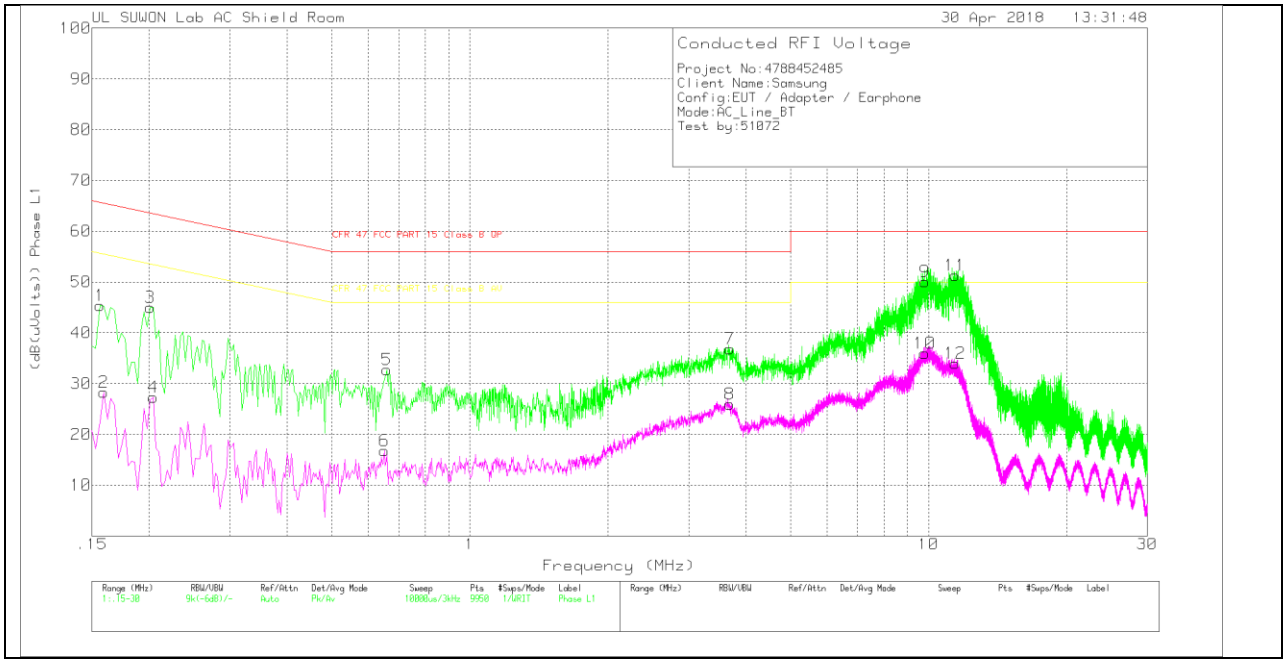
RESULTS

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	101837_L1_with extension	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	.156	35.3	Pk	10	.1	45.4	65.67	-20.27	-	-
2	.159	18.25	Av	10	.1	28.35	-	-	55.52	-27.17
3	.201	34.98	Pk	9.8	.2	44.98	63.57	-18.59	-	-
4	.204	17.32	Av	9.8	.2	27.32	-	-	53.45	-26.13
5	.66	22.75	Pk	9.8	.2	32.75	56	-23.25	-	-
6	.651	6.76	Av	9.8	.2	16.76	-	-	46	-29.24
7	3.687	26.76	Pk	9.8	.3	36.86	56	-19.14	-	-
8	3.687	15.9	Av	9.8	.3	26	-	-	46	-20
9	9.825	39.84	Pk	9.8	.4	50.04	60	-9.96	-	-
10	9.81	25.82	Av	9.8	.4	36.02	-	-	50	-13.98
11	11.415	41.2	Pk	9.8	.3	51.3	60	-8.7	-	-
12	11.424	23.91	Av	9.8	.3	34.01	-	-	50	-15.99

Pk - Peak detector
Av - Average detection

Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101837_L1_with extension	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)
.15675	30.76	Qp	10	.1	40.86	65.63	-24.77	-	-
.15975	32.42	Qp	10	.1	42.52	65.48	-22.96	-	-
.20025	32.4	Qp	9.8	.2	42.4	63.6	-21.2	-	-
.20325	32.21	Qp	9.8	.2	42.21	63.48	-21.27	-	-
.65925	19.35	Qp	9.8	.2	29.35	56	-26.65	-	-
.65175	18.93	Qp	9.8	.2	28.93	56	-27.07	-	-
3.68625	22.63	Qp	9.8	.3	32.73	56	-23.27	-	-
9.82575	35.33	Qp	9.8	.4	45.53	60	-14.47	-	-
9.81075	35.13	Qp	9.8	.4	45.33	60	-14.67	-	-
11.4152	35.8	Qp	9.8	.3	45.9	60	-14.1	-	-
11.4242	36.06	Qp	9.8	.3	46.16	60	-13.84	-	-

Qp - Quasi-Peak detector

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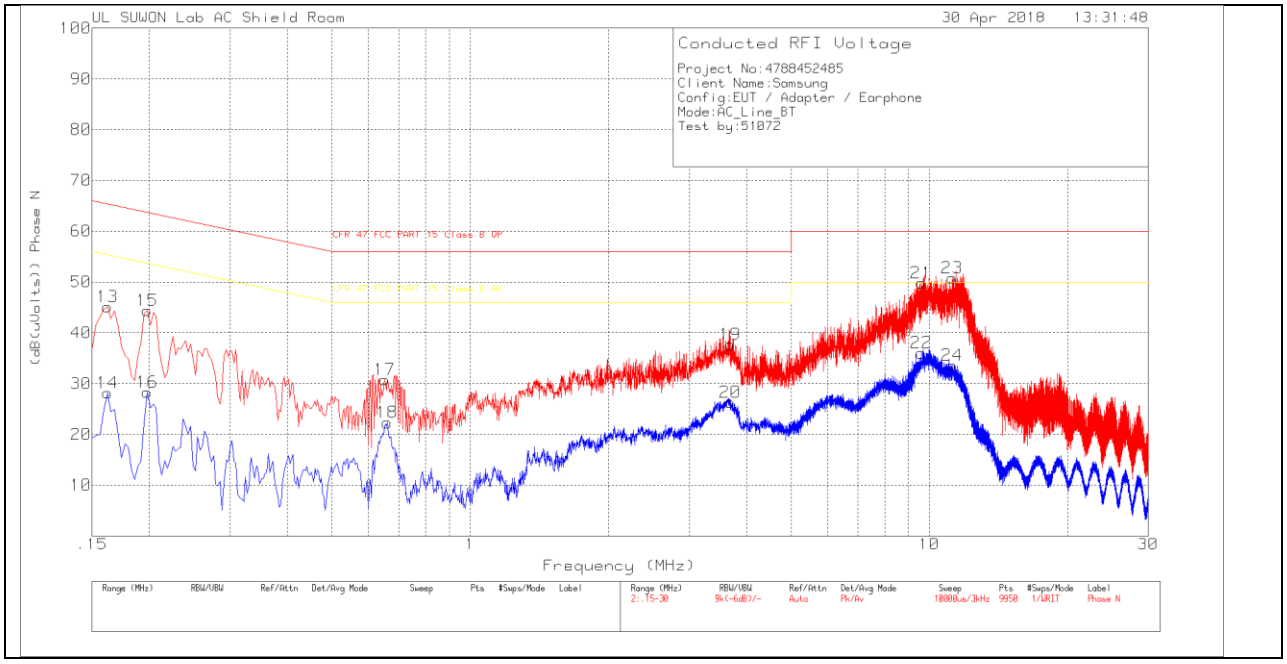
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_N_with extension	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	.162	35.06	Pk	10	.1	45.16	65.36	-20.2	-	-
14	.162	18.02	Av	10	.1	28.12	-	-	55.36	-27.24
15	.198	34.27	Pk	9.9	.2	44.37	63.69	-19.32	-	-
16	.198	18.21	Av	9.9	.2	28.31	-	-	53.69	-25.38
17	.651	20.78	Pk	9.8	.2	30.78	56	-25.22	-	-
18	.66	12.3	Av	9.8	.2	22.3	-	-	46	-23.7
19	3.69	27.59	Pk	9.8	.3	37.69	56	-18.31	-	-
20	3.69	16.16	Av	9.8	.3	26.26	-	-	46	-19.74
21	9.612	39.57	Pk	9.8	.4	49.77	60	-10.23	-	-
22	9.612	25.83	Av	9.8	.4	36.03	-	-	50	-13.97
23	11.226	40.68	Pk	9.8	.3	50.78	60	-9.22	-	-
24	11.223	23.52	Av	9.8	.3	33.62	-	-	50	-16.38

Pk - Peak detector
Av - Average detection

Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101837_N_with extension	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)
.16215	32.13	Qp	10	.1	42.23	65.35	-23.12	-	-
.19815	31.69	Qp	9.9	.2	41.79	63.69	-21.9	-	-
.65175	18	Qp	9.8	.2	28	56	-28	-	-
.65925	18.28	Qp	9.8	.2	28.28	56	-27.72	-	-
3.68925	22.89	Qp	9.8	.3	32.99	56	-23.01	-	-
9.61125	33.43	Qp	9.8	.4	43.63	60	-16.37	-	-
11.2268	33.59	Qp	9.8	.3	43.69	60	-16.31	-	-
11.2223	33.77	Qp	9.8	.3	43.87	60	-16.13	-	-

Qp - Quasi-Peak detector

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