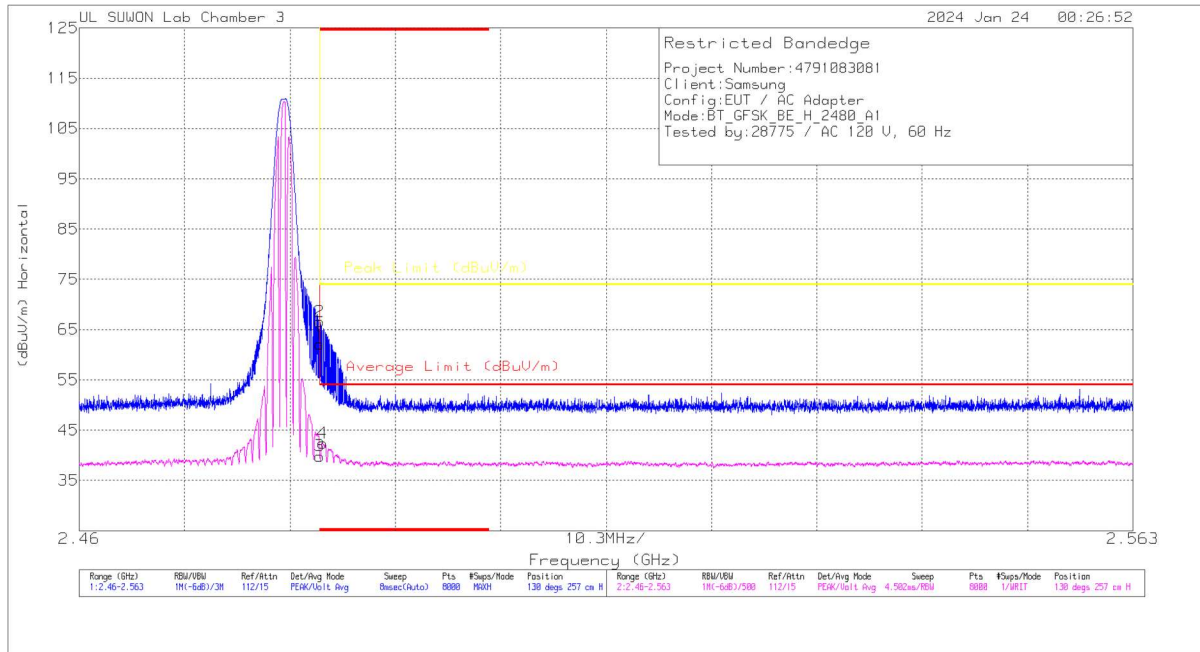


BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT

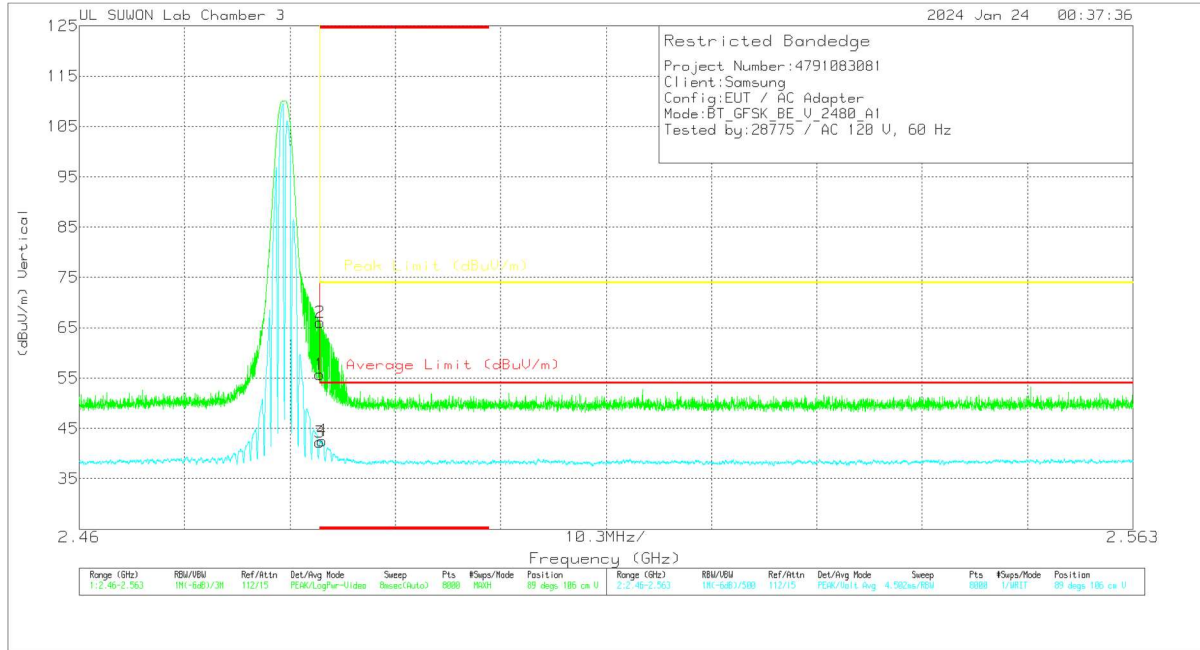


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dBm)	Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	54.5	Pk	32.4	-24.8	62.1	-	-	74	-11.9	130	257	H
2	* 2.48351	59.02	Pk	32.4	-24.8	66.62	-	-	74	-7.38	130	257	H
3	* 2.4835	32.25	VA1T	32.4	-24.8	39.85	54	-14.15	-	-	130	257	H
4	* 2.48378	34.78	VA1T	32.4	-24.8	42.38	54	-11.62	-	-	130	257	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

VERTICAL RESULT



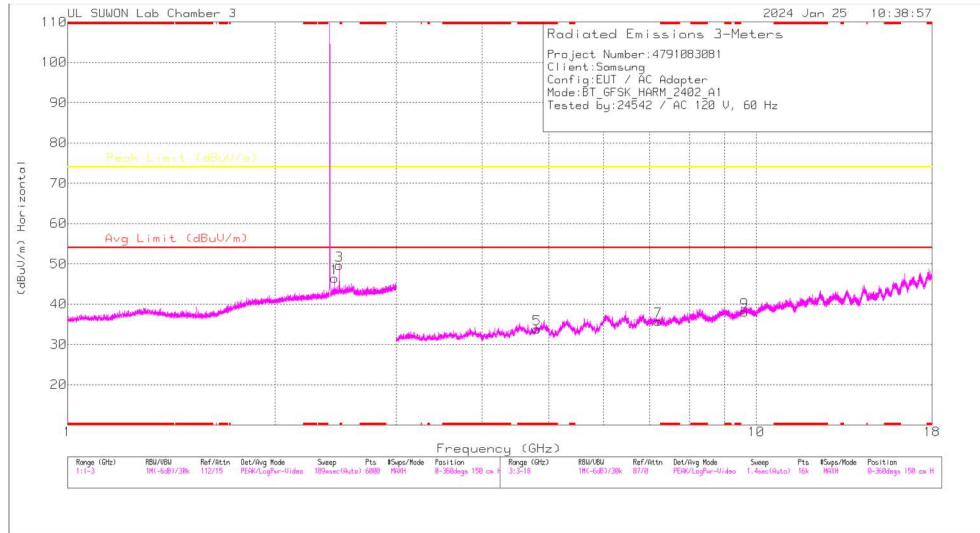
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	48.1	Pk	32.4	-24.8	55.7	-	-	74	-18.3	89	106	V
2	* 2.48358	58.44	Pk	32.4	-24.8	66.04	-	-	74	-7.96	89	106	V
3	* 2.4835	34.63	VA1T	32.4	-24.8	42.23	54	-11.77	-	-	89	106	V
4	* 2.48372	34.99	VA1T	32.4	-24.8	42.59	54	-11.41	-	-	89	106	V

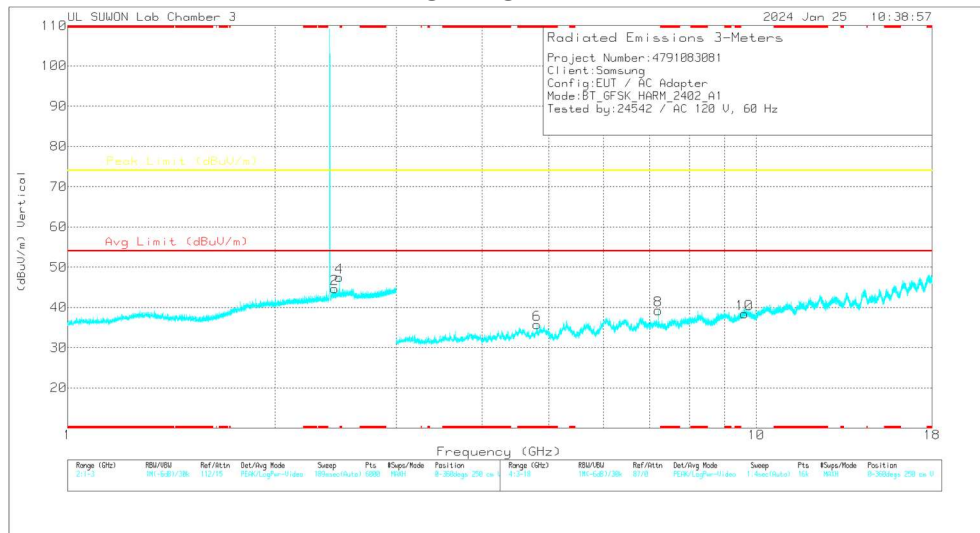
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



VERTICAL

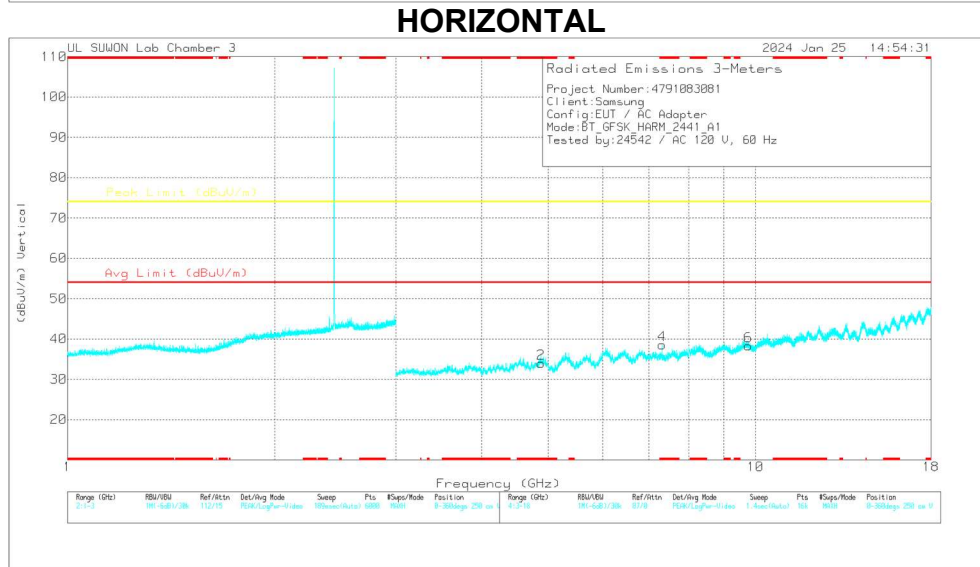
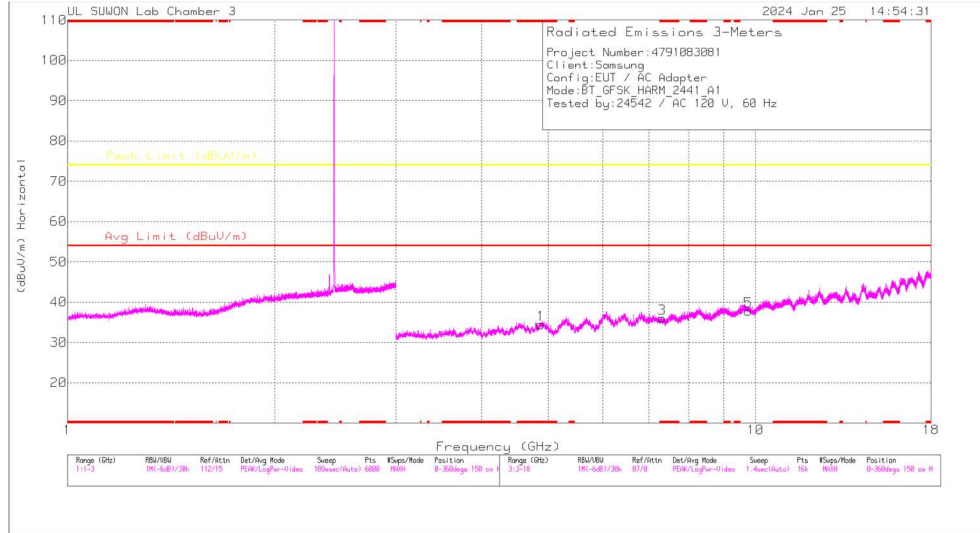
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor(dBm)	Loss(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80077	38.1	PKFH	34.3	-30.1	42.3	-	-	74	-31.7	119	123	H
* 4.80463	25.89	VA1T	34.3	-30.1	30.09	54	-23.91	-	-	119	123	H
* 4.804	39.02	PKFH	34.3	-30.1	43.22	-	-	74	-30.78	10	394	V
* 4.80397	29.03	VA1T	34.3	-30.1	33.23	54	-20.77	-	-	10	394	V
7.20632	35.16	PKFH	35.8	-25.9	45.06	-	-	74	-28.94	208	103	H
7.20587	36.26	PKFH	35.8	-25.9	46.16	-	-	74	-27.84	161	255	V
9.60789	30.89	PKFH	36.7	-21.7	45.89	-	-	74	-28.11	0	100	H
9.60547	31.52	PKFH	36.7	-21.8	46.42	-	-	74	-27.58	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
 Mkr1 and 2, 3, 4 in above pre-scan graph were confirmed as in-band emissions.

39 CHANNEL RESULTS



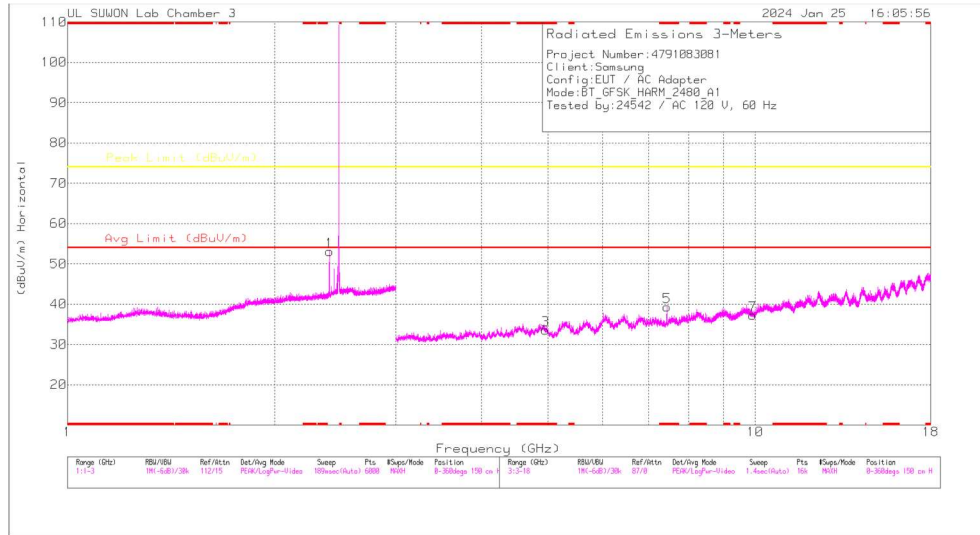
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

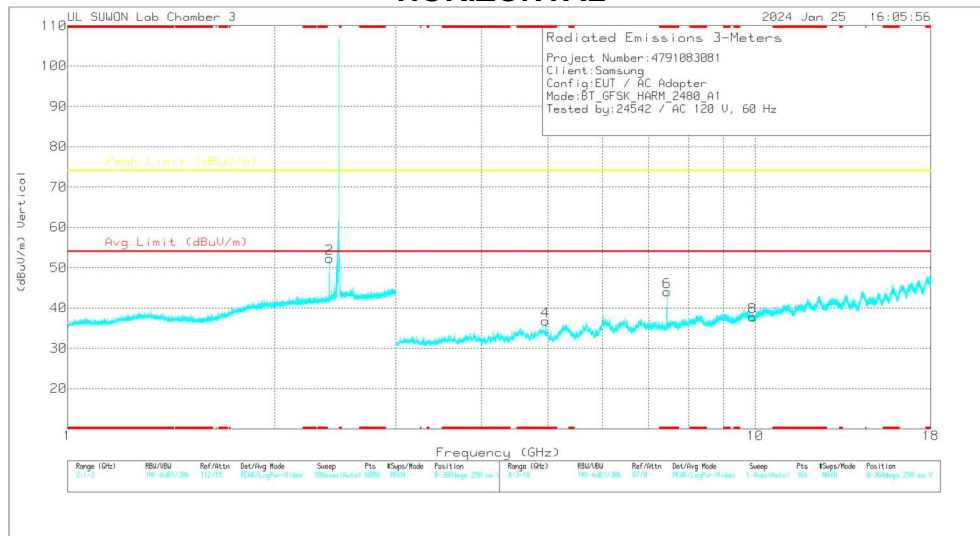
Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor(dB/m)	Loss(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.87881	39	PKFH	34.2	-29.9	43.3	-	-	74	-30.7	114	144	H
* 4.88229	25.68	VA1T	34.2	-30	29.88	54	-24.12	-	-	114	144	H
* 4.88181	38.95	PKFH	34.2	-30	43.15	-	-	74	-30.85	11	380	V
* 4.88184	28.1	VA1T	34.2	-30	32.3	54	-21.7	-	-	11	380	V
* 7.32329	34.02	PKFH	35.8	-25.5	44.32	-	-	74	-29.68	209	103	H
* 7.3234	22.21	VA1T	35.8	-25.5	32.51	54	-21.49	-	-	209	103	H
* 7.32336	34.77	PKFH	35.8	-25.5	45.07	-	-	74	-28.93	161	271	V
* 7.32303	24.93	VA1T	35.8	-25.5	35.23	54	-18.77	-	-	161	271	V
9.76173	30.89	PKFH	36.9	-21.5	46.29	-	-	74	-27.71	0	100	H
9.75954	31.08	PKFH	36.9	-21.5	46.48	-	-	74	-27.52	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

78 CHANNEL RESULTS



HORIZONTAL



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.

Radiated Emissions

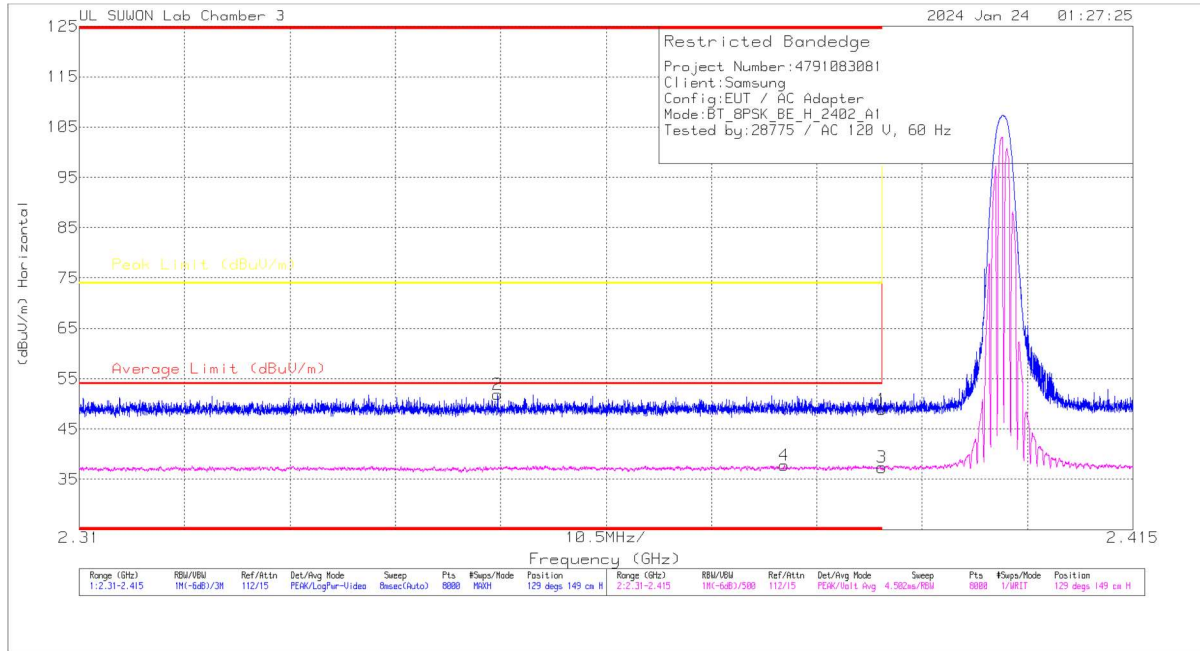
Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.96483	37.36	PKFH	34.3	-30.1	41.56	-	-	74	-32.44	307	375	H
* 4.95997	25.54	VA1T	34.3	-30	29.84	54	-24.16	-	-	307	375	H
* 4.9604	38.96	PKFH	34.3	-30	43.26	-	-	74	-30.74	14	129	V
* 4.95993	30.21	VA1T	34.3	-30	34.51	54	-19.49	-	-	14	129	V
* 7.43953	35.37	PKFH	35.7	-25.2	45.87	-	-	74	-28.13	222	242	H
* 7.43998	25.48	VA1T	35.7	-25.2	35.98	54	-18.02	-	-	222	242	H
* 7.44032	39.19	PKFH	35.7	-25.2	49.69	-	-	74	-24.31	152	349	V
* 7.44013	30.63	VA1T	35.7	-25.2	41.13	54	-12.87	-	-	152	349	V
9.91539	30.76	PKFH	37.1	-21.4	46.46	-	-	74	-27.54	0	100	H
9.91924	30.39	PKFH	37.1	-21.4	46.09	-	-	74	-27.91	182	296	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration.
 Mkr1 and 2 in above pre-scan graph were confirmed as in-band emissions.

10.1.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

ANT1
 BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT

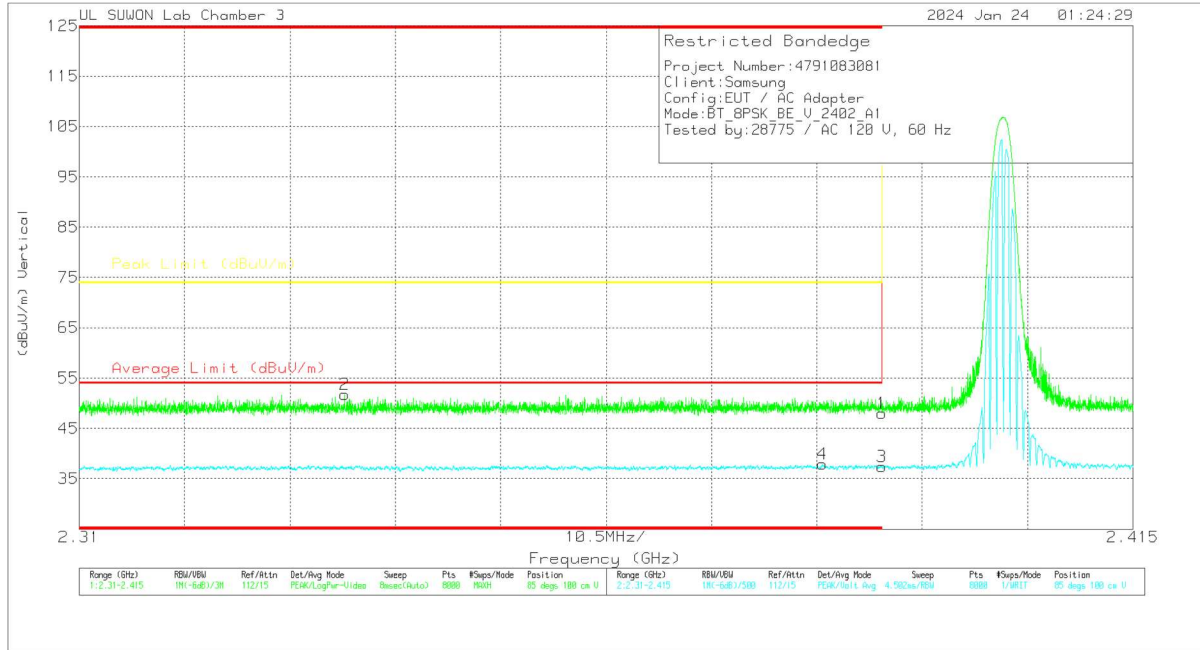


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (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	41.61	Pk	32.1	-24.8	48.91	-	-	74	-25.09	129	149	H
2	* 2.35169	44.62	Pk	32	-24.8	51.82	-	-	74	-22.18	129	149	H
3	* 2.39	30.06	VA1T	32.1	-24.8	37.36	54	-16.64	-	-	129	149	H
4	* 2.38027	30.57	VA1T	32.1	-24.9	37.77	54	-16.23	-	-	129	149	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

VERTICAL RESULT



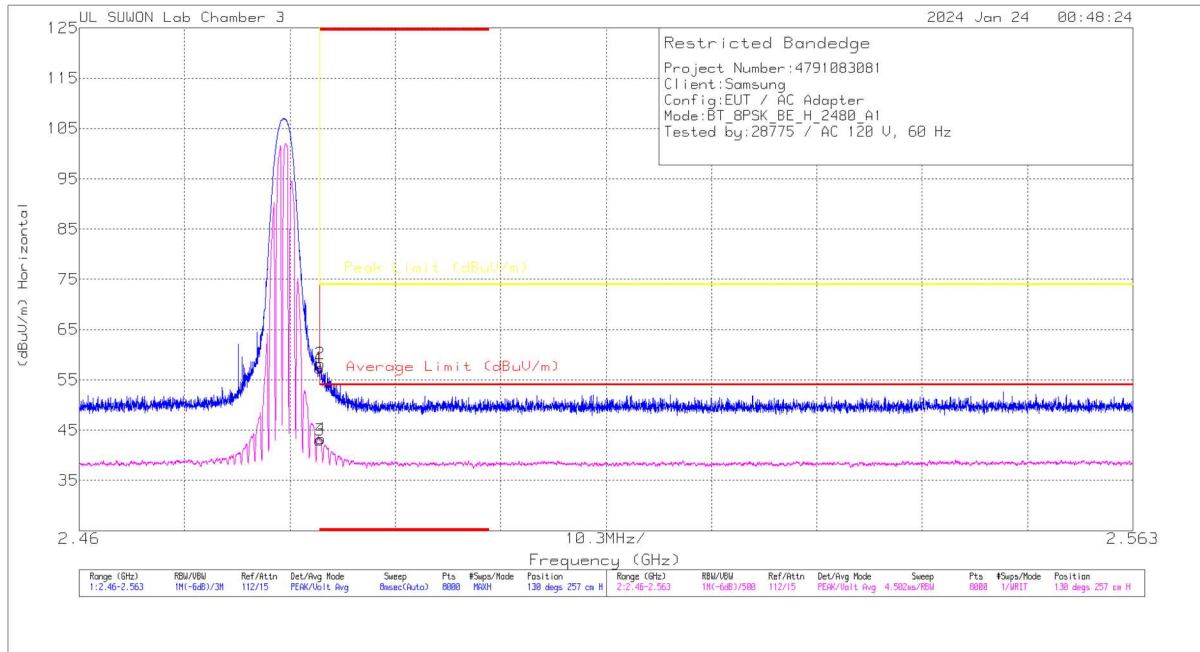
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (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	40.73	Pk	32.1	-24.8	48.03	-	-	74	-25.97	85	100	V
2	* 2.33644	44.78	Pk	31.9	-24.9	51.78	-	-	74	-22.22	85	100	V
3	* 2.39	30.09	VA1T	32.1	-24.8	37.39	54	-16.61	-	-	85	100	V
4	* 2.38406	30.68	VA1T	32.1	-24.9	37.88	54	-16.12	-	-	85	100	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

BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT

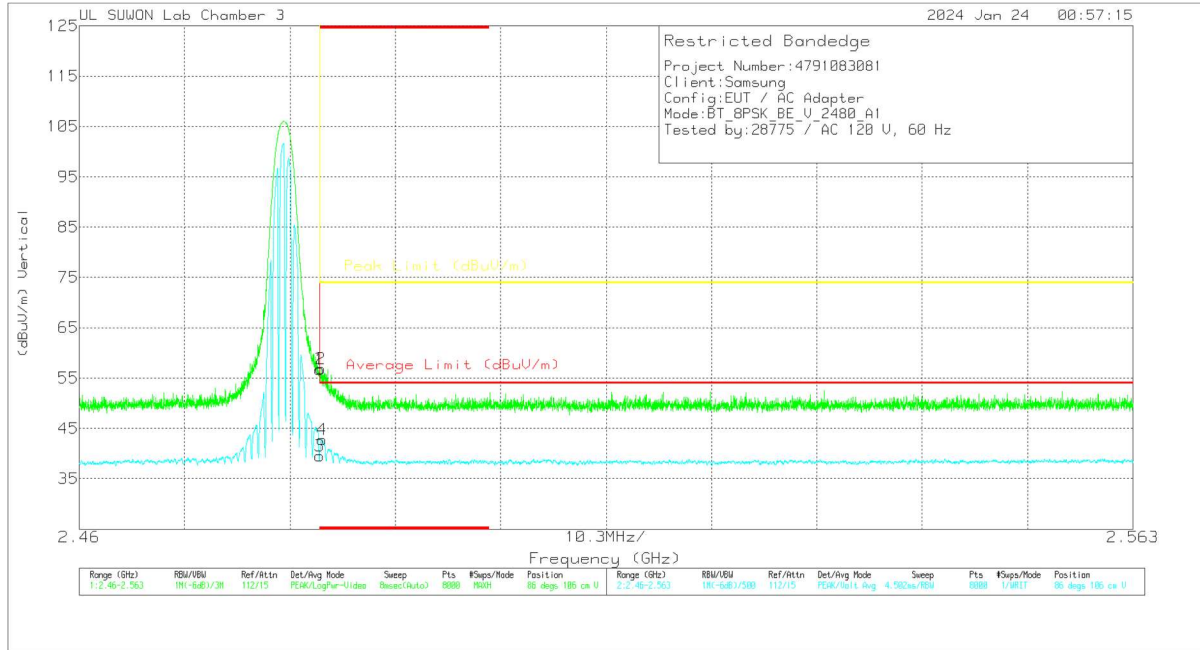


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	49.8	Pk	32.4	-24.8	57.4	-	-	74	-16.6	130	257	H
2	* 2.48358	50.68	Pk	32.4	-24.8	58.28	-	-	74	-15.72	130	257	H
3	* 2.4835	35.48	VA1T	32.4	-24.8	43.08	54	-10.92	-	-	130	257	H
4	* 2.48364	35.7	VA1T	32.4	-24.8	43.3	54	-10.7	-	-	130	257	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

VERTICAL RESULT



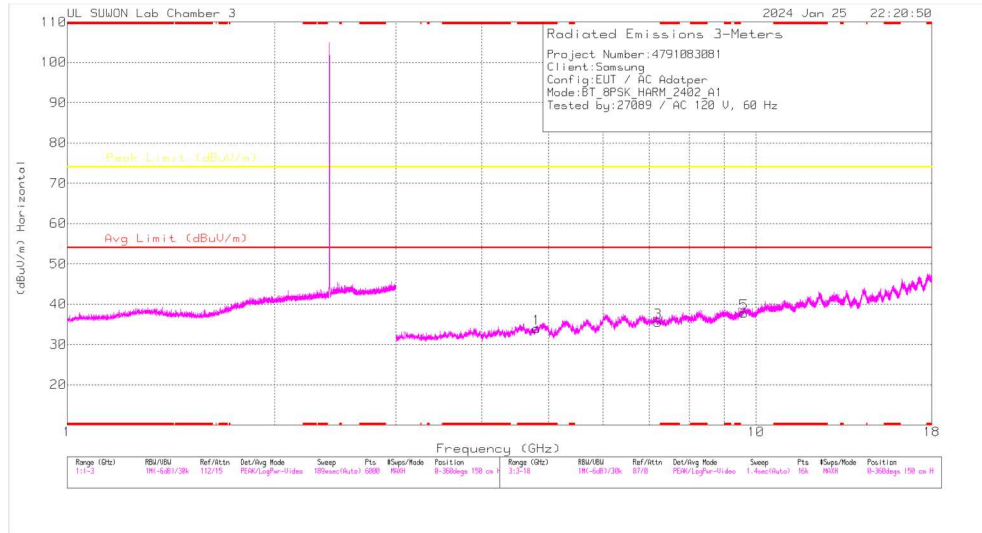
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor(dB/m)	Loss(dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	49.09	Pk	32.4	-24.8	56.69	-	-	74	-17.31	86	106	V
2	* 2.48364	49.31	Pk	32.4	-24.8	56.91	-	-	74	-17.09	86	106	V
3	* 2.4835	31.9	VA1T	32.4	-24.8	39.5	54	-14.5	-	-	86	106	V
4	* 2.48375	35.18	VA1T	32.4	-24.8	42.78	54	-11.22	-	-	86	106	V

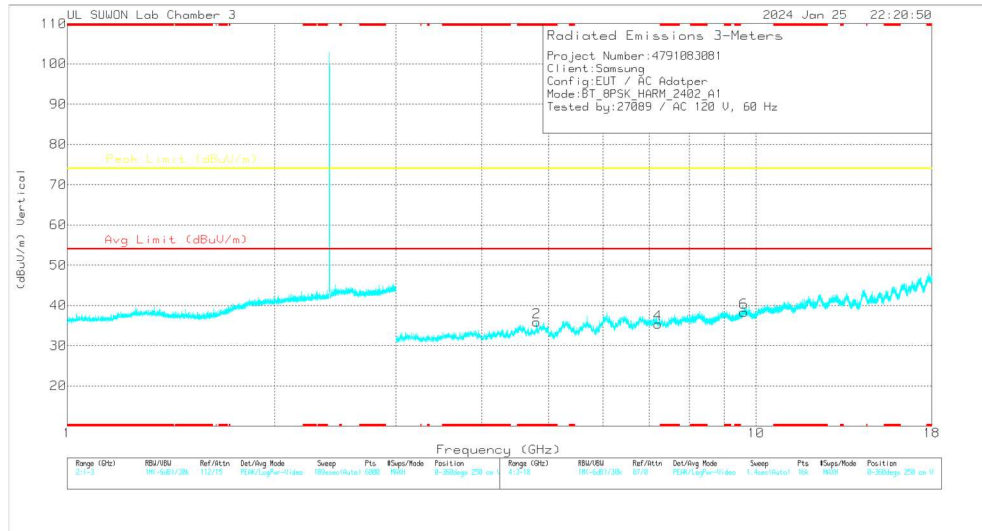
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



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.

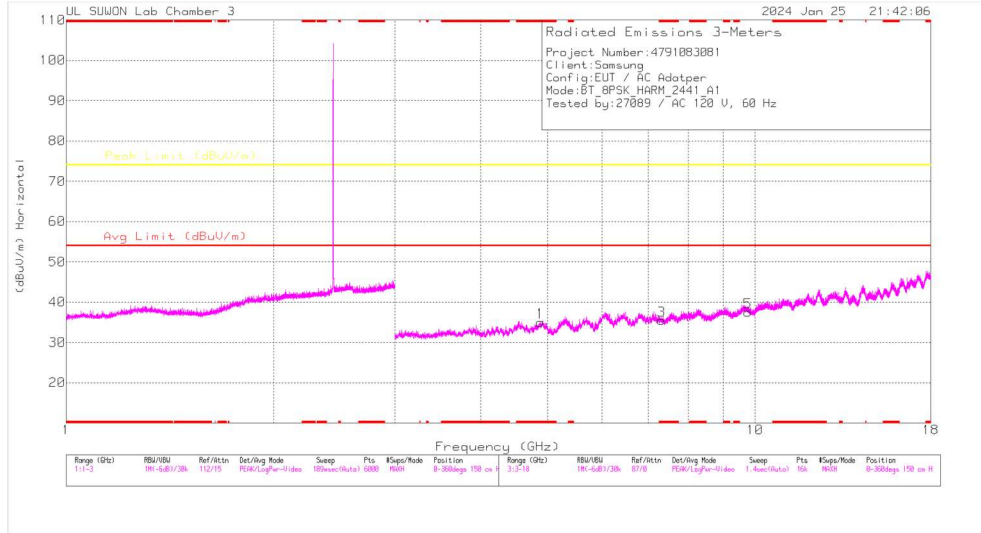
Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor(dB/m)	Loss(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.80386	29.8	PK	34.3	-30.1	34	-	-	74	-40	0-360	150	H
3	7.20589	25.57	PK	35.8	-25.9	35.47	-	-	74	-38.53	0-360	150	H
5	9.60792	22.8	PK	36.7	-21.7	37.8	-	-	74	-36.2	0-360	150	H
2	* 4.80105	31.63	PK	34.3	-30.1	35.83	-	-	74	-38.17	0-360	250	V
4	7.20589	25.51	PK	35.8	-25.9	35.41	-	-	74	-38.59	0-360	250	V
6	9.60792	23.25	PK	36.7	-21.7	38.25	-	-	74	-35.75	0-360	250	V

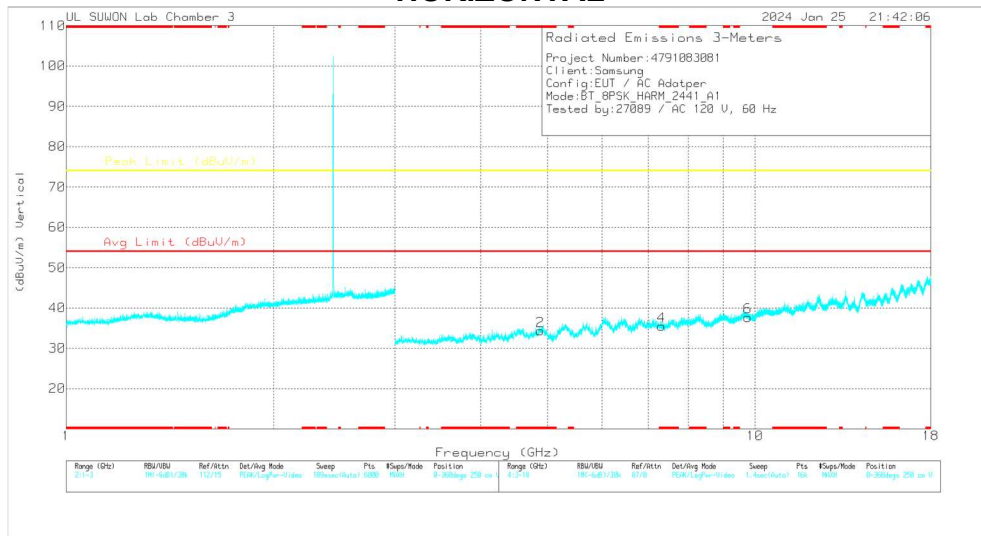
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

39 CHANNEL RESULTS



HORIZONTAL



VERTICAL

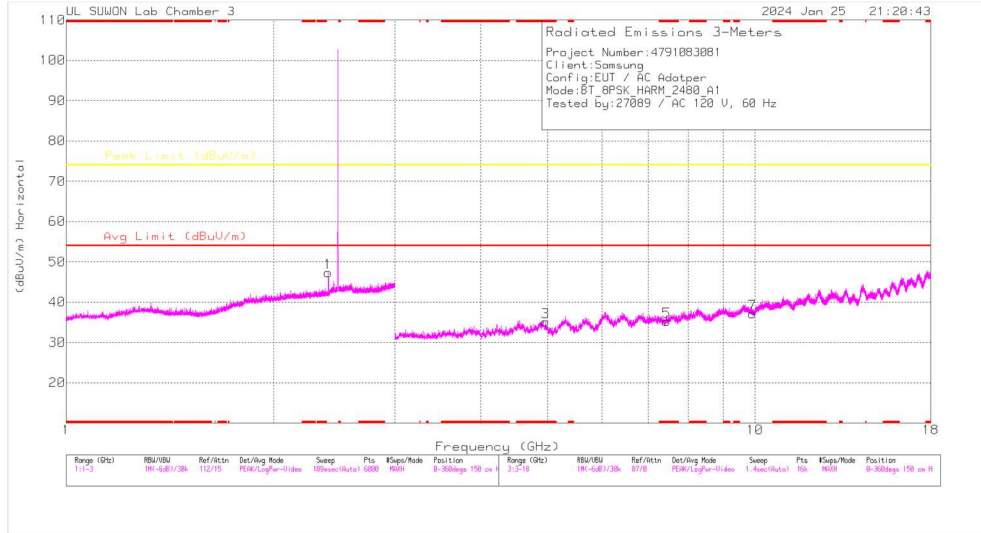
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

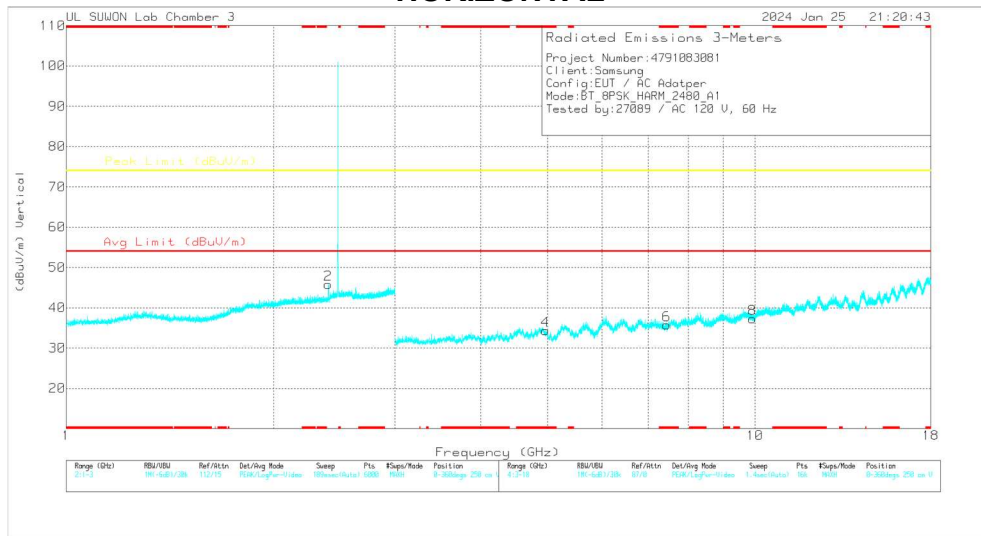
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.88168	30.74	PK	34.2	-29.9	35.04	-	-	74	-38.96	0-360	150	H
3	* 7.32308	25.19	PK	35.8	-25.5	35.49	-	-	74	-38.51	0-360	150	H
5	9.76449	22.12	PK	36.9	-21.5	37.52	-	-	74	-36.48	0-360	150	H
2	* 4.88168	29.99	PK	34.2	-29.9	34.29	-	-	74	-39.71	0-360	250	V
4	* 7.32308	25.13	PK	35.8	-25.5	35.43	-	-	74	-38.57	0-360	250	V
6	9.76449	22.32	PK	36.9	-21.5	37.72	-	-	74	-36.28	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

78 CHANNEL RESULTS



HORIZONTAL



VERTICAL

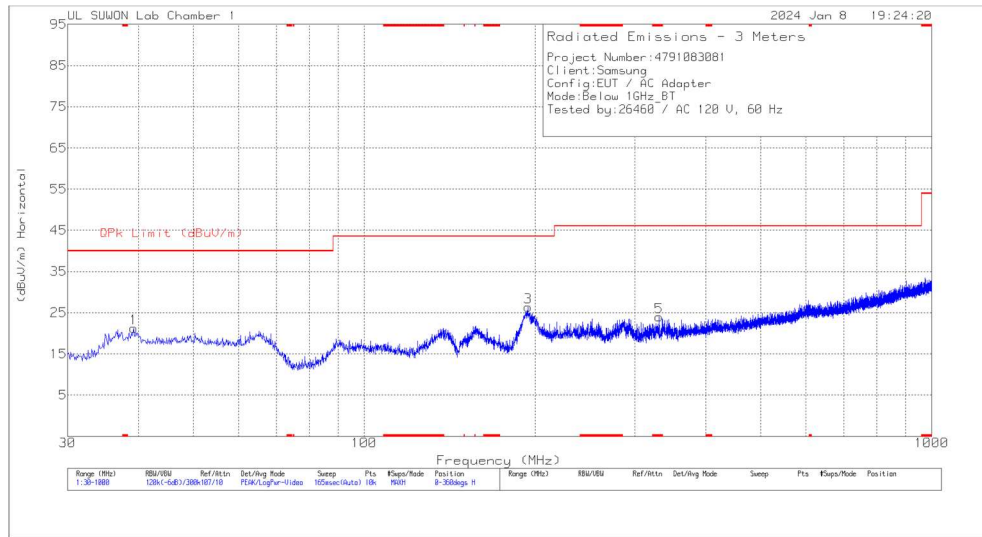
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

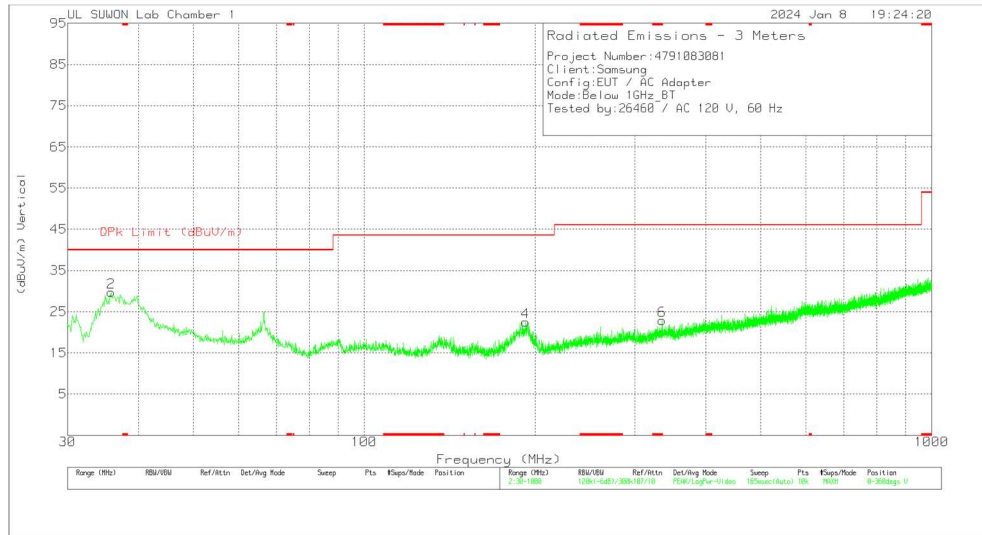
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor (dB/m)	Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.96137	30.86	PK	34.3	-30.1	35.06	-	-	74	-38.94	0-360	150	H
5	* 7.44028	24.79	PK	35.7	-25.2	35.29	-	-	74	-38.71	0-360	150	H
7	9.92012	21.49	PK	37.1	-21.4	37.19	-	-	74	-36.81	0-360	150	H
4	* 4.96044	30.09	PK	34.3	-30	34.39	-	-	74	-39.61	0-360	250	V
6	* 7.44028	25.22	PK	35.7	-25.2	35.72	-	-	74	-38.28	0-360	250	V
8	9.92012	21.59	PK	37.1	-21.4	37.29	-	-	74	-36.71	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration
 Mkr1 and 2 in above pre-scan graph were confirmed as in-band emissions.

10.2. WORST CASE BELOW 1 GHz SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Antenna Correction Factor(dB/m)	Loss(dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	39.215	34.19	Pk	18.2	-31.1	21.29	40	-18.71	0-360	100	H
3	194.221	38.66	Pk	16.9	-29.2	26.36	43.52	-17.16	0-360	100	H
5	* 330.991	32.66	Pk	19.7	-28.4	23.96	46.02	-22.06	0-360	100	H
2	35.82	43.99	Pk	16.8	-31.1	29.69	40	-10.31	0-360	200	V
4	192.475	35.06	Pk	16.7	-29.3	22.46	43.52	-21.06	0-360	300	V
6	* 334.871	31.39	Pk	19.9	-28.4	22.89	46.02	-23.13	0-360	300	V

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

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 C63.10:2013.

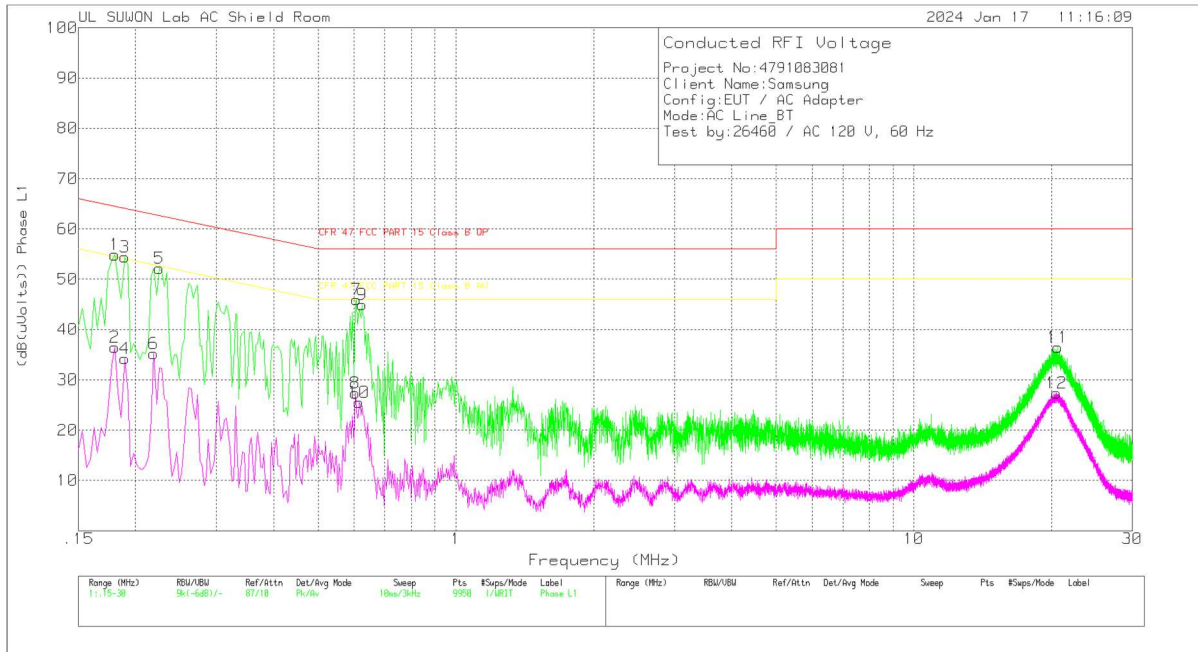
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1. AC Power Line

LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_L1[dB]	CABLELOSS [dB]	Corrected Reading (dB(uVolts))	47 CFR FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	47 CFR FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
1	.18	45.16	Pk	9.5	.2	54.86	64.49	-9.63	-	-
2	.18	26.74	Av	9.5	.2	36.44	-	-	54.49	-18.05
3	.189	44.7	Pk	9.5	.2	54.4	64.08	-9.68	-	-
4	.189	24.57	Av	9.5	.2	34.27	-	-	54.08	-19.81
5	.225	42.46	Pk	9.5	.2	52.16	62.63	-10.47	-	-
6	.219	25.47	Av	9.5	.2	35.17	-	-	52.86	-17.69
7	.606	36.09	Pk	9.6	.2	45.89	56	-10.11	-	-
8	.603	17.54	Av	9.6	.2	27.34	-	-	46	-18.66
9	.624	35.17	Pk	9.6	.2	44.97	56	-11.03	-	-
10	.615	15.66	Av	9.6	.2	25.46	-	-	46	-20.54
11	20.634	26.43	Pk	9.6	.4	36.43	60	-23.57	-	-
12	20.523	17.33	Av	9.6	.4	27.33	-	-	50	-22.67

Pk - Peak detector

Av - Average detection

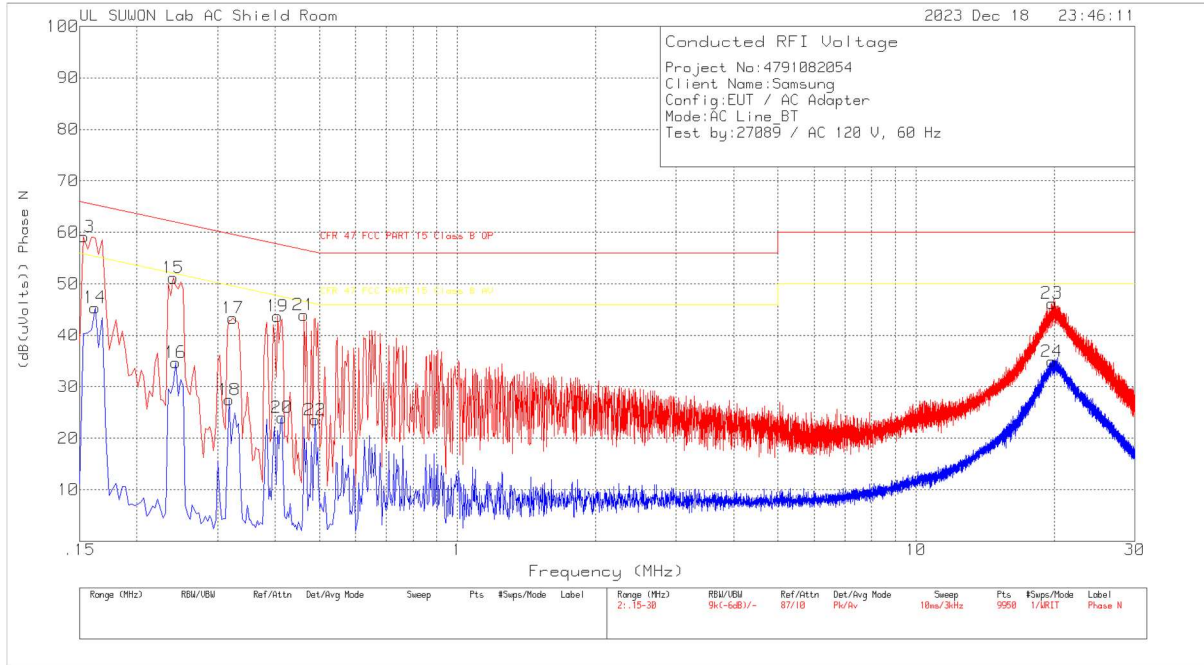
Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_L1[dB]	CABLELOSS [dB]	Corrected Reading (dB(uVolts))	47 CFR FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	47 CFR FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
.17925	43.55	Qp	9.5	.2	53.25	64.52	-11.27	-	-
.18825	42.81	Qp	9.5	.2	52.51	64.11	-11.6	-	-

Qp - Quasi-Peak detector

LINE 2 RESULTS



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_N[dB]	CABLELOS S[dB]	Corrected Reading (dB(uVolts))	47 CFR FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	47 CFR FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
13	.153	49.55	Pk	9.5	.1	59.15	65.84	-6.69	-	-
14	.162	35.78	Av	9.5	.1	45.38	-	-	55.36	-9.98
15	.24	41.47	Pk	9.5	.2	51.17	62.1	-10.93	-	-
16	.243	25.01	Av	9.5	.2	34.71	-	-	51.99	-17.28
17	.324	33.64	Pk	9.5	.2	43.34	59.6	-16.26	-	-
18	.318	17.76	Av	9.5	.2	27.46	-	-	49.76	-22.3
19	.405	34	Pk	9.5	.2	43.7	57.75	-14.05	-	-
20	.414	14.31	Av	9.5	.2	24.01	-	-	47.57	-23.56
21	.462	34.24	Pk	9.5	.2	43.94	56.66	-12.72	-	-
22	.489	13.85	Av	9.5	.2	23.55	-	-	46.18	-22.63
23	19.773	36.24	Pk	9.6	.4	46.24	60	-13.76	-	-
24	19.773	24.92	Av	9.6	.4	34.92	-	-	50	-15.08

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_AU TO_With EX_N[dB]	CABLELOS S[dB]	Corrected Reading (dB(uVolts))	47 CFR FCC PART 15 Class B QP (dB(uVolts))	Margin (dB)	47 CFR FCC PART 15 Class B AV (dB(uVolts))	Margin (dB)
.15375	43.31	Qp	9.5	.1	52.91	65.79	-12.88	-	-
.16125	43.35	Qp	9.5	.1	52.95	65.4	-12.45	-	-

Qp - Quasi-Peak detector

END OF TEST REPORT