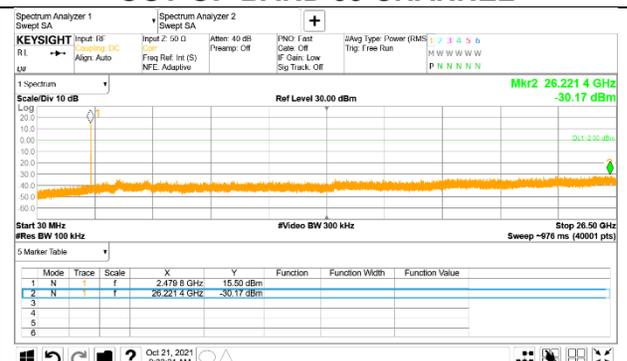
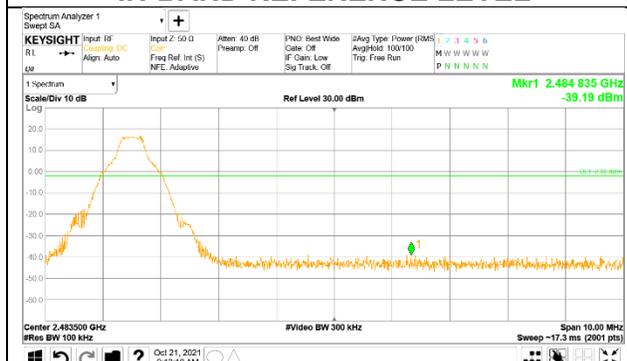
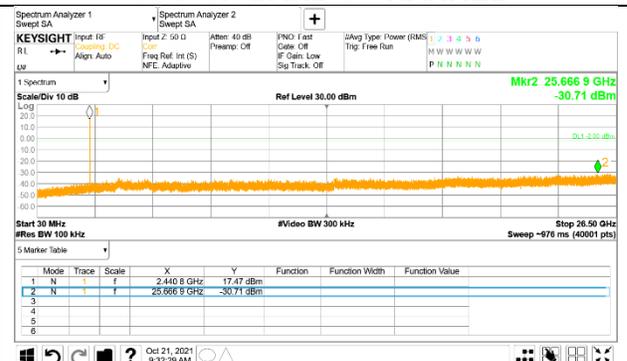
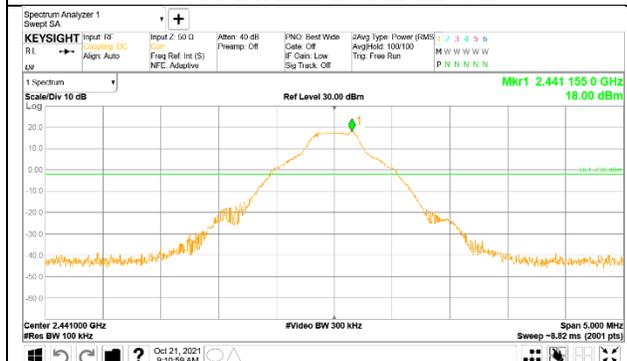
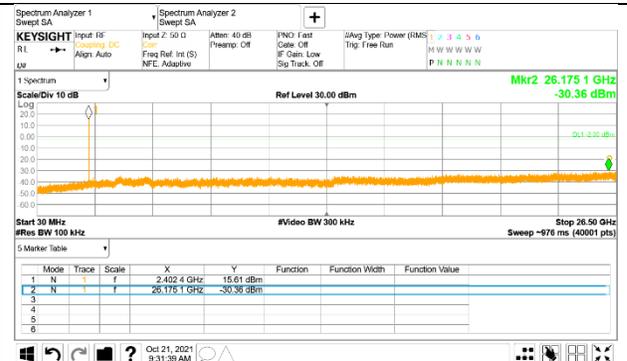
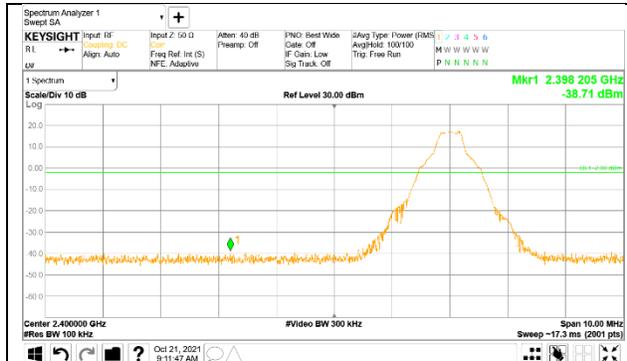
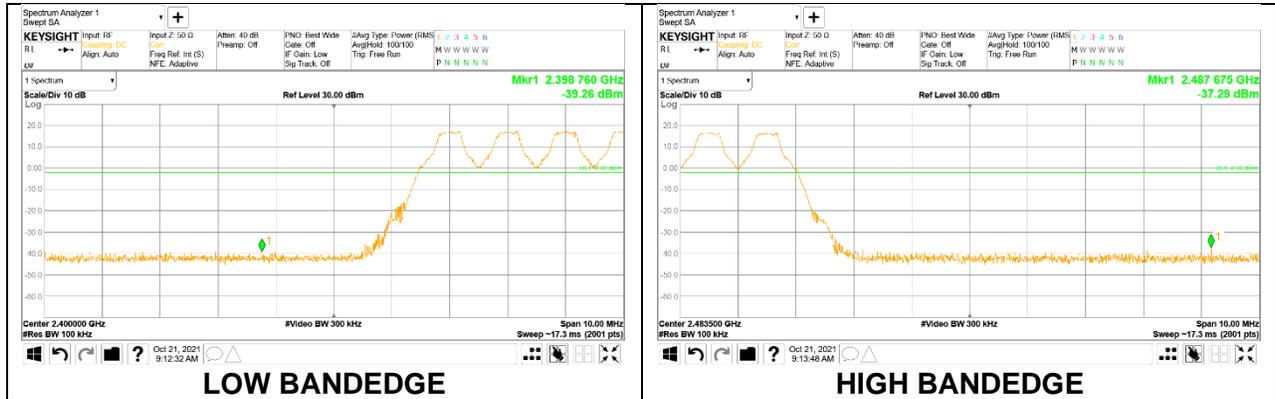


SPURIOUS EMISSIONS, NON-HOPPING - ANT2

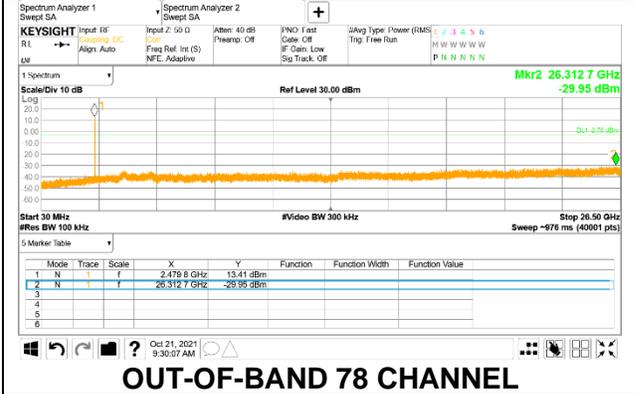
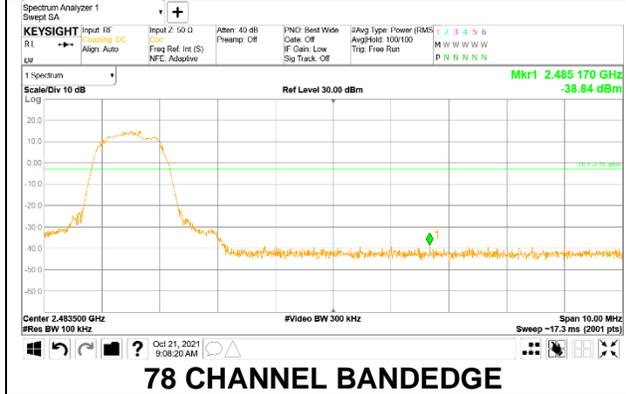
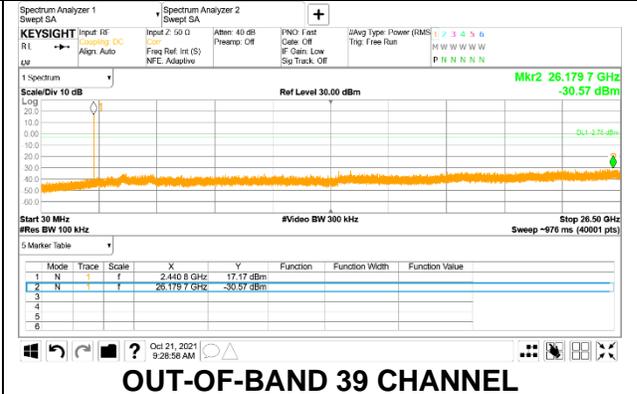
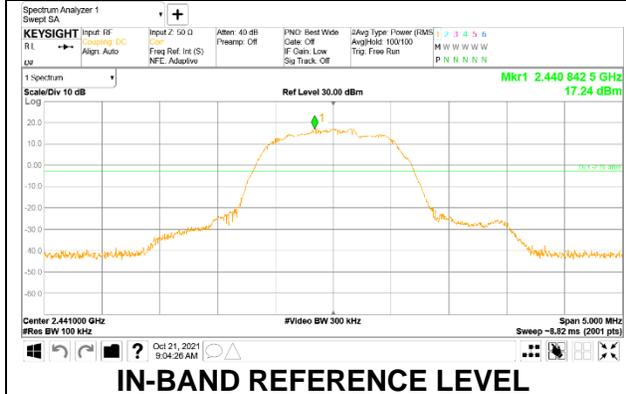
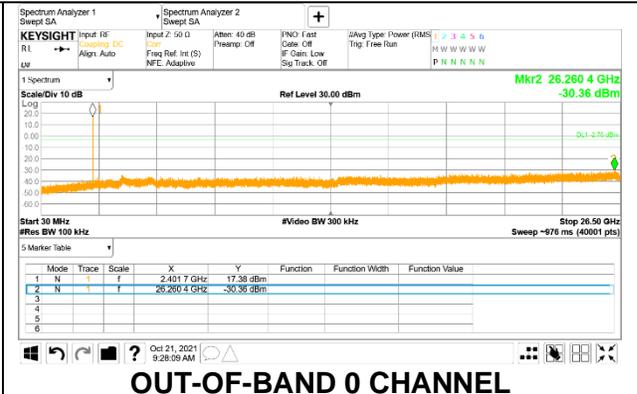
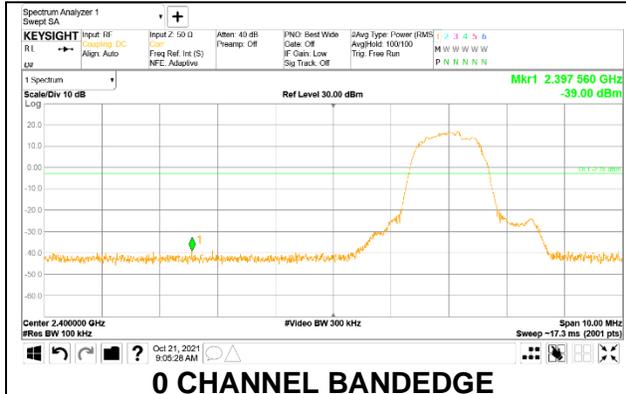


SPURIOUS BANDEGE EMISSIONS WITH HOPPING ON

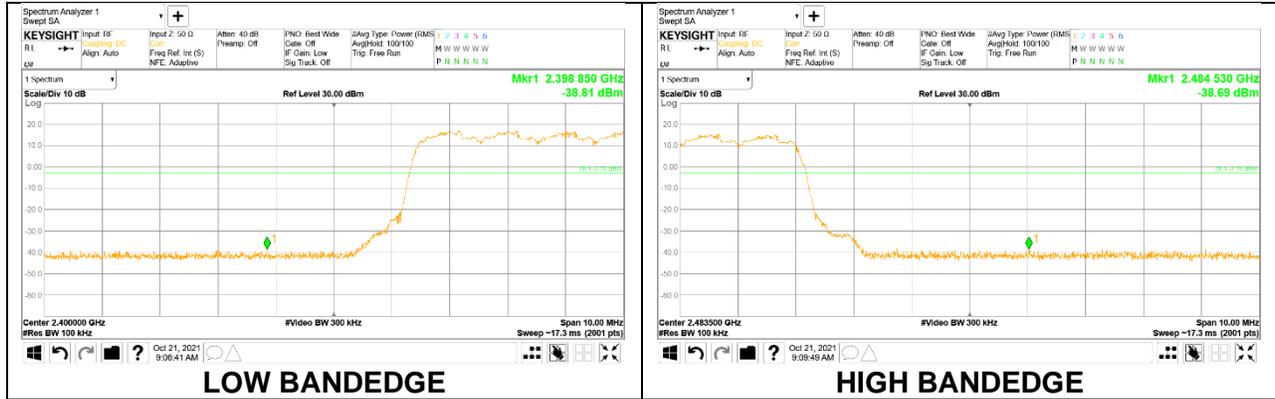


9.8.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

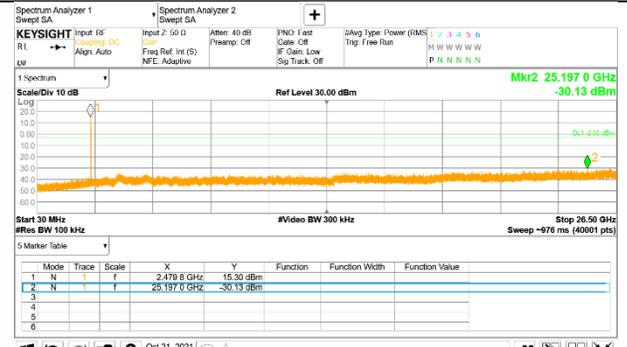
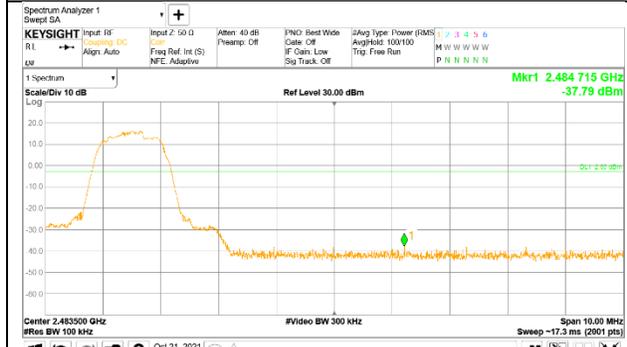
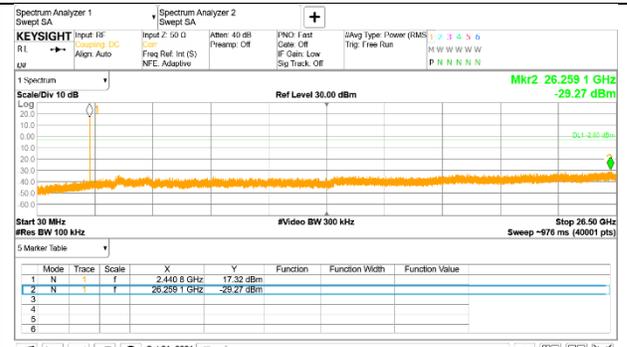
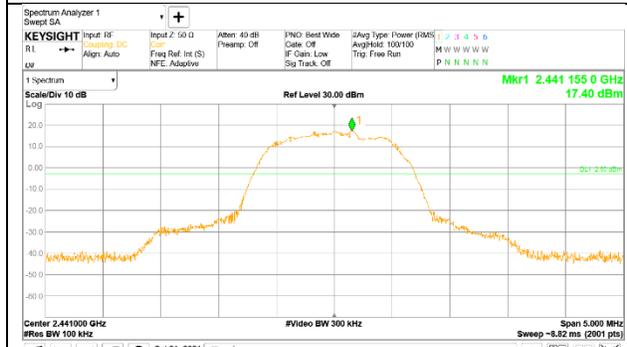
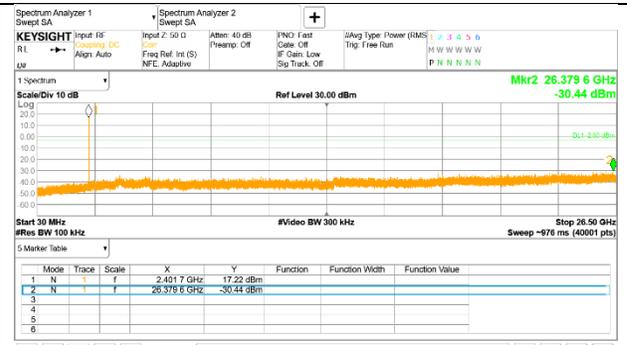
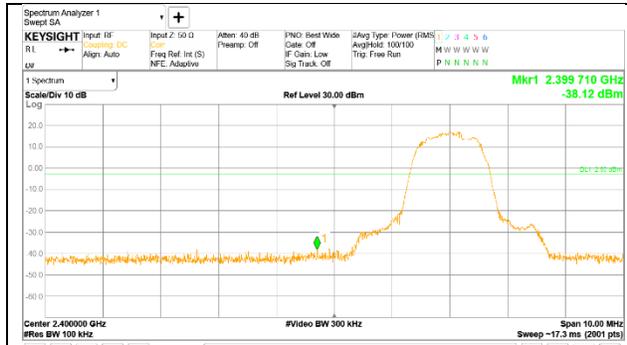
SPURIOUS EMISSIONS, NON-HOPPING - ANT1



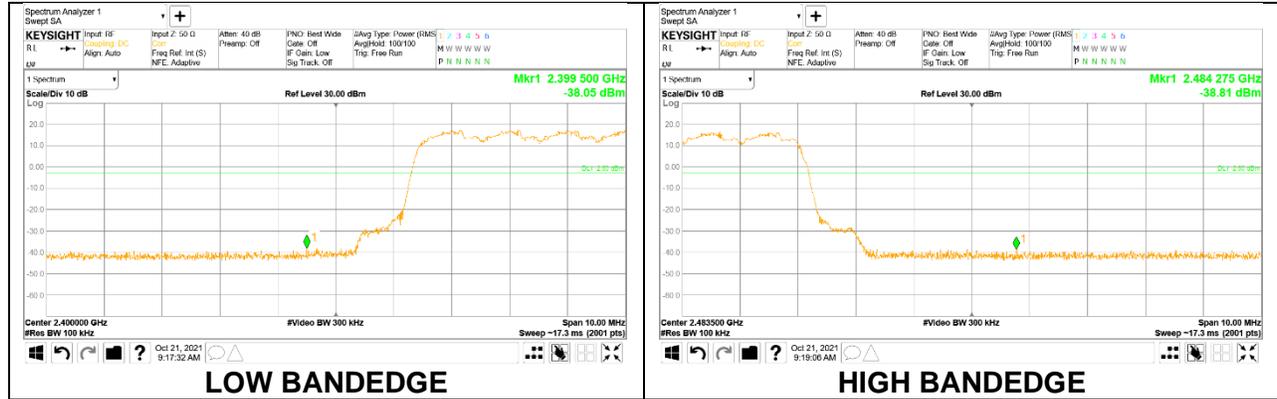
SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



SPURIOUS EMISSIONS, NON-HOPPING - ANT2



SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	MHz	GHz	GHz
0.009 – 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 – 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.17	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	167.72 ~ 173.2	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	240 ~ 285	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	322 ~ 335.4	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	399.90 ~ 410	3345.8 ~ 3358		
		608 ~ 614	3600 ~ 4400		
		960 ~ 1240			

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. 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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements.(Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.)

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1/T (on time) for average measurement.

$$\text{GFSK} = 1/T = 1 / 0.00289\text{s} = 347\text{Hz}.$$

The minimum VBW was 347Hz, but test receiver(ESU40) couldn't set value 347Hz. Due to this reason, testing VBW was set to 500Hz(Worst cases).

The spectrum from 1GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

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.

Note : Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

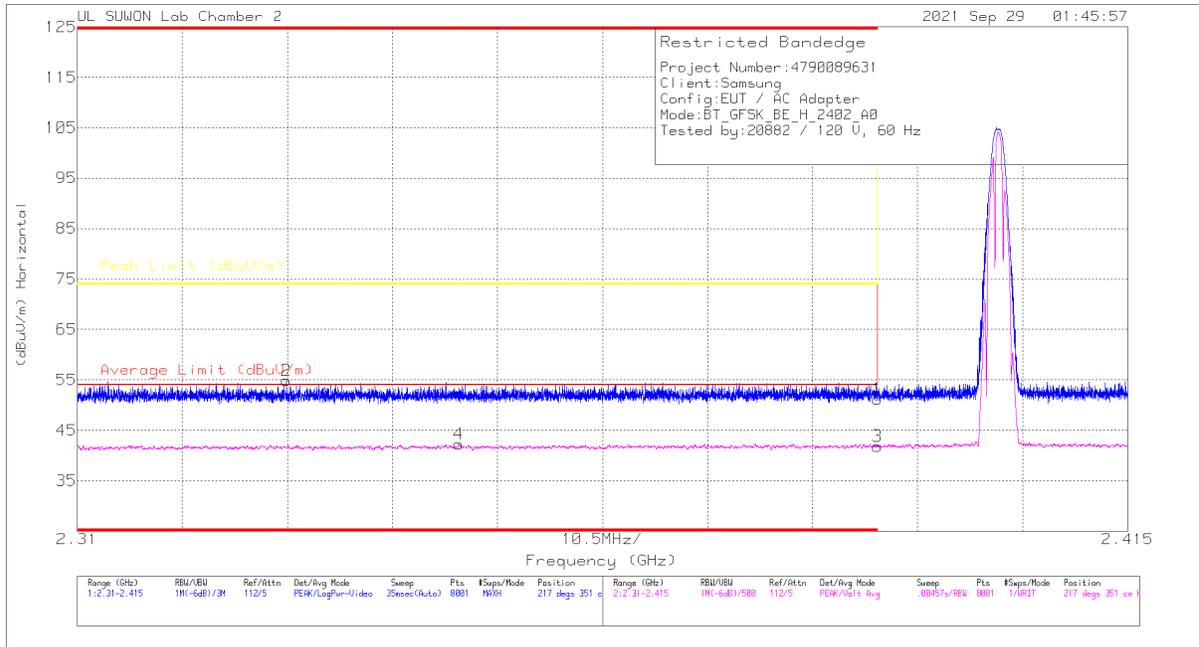
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

ANT1
BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

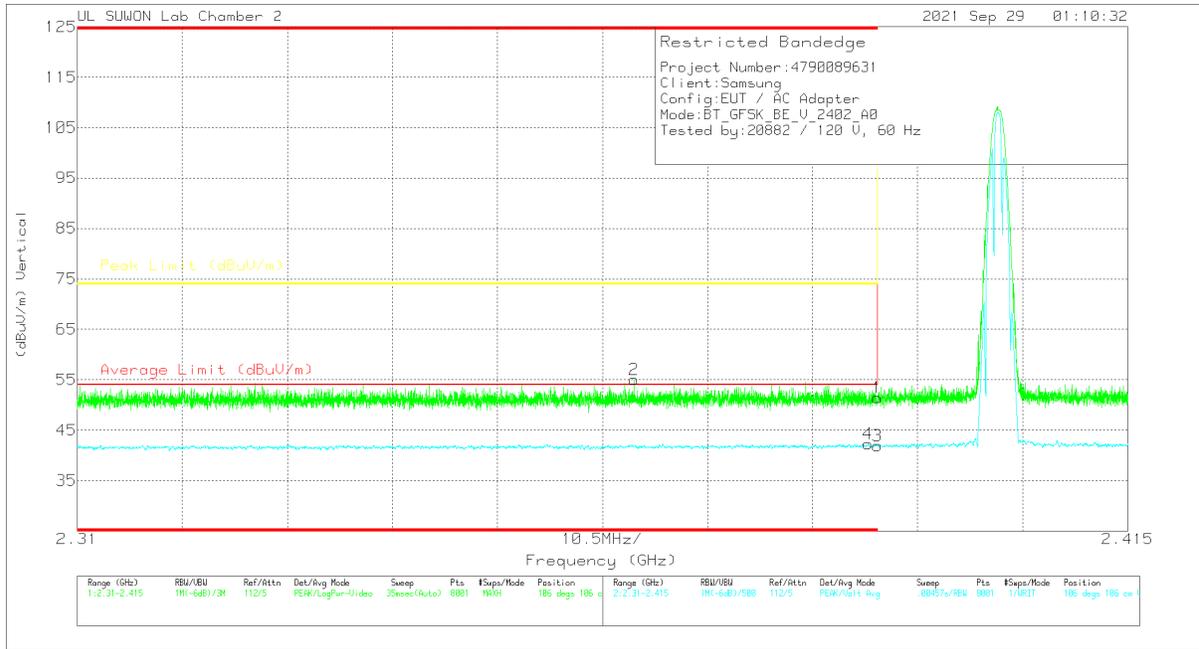
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.91	Pk	31.9	-20.6	51.21	-	-	74	-22.79	217	351	H
2	* 2.33088	43.77	Pk	31.8	-20.7	54.87	-	-	74	-19.13	217	351	H
3	* 2.39	30.55	VA1T	31.9	-20.6	41.85	54	-12.15	-	-	217	351	H
4	* 2.34814	31.09	VA1T	31.8	-20.6	42.29	54	-11.71	-	-	217	351	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	3117_00168724	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	40.19	Pk	31.9	-20.6	51.49	-	-	74	-22.51	106	106	V
2	* 2.36565	43.81	PK	31.8	-20.6	55.01	-	-	74	-18.99	106	106	V
3	* 2.39	30.58	VA1T	31.9	-20.6	41.88	54	-12.12	-	-	106	106	V
4	* 2.38907	31.02	VA1T	31.9	-20.6	42.32	54	-11.68	-	-	106	106	V

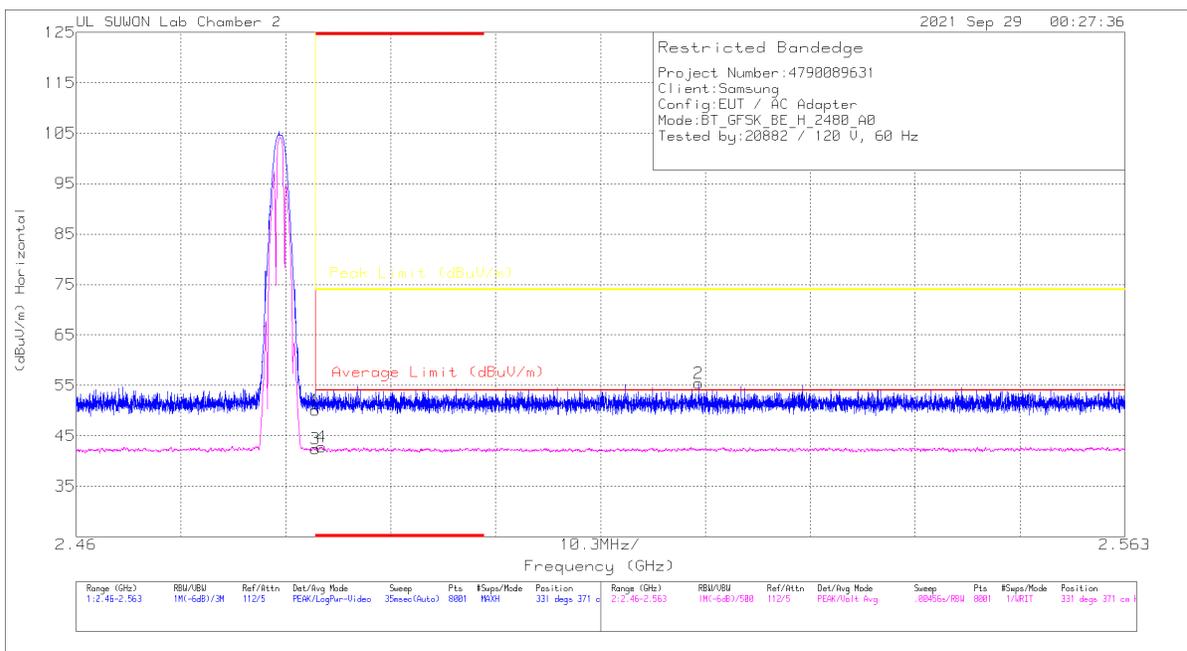
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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

BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT

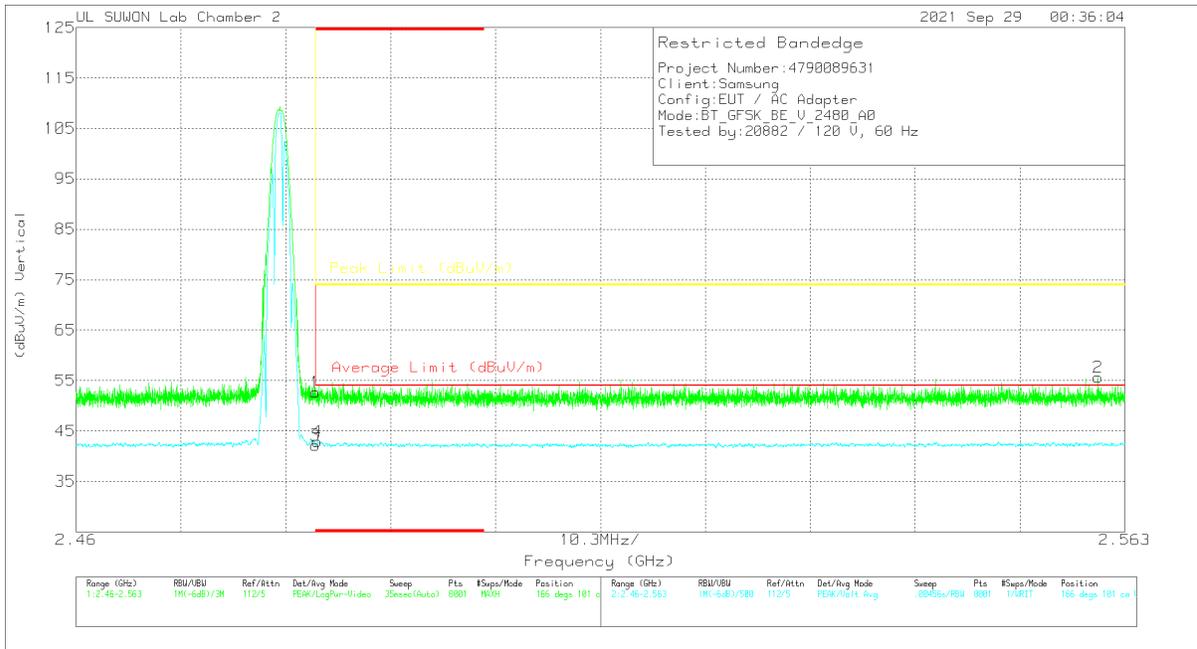


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	38.53	Pk	32	-20.4	50.13	-	-	74	-23.87	331	371	H
2	2.52116	43.58	Pk	32.1	-20.3	55.38	-	-	74	-18.62	331	371	H
3	* 2.48351	30.79	VA1T	32	-20.4	42.39	54	-11.61	-	-	331	371	H
4	* 2.48411	31.19	VA1T	32	-20.4	42.79	54	-11.21	-	-	331	371	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	3117_00168724	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	* 2.48351	41.03	Pk	32	-20.4	52.63	-	-	74	-21.37	166	101	V
2	2.56039	43.67	Pk	32.2	-20.2	55.67	-	-	74	-18.33	166	101	V
3	* 2.48351	30.54	VA1T	32	-20.4	42.14	54	-11.86	-	-	166	101	V
4	* 2.48369	31.29	VA1T	32	-20.4	42.89	54	-11.11	-	-	166	101	V

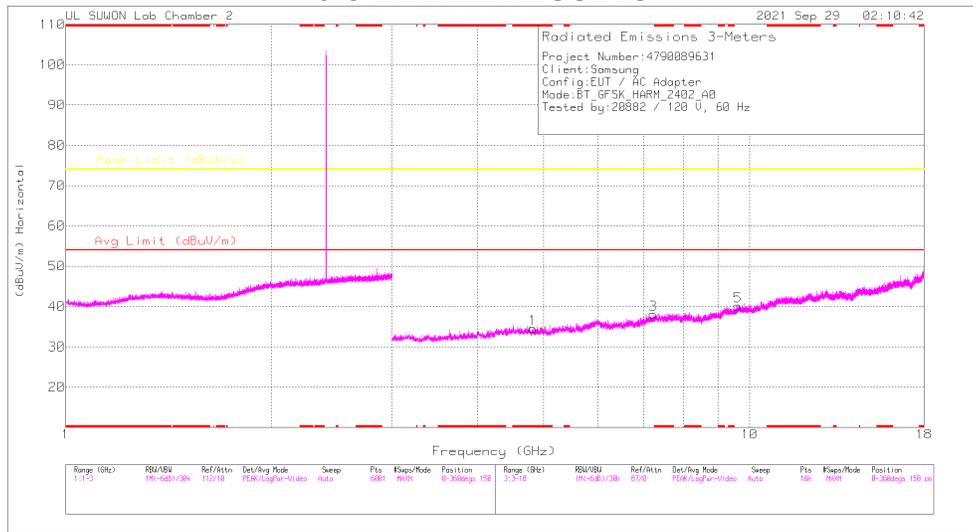
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

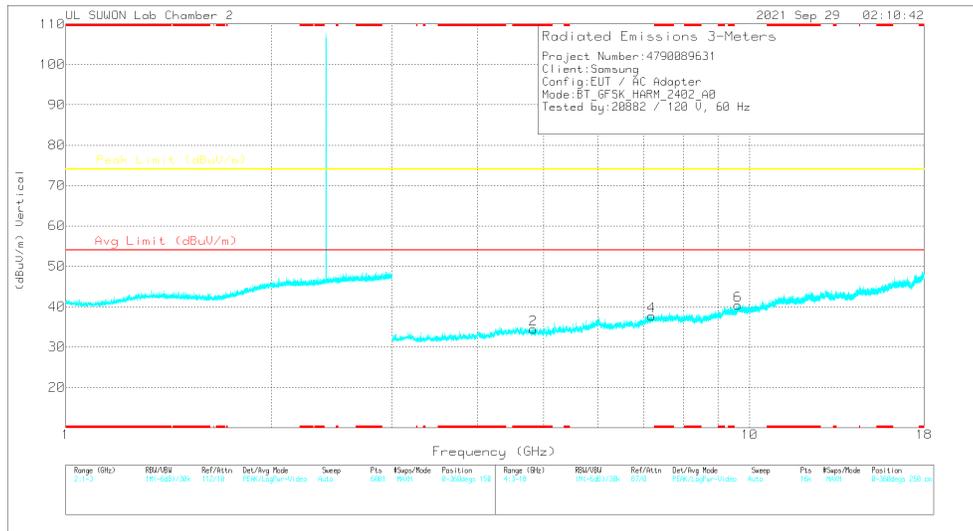
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



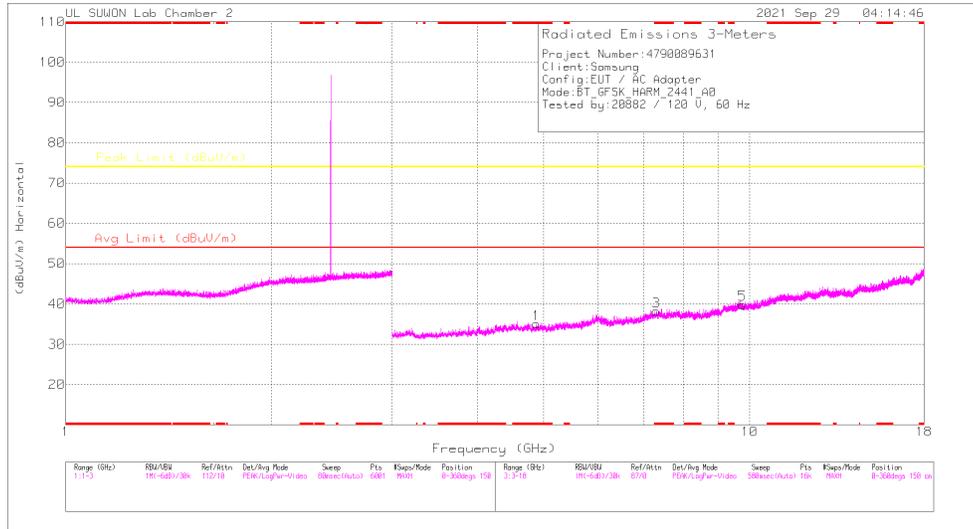
VERTICAL

RADIATED EMISSIONS

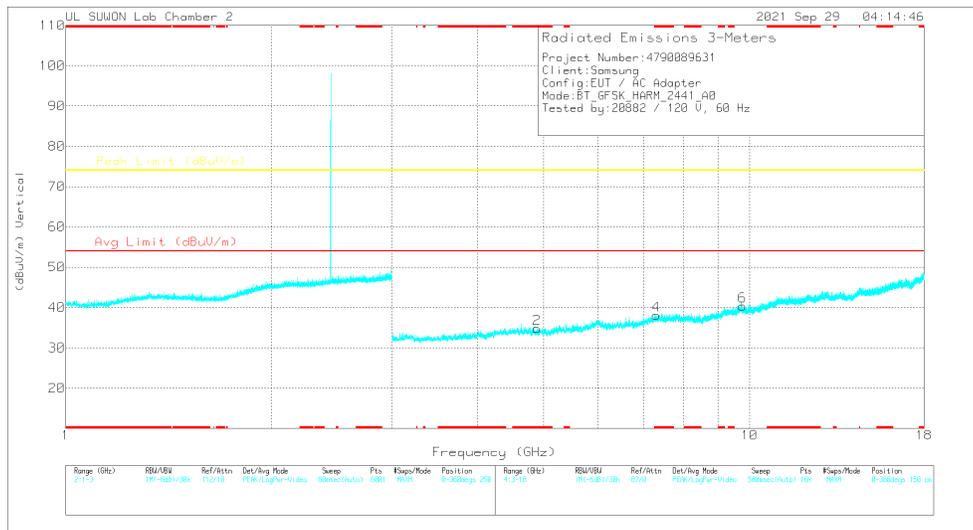
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.81943	36.22	PKFH	34.1	-28.1	42.22	-	-	74	-31.78	360	100	H
* 4.81571	35.35	PKFH	34.1	-28	41.45	-	-	74	-32.55	360	100	V
7.21443	34.23	PKFH	36.2	-25.4	45.03	-	-	74	-28.97	360	100	H
7.20045	33.66	PKFH	36.2	-25.3	44.56	-	-	74	-29.44	360	100	V
9.61382	31.32	PKFH	37	-21.7	46.62	-	-	74	-27.38	360	100	H
9.61433	31.3	PKFH	37	-21.7	46.6	-	-	74	-27.4	360	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

39 CHANNEL RESULTS



HORIZONTAL



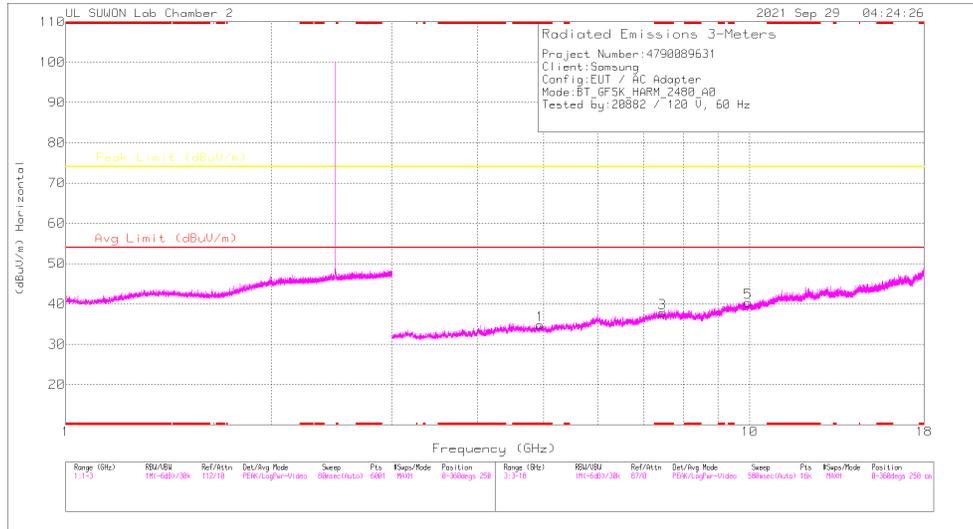
VERTICAL

RADIATED EMISSIONS

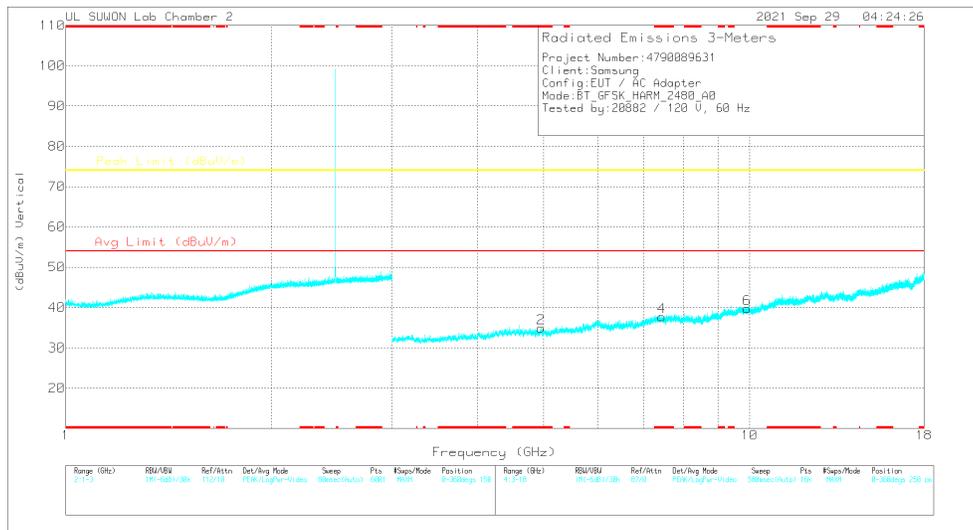
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.88259	35.3	PKFH	34.1	-27.8	41.6	-	-	74	-32.4	360	100	H
* 4.88156	35.54	PKFH	34.1	-27.8	41.84	-	-	74	-32.16	360	100	V
* 7.30217	33.83	PKFH	36.2	-25.1	44.93	-	-	74	-29.07	360	100	H
* 7.30231	33.87	PKFH	36.2	-25.1	44.97	-	-	74	-29.03	360	100	V
9.76433	31.24	PKFH	37.2	-21.5	46.94	-	-	74	-27.06	360	100	H
9.76244	31.22	PKFH	37.2	-21.5	46.92	-	-	74	-27.08	360	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

78 CHANNEL RESULTS



HORIZONTAL



VERTICAL

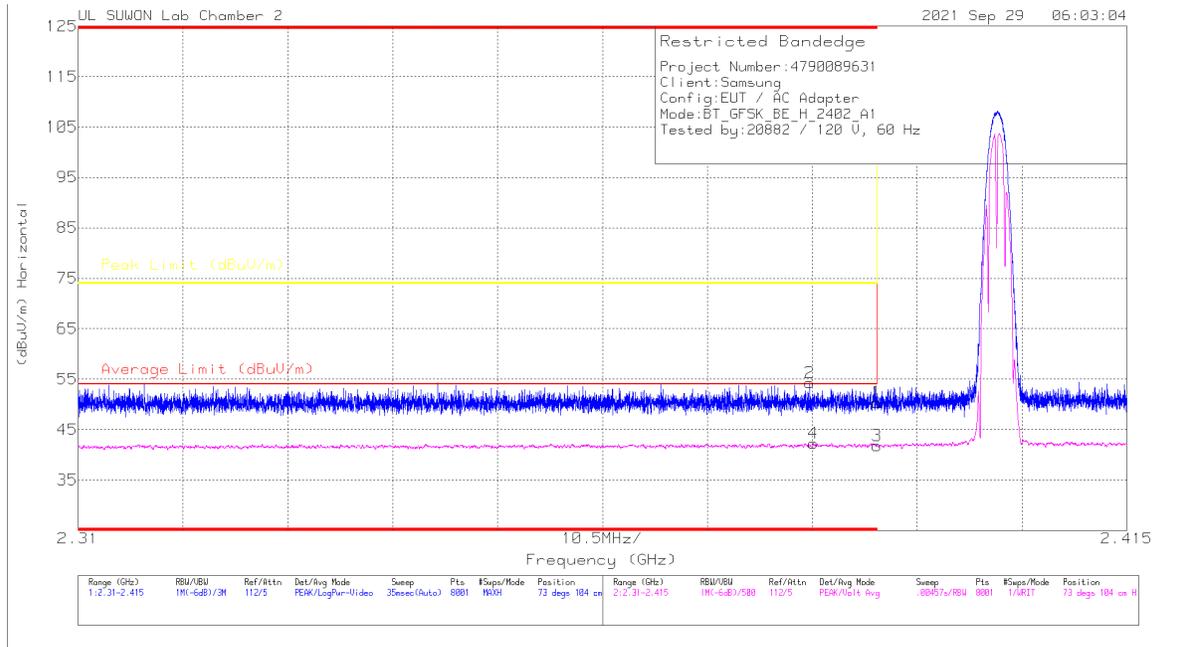
RADIATED EMISSIONS

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
* 4.94052	35	PKFH	34.1	-27.2	41.9	-	-	74	-32.1	360	100	H
* 4.94024	35.04	PKFH	34.1	-27.2	41.94	-	-	74	-32.06	360	100	V
* 7.4594	33.04	PKFH	36	-24.2	44.84	-	-	74	-29.16	360	100	H
* 7.46022	32.51	PKFH	36	-24.2	44.31	-	-	74	-29.69	360	100	V
9.94817	30.74	PKFH	37.4	-21.1	47.04	-	-	74	-26.96	360	100	H
9.95035	30.13	PKFH	37.4	-21.1	46.43	-	-	74	-27.57	360	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

ANT2
BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT

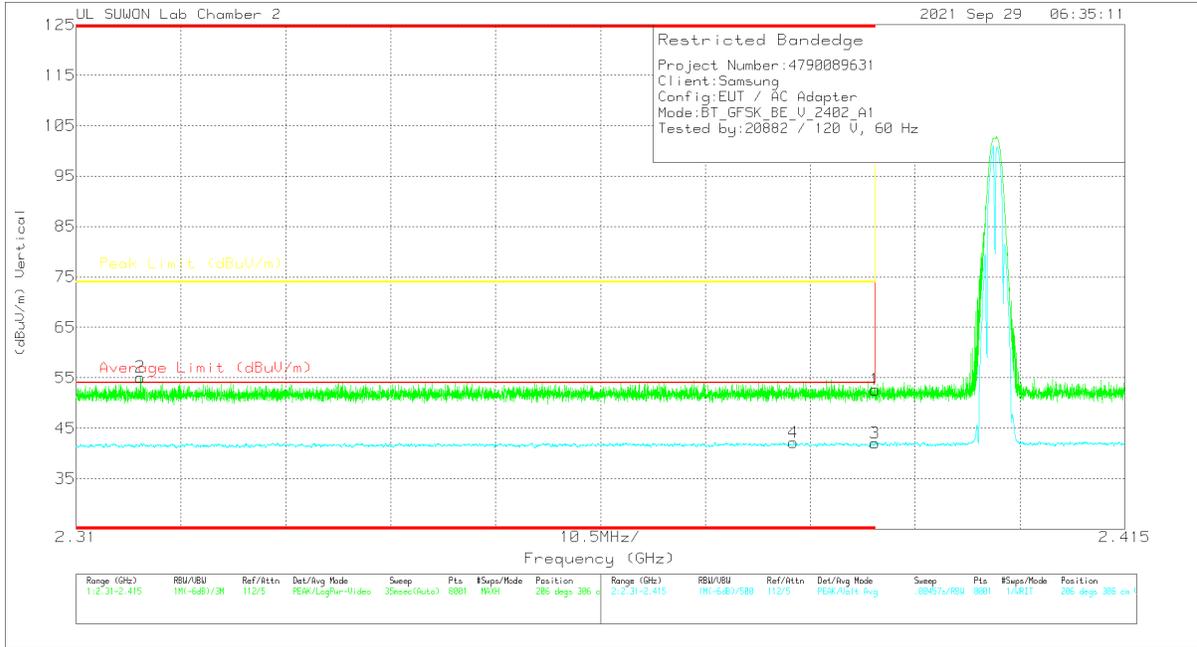


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	39.09	Pk	31.9	-20.6	50.39	-	-	74	-23.61	73	104	H
2	* 2.38326	42.97	Pk	31.9	-20.6	54.27	-	-	74	-19.73	73	104	H
3	* 2.39	30.54	VA1T	31.9	-20.6	41.84	54	-12.16	-	-	73	104	H
4	* 2.38361	31.01	VA1T	31.9	-20.6	42.31	54	-11.69	-	-	73	104	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



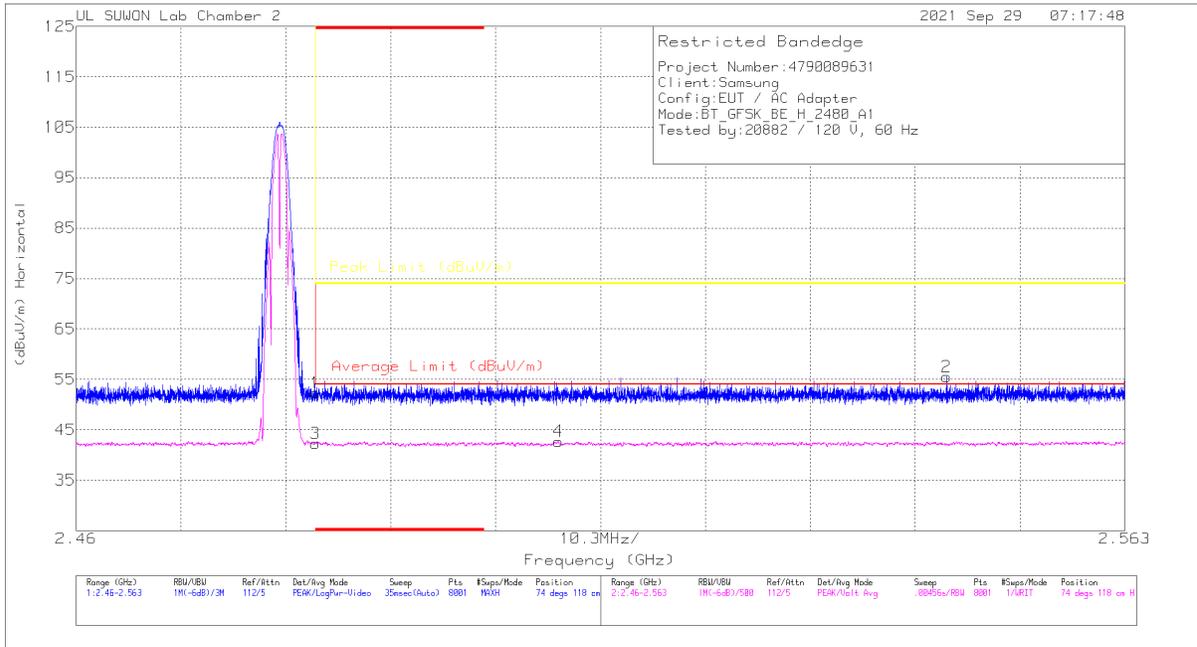
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	41.32	PK	31.9	-20.6	52.62	-	-	74	-21.38	206	306	V
2	* 2.31644	43.99	PK	31.7	-20.6	55.09	-	-	74	-18.91	206	306	V
3	* 2.39	30.77	VA1T	31.9	-20.6	42.07	54	-11.93	-	-	206	306	V
4	* 2.38183	30.92	VA1T	31.9	-20.6	42.22	54	-11.78	-	-	206	306	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

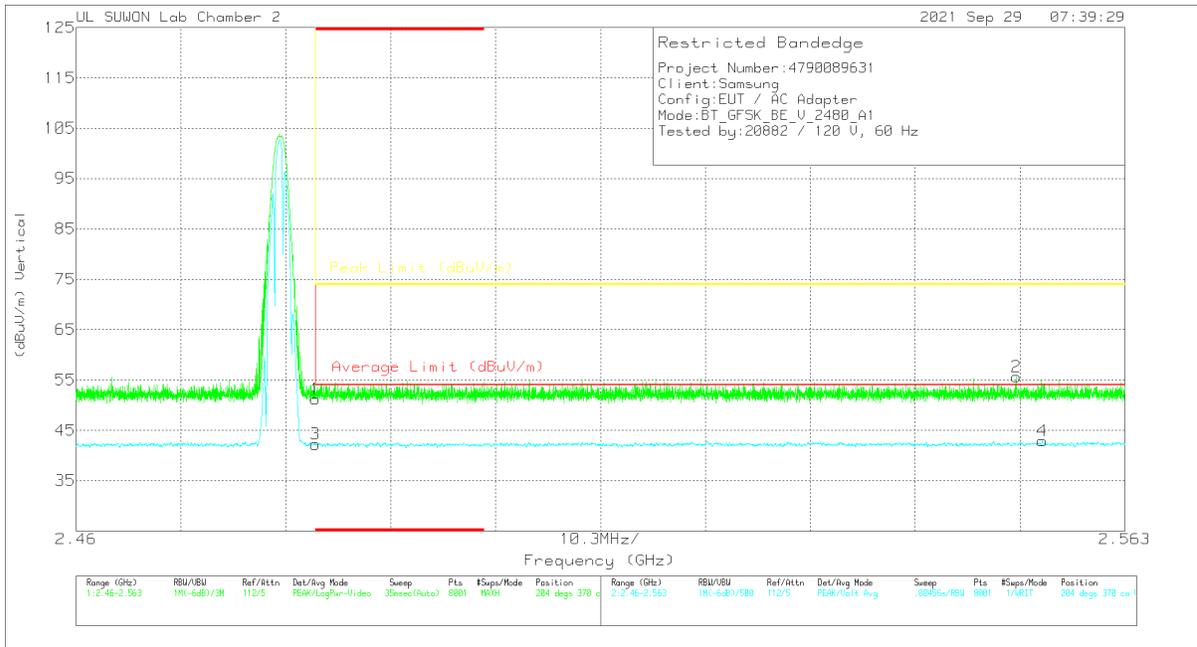


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	40.66	Pk	32	-20.4	52.26	-	-	74	-21.74	74	118	H
2	2.54546	43.81	Pk	32.1	-20.4	55.51	-	-	74	-18.49	74	118	H
3	* 2.48351	30.72	VA1T	32	-20.4	42.32	54	-11.68	-	-	74	118	H
4	2.50737	31.02	VA1T	32.1	-20.4	42.72	54	-11.28	-	-	74	118	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



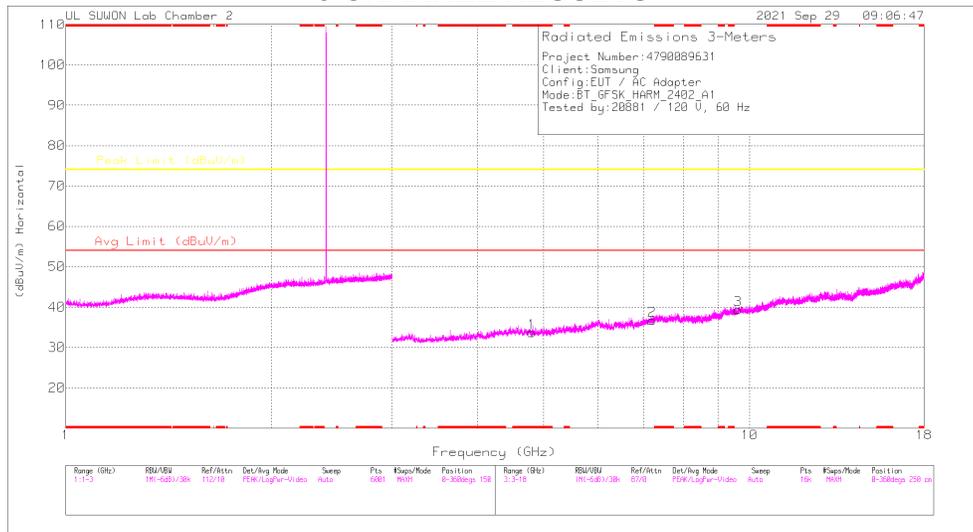
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	39.57	Pk	32	-20.4	51.17	-	-	74	-22.83	204	370	V
2	2.55233	43.69	Pk	32.2	-20.3	55.59	-	-	74	-18.41	204	370	V
3	* 2.48351	30.63	VA1T	32	-20.4	42.23	54	-11.77	-	-	204	370	V
4	2.55489	30.96	VA1T	32.2	-20.3	42.86	54	-11.14	-	-	204	370	V

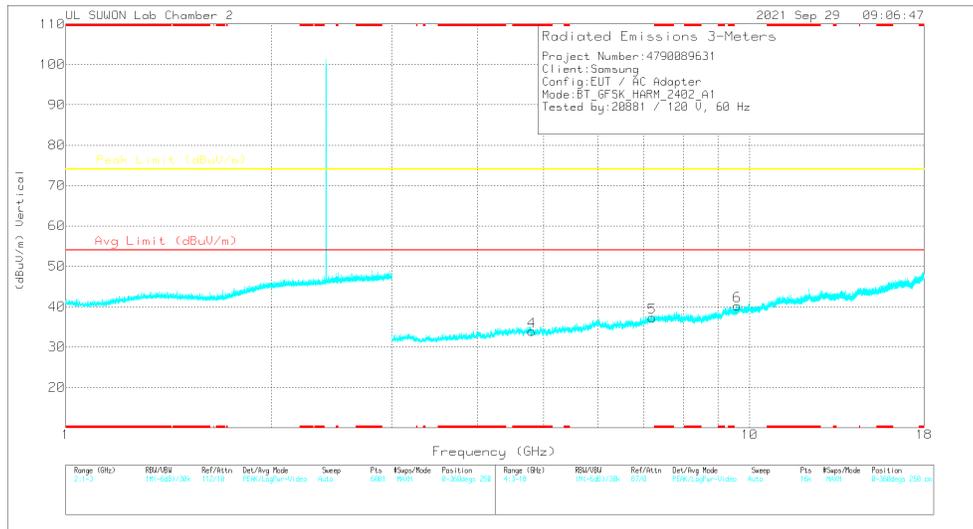
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



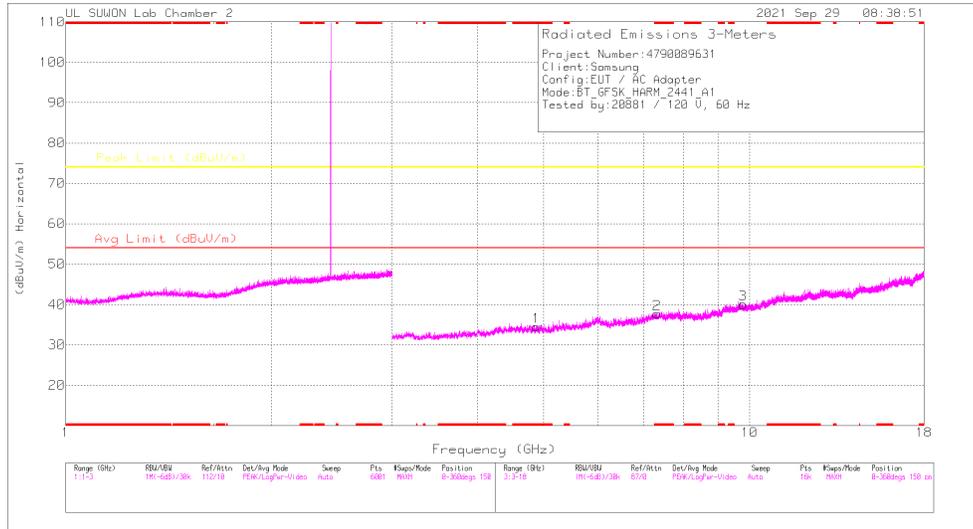
VERTICAL

RADIATED EMISSIONS

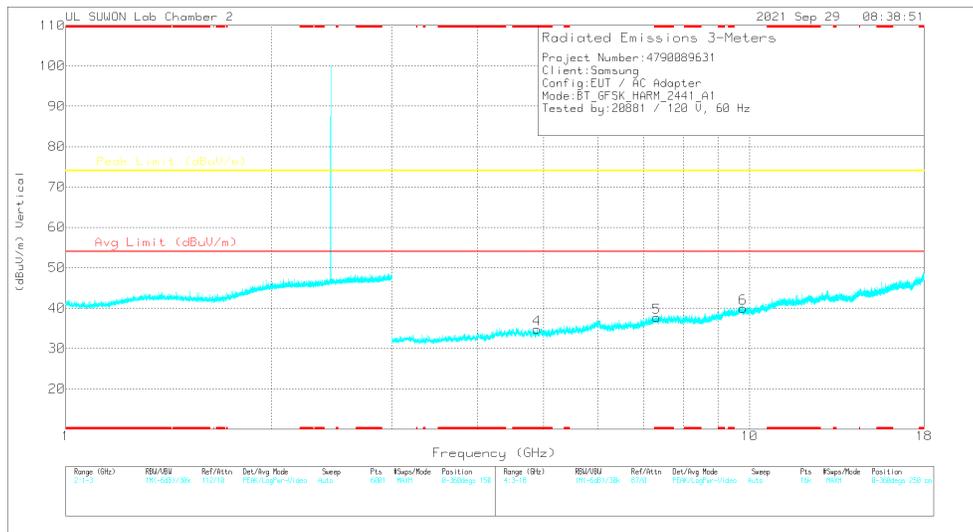
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80814	34.39	PKFH	34.1	-28	40.49	-	-	74	-33.51	360	100	H
* 4.80585	34.98	PKFH	34.1	-28	41.08	-	-	74	-32.92	360	100	V
7.20344	33.61	PKFH	36.2	-25.3	44.51	-	-	74	-29.49	360	100	H
7.20292	33.03	PKFH	36.2	-25.3	43.93	-	-	74	-30.07	360	100	V
9.60777	31.33	PKFH	37	-21.7	46.63	-	-	74	-27.37	360	100	H
9.60699	31.15	PKFH	37	-21.7	46.45	-	-	74	-27.55	360	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

39 CHANNEL RESULTS



HORIZONTAL



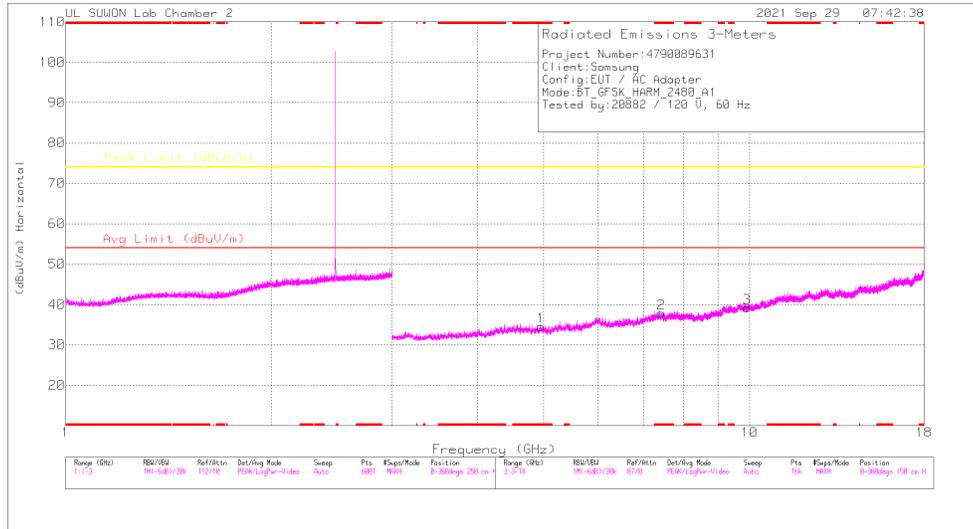
VERTICAL

RADIATED EMISSIONS

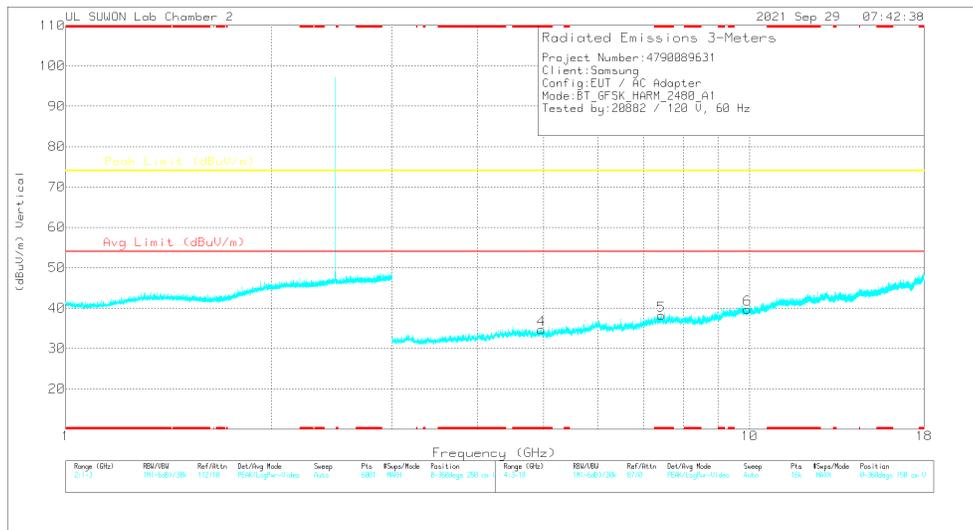
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.88048	35.19	PKFH	34.1	-27.8	41.49	-	-	74	-32.51	360	100	H
* 4.88272	35.47	PKFH	34.1	-27.8	41.77	-	-	74	-32.23	360	100	V
* 7.32412	34.21	PKFH	36.1	-24.9	45.41	-	-	74	-28.59	360	100	H
* 7.32067	34.59	PKFH	36.1	-24.8	45.89	-	-	74	-28.11	360	100	V
9.77565	30.76	PKFH	37.2	-21.6	46.36	-	-	74	-27.64	360	100	H
9.78677	30.46	PKFH	37.2	-21.7	45.96	-	-	74	-28.04	360	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

78 CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

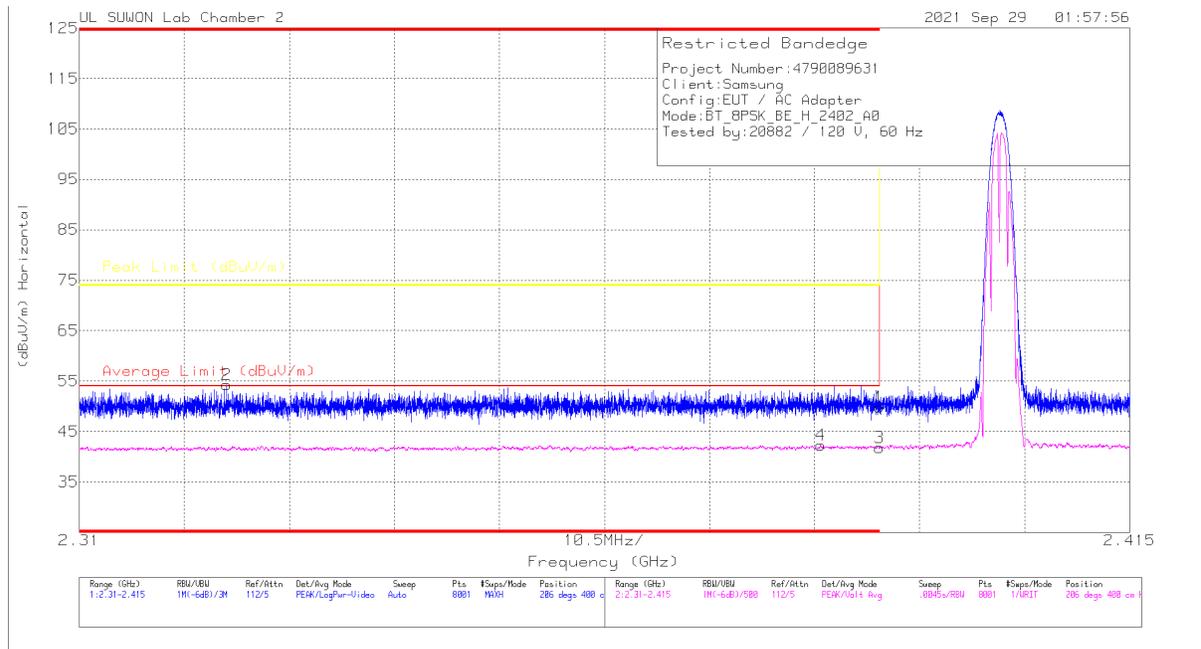
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.95176	34.58	PKFH	34.1	-27.2	41.48	-	-	74	-32.52	0	100	H
* 4.96196	34.36	PKFH	34.1	-27.2	41.26	-	-	74	-32.74	0	100	V
* 7.43551	34.07	PKFH	36	-24	46.07	-	-	74	-27.93	0	100	H
* 7.43766	33.33	PKFH	36	-24.1	45.23	-	-	74	-28.77	0	100	V
9.92233	30.47	PKFH	37.4	-21.2	46.67	-	-	74	-27.33	0	100	H
9.93903	31.14	PKFH	37.4	-21.1	47.44	-	-	74	-26.56	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

10.1.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

ANT1 BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT

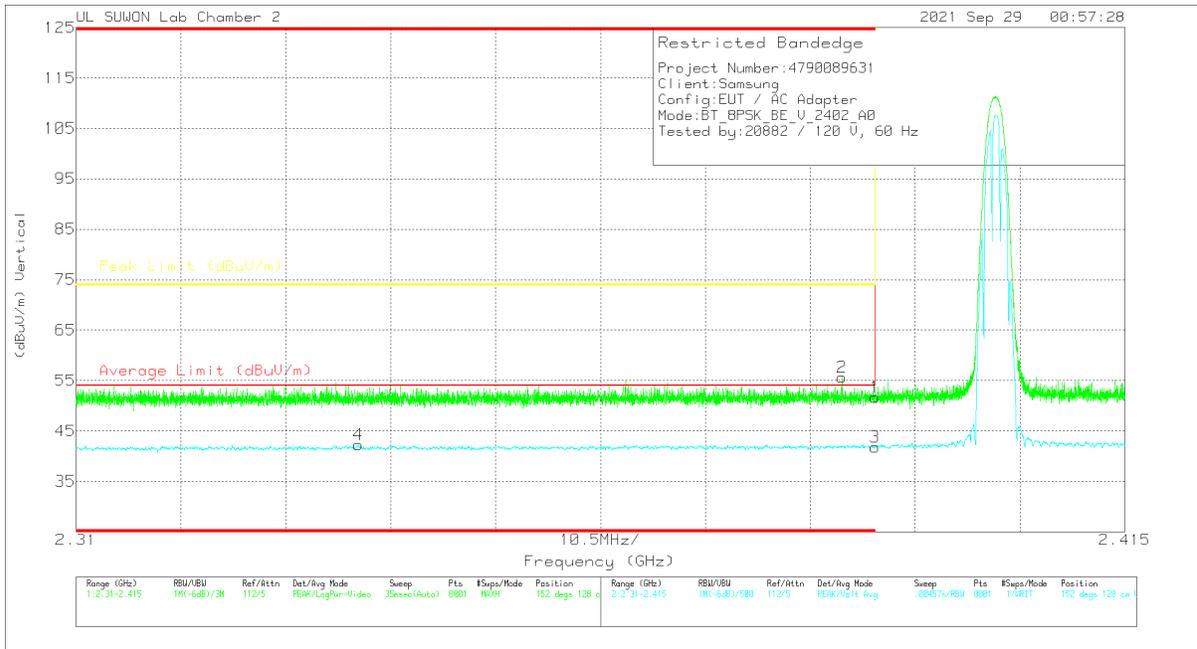


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	38.58	Pk	31.9	-20.6	49.88	-	-	74	-24.12	206	400	H
2	* 2.32473	43.06	Pk	31.8	-20.6	54.26	-	-	74	-19.74	206	400	H
3	* 2.39	30.48	VA1T	31.9	-20.6	41.78	54	-12.22	-	-	206	400	H
4	* 2.38409	30.94	VA1T	31.9	-20.6	42.24	54	-11.76	-	-	206	400	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	3117_00168724	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	40.35	Pk	31.9	-20.6	51.65	-	-	74	-22.35	152	128	V
2	* 2.38665	44.4	Pk	31.9	-20.6	55.7	-	-	74	-18.3	152	128	V
3	* 2.39	30.49	VA1T	31.9	-20.6	41.79	54	-12.21	-	-	152	128	V
4	* 2.33823	31.09	VA1T	31.8	-20.6	42.29	54	-11.71	-	-	152	128	V

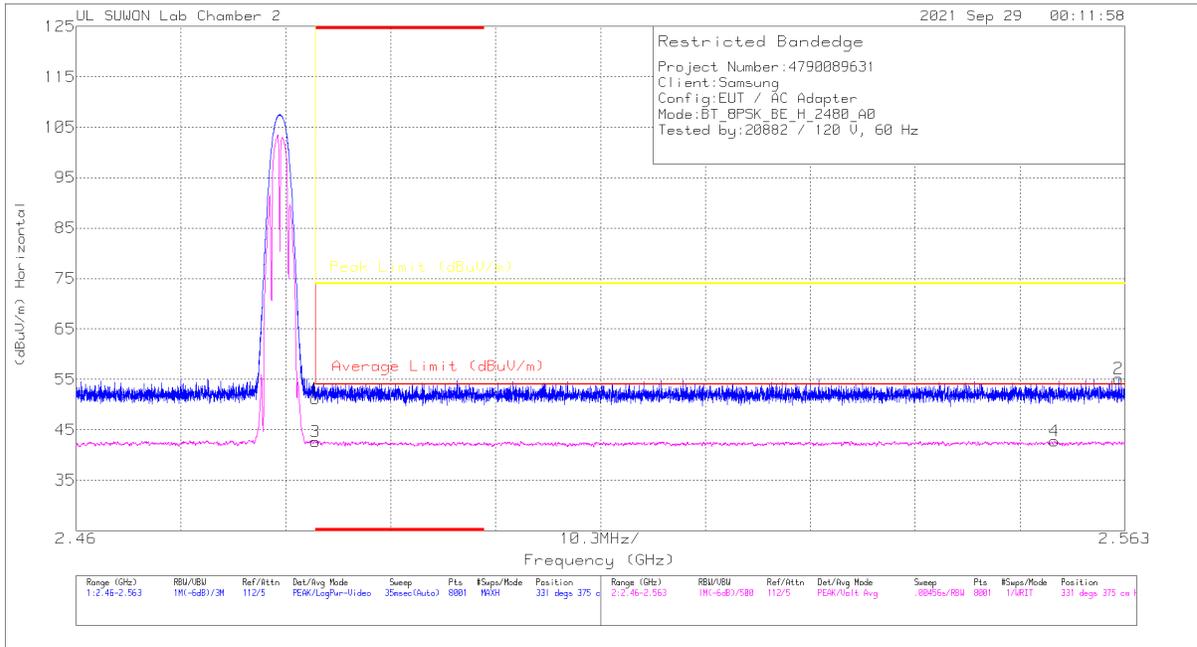
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

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

BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT

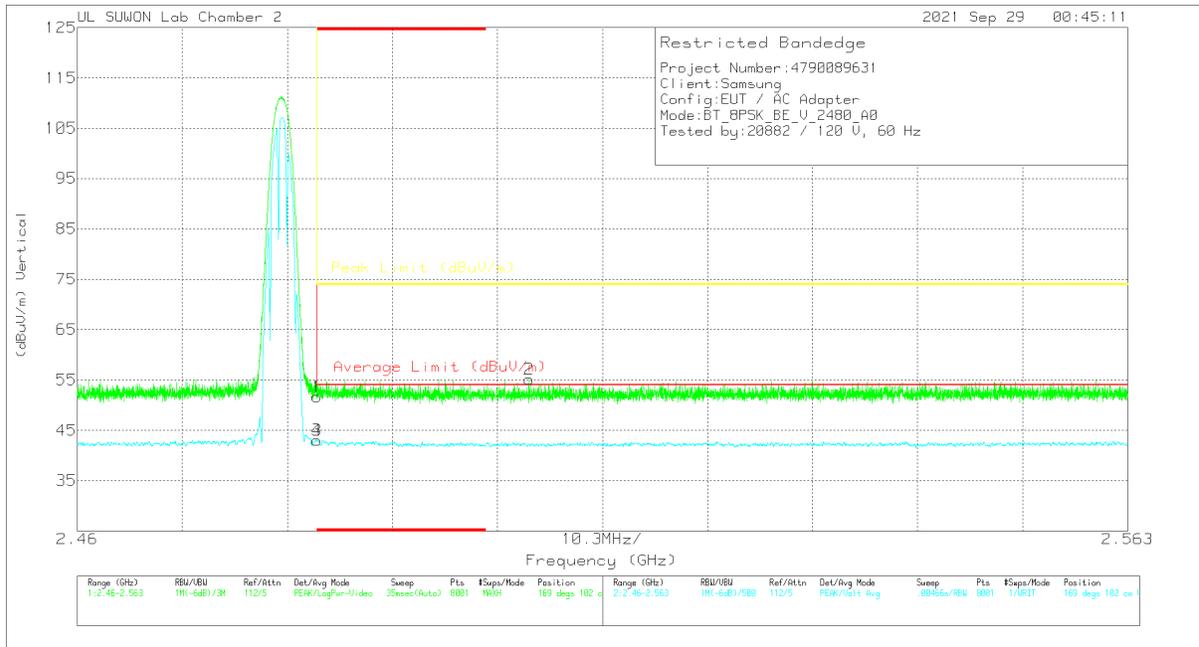


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	39.57	Pk	32	-20.4	51.17	-	-	74	-22.83	331	375	H
2	2.56241	43.23	Pk	32.2	-20.3	55.13	-	-	74	-18.87	331	375	H
3	* 2.48351	31.04	VA1T	32	-20.4	42.64	54	-11.36	-	-	331	375	H
4	2.55609	30.92	VA1T	32.2	-20.3	42.82	54	-11.18	-	-	331	375	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



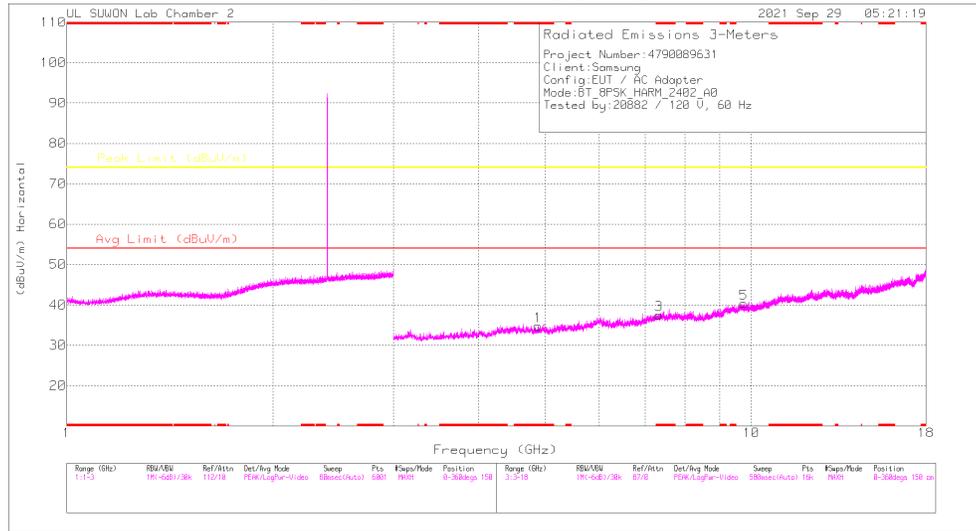
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	40.11	Pk	32	-20.4	51.71	-	-	74	-22.29	169	102	V
2	2.50432	43.44	Pk	32.1	-20.4	55.14	-	-	74	-18.86	169	102	V
3	* 2.48351	31.38	VA1T	32	-20.4	42.98	54	-11.02	-	-	169	102	V
4	* 2.48352	31.39	VA1T	32	-20.4	42.99	54	-11.01	-	-	169	102	V

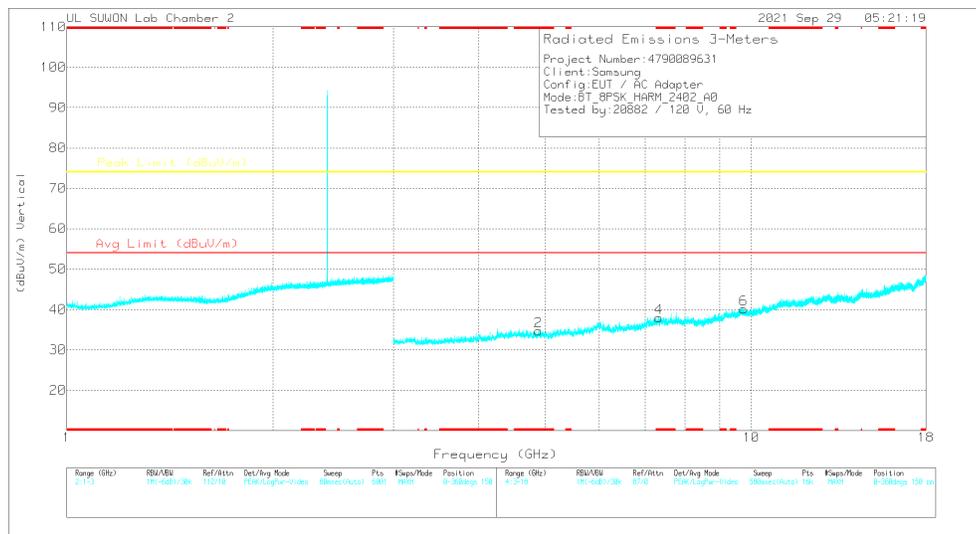
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



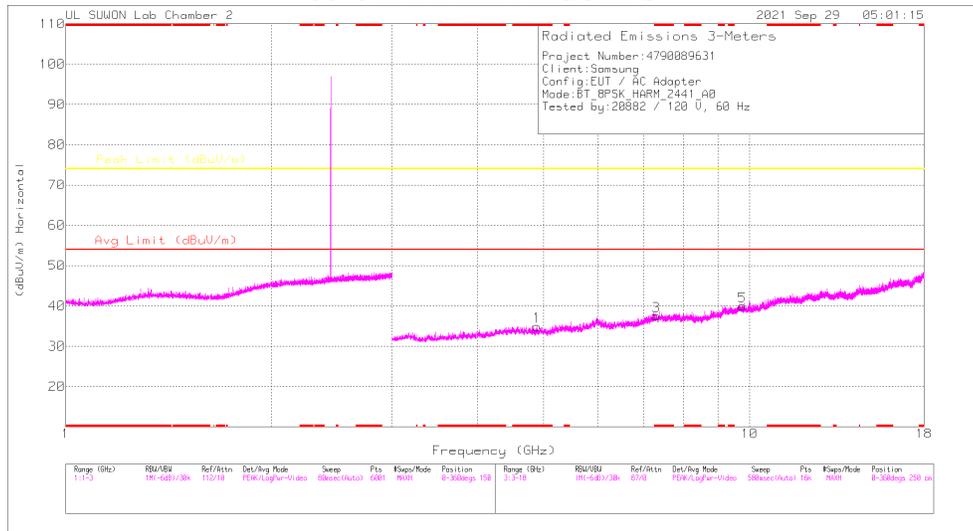
VERTICAL

RADIATED EMISSIONS

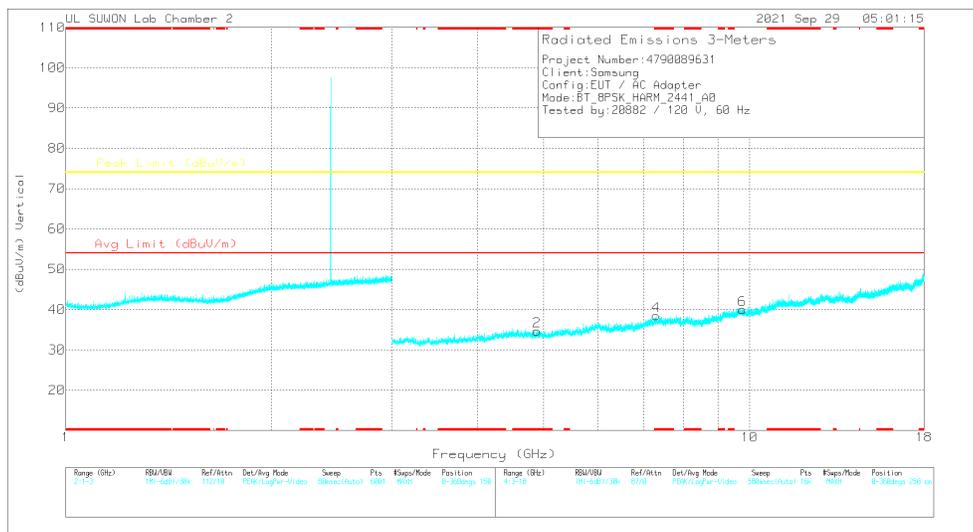
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.87853	34.4	PKFH	34.1	-27.8	40.7	-	-	74	-33.3	360	100	H
* 4.87619	34.83	PKFH	34.1	-27.9	41.03	-	-	74	-32.97	360	100	V
* 7.3278	33.6	PKFH	36.1	-24.8	44.9	-	-	74	-29.1	360	100	H
* 7.32609	35.12	PKFH	36.1	-24.9	46.32	-	-	74	-27.68	360	100	V
9.74431	30.71	PKFH	37.2	-21.4	46.51	-	-	74	-27.49	360	100	H
9.74437	30.96	PKFH	37.2	-21.4	46.76	-	-	74	-27.24	360	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

39 CHANNEL RESULTS



HORIZONTAL



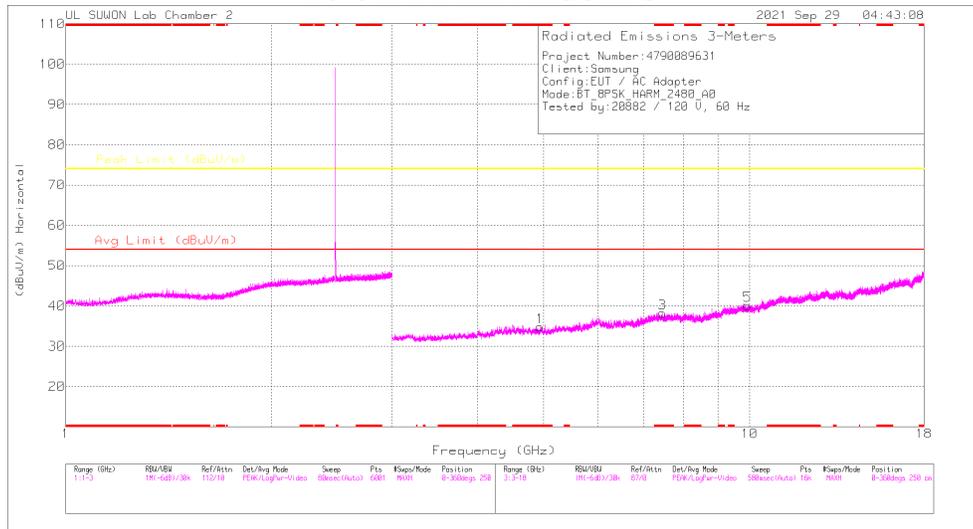
VERTICAL

RADIATED EMISSIONS

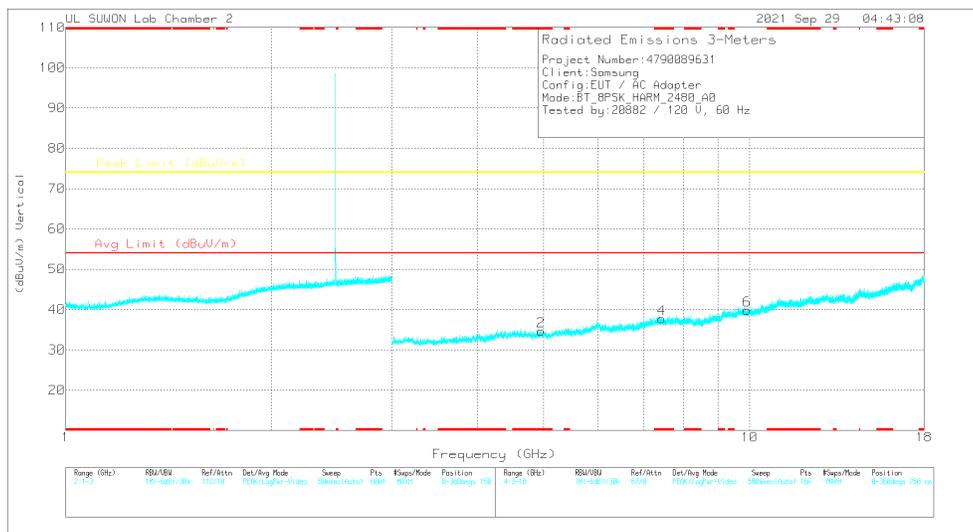
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.88642	34.83	PKFH	34.1	-27.8	41.13	-	-	74	-32.87	360	100	H
* 4.88622	36.18	PKFH	34.1	-27.8	42.48	-	-	74	-31.52	360	100	V
* 7.30143	33.63	PKFH	36.2	-25.1	44.73	-	-	74	-29.27	360	100	H
* 7.30309	33.74	PKFH	36.2	-25.1	44.84	-	-	74	-29.16	360	100	V
9.76288	30.35	PKFH	37.2	-21.5	46.05	-	-	74	-27.95	360	100	H
9.76411	31.11	PKFH	37.2	-21.5	46.81	-	-	74	-27.19	360	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

78 CHANNEL RESULTS



HORIZONTAL



VERTICAL

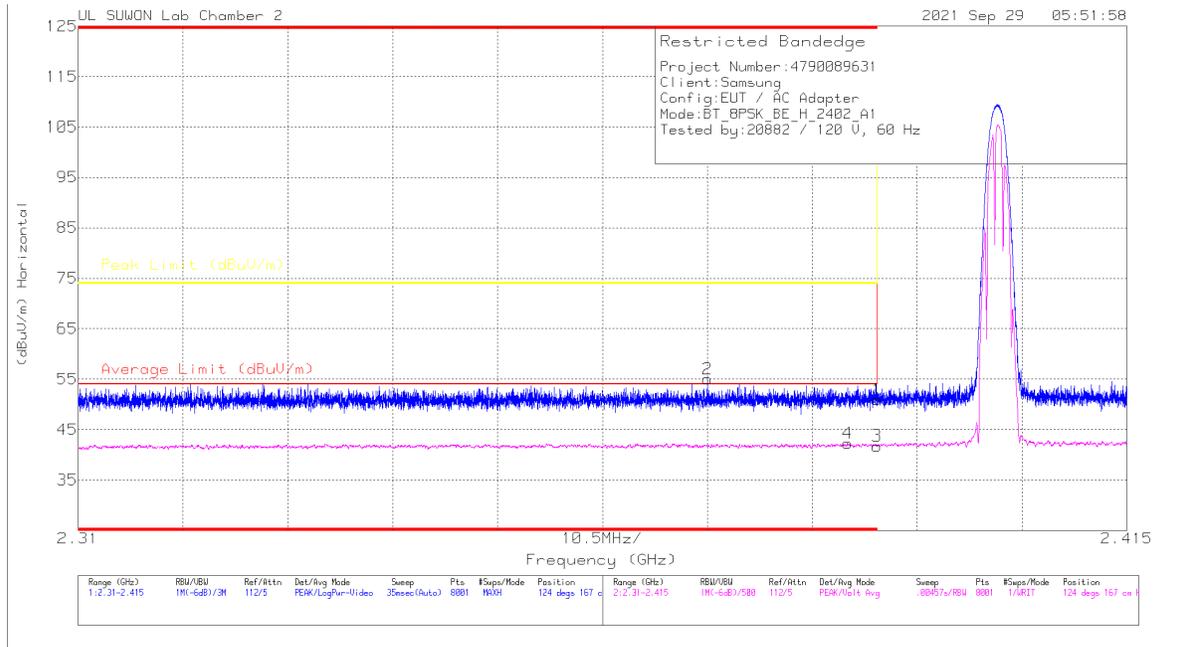
RADIATED EMISSIONS

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
* 4.93628	34.68	PKFH	34.1	-27.2	41.58	-	-	74	-32.42	360	100	H
* 4.9747	34.13	PKFH	34.2	-27.2	41.13	-	-	74	-32.87	360	100	V
* 7.45271	32.75	PKFH	36	-24.1	44.65	-	-	74	-29.35	360	100	H
* 7.45088	33.8	PKFH	36	-24.1	45.7	-	-	74	-28.3	360	100	V
9.93006	31.02	PKFH	37.4	-21.2	47.22	-	-	74	-26.78	360	100	H
9.93202	30.86	PKFH	37.4	-21.2	47.06	-	-	74	-26.94	360	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

ANT2
BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT

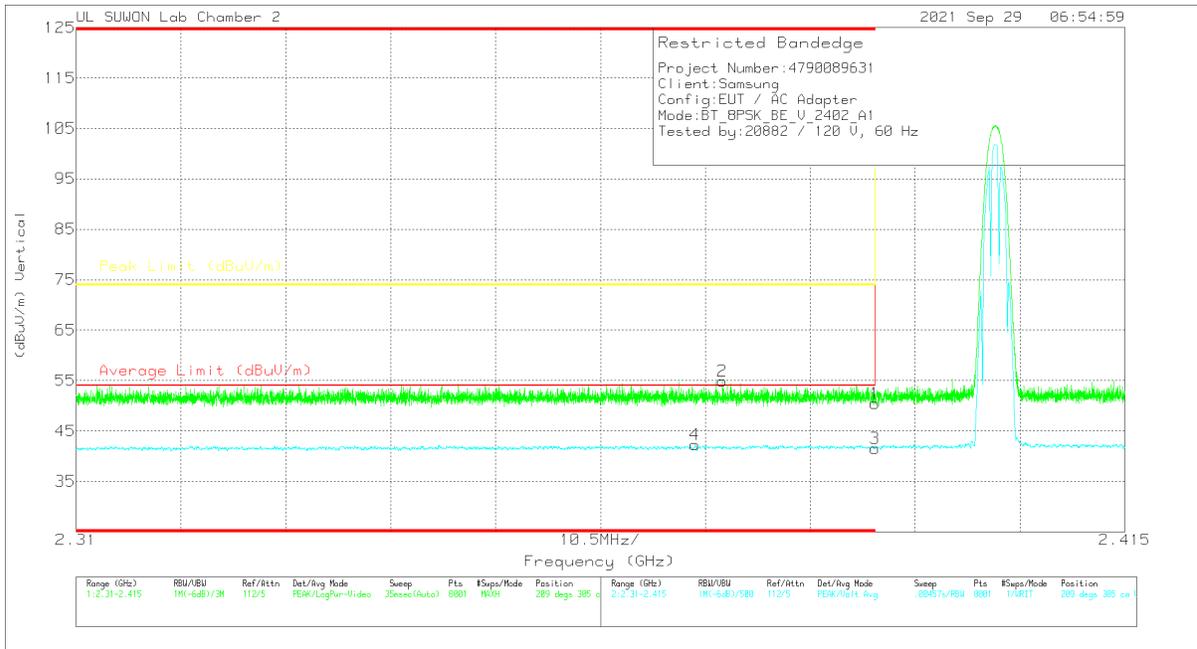


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	39.67	Pk	31.9	-20.6	50.97	-	-	74	-23.03	124	167	H
2	* 2.37299	43.78	Pk	31.9	-20.6	55.08	-	-	74	-18.92	124	167	H
3	* 2.39	30.43	VA1T	31.9	-20.6	41.73	54	-12.27	-	-	124	167	H
4	* 2.38702	30.9	VA1T	31.9	-20.5	42.3	54	-11.7	-	-	124	167	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



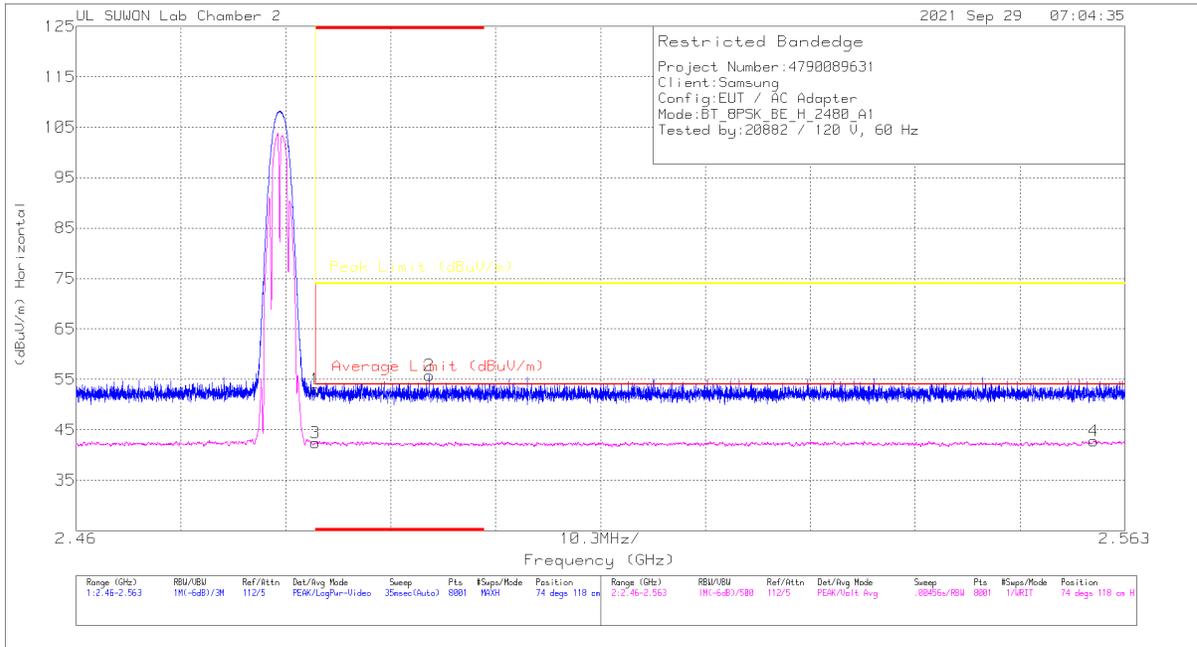
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	39.15	Pk	31.9	-20.6	50.45	-	-	74	-23.55	209	305	V
2	* 2.37468	43.59	Pk	31.9	-20.6	54.89	-	-	74	-19.11	209	305	V
3	* 2.39	30.28	VA1T	31.9	-20.6	41.58	54	-12.42	-	-	209	305	V
4	* 2.37198	31.09	VA1T	31.8	-20.6	42.29	54	-11.71	-	-	209	305	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

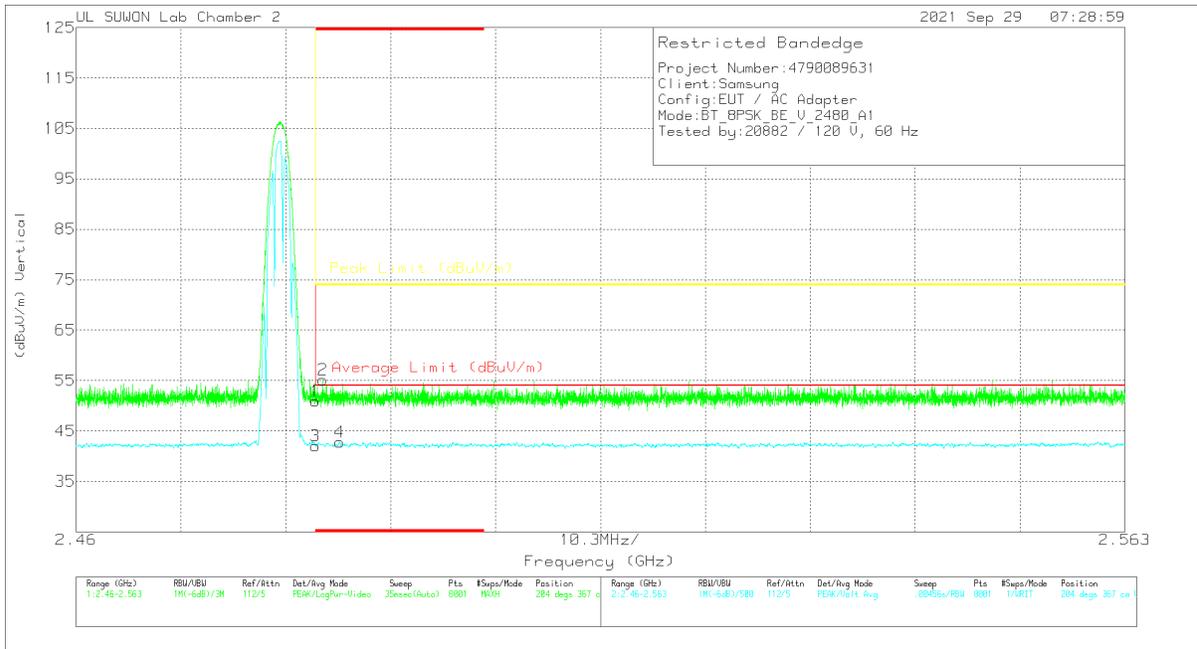


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	41.44	Pk	32	-20.4	53.04	-	-	74	-20.96	74	118	H
2	* 2.4947	44.02	Pk	32.1	-20.4	55.72	-	-	74	-18.28	74	118	H
3	* 2.48351	30.8	VA1T	32	-20.4	42.4	54	-11.6	-	-	74	118	H
4	2.55995	30.81	VA1T	32.2	-20.2	42.81	54	-11.19	-	-	74	118	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



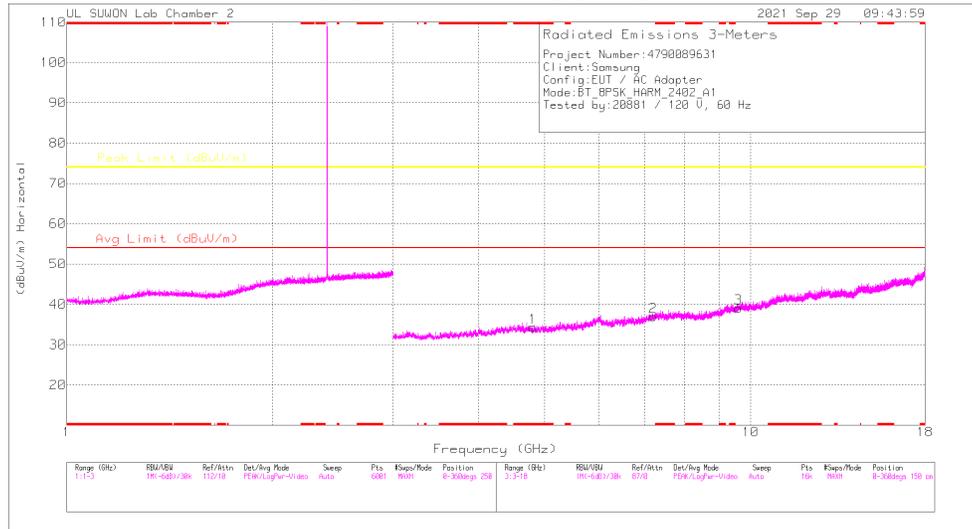
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	* 2.48351	39.3	Pk	32	-20.4	50.9	-	-	74	-23.1	204	367	V
2	* 2.48421	43.59	Pk	32	-20.4	55.19	-	-	74	-18.81	204	367	V
3	* 2.48351	30.39	VA1T	32	-20.4	41.99	54	-12.01	-	-	204	367	V
4	* 2.48587	31.32	VA1T	32	-20.5	42.82	54	-11.18	-	-	204	367	V

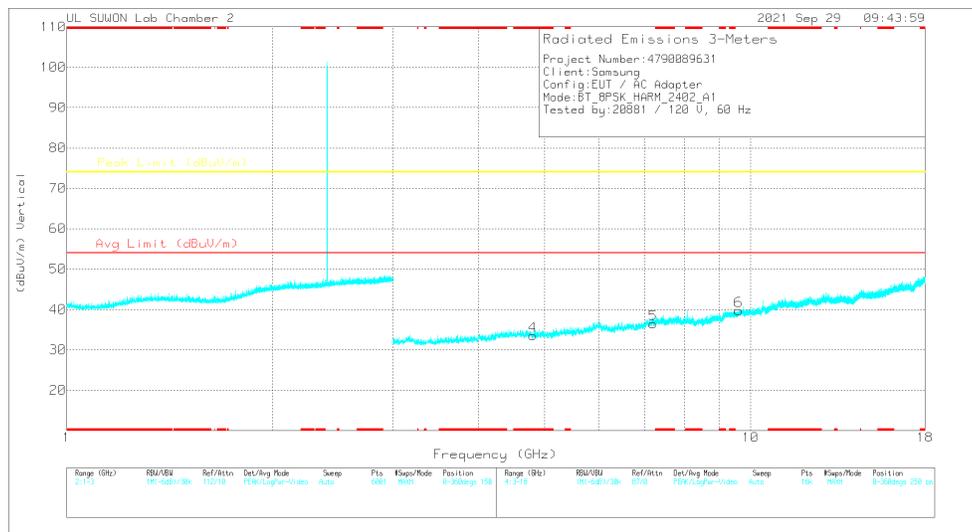
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

HARMONICS AND SPURIOUS EMISSIONS

0 CHANNEL RESULTS



HORIZONTAL



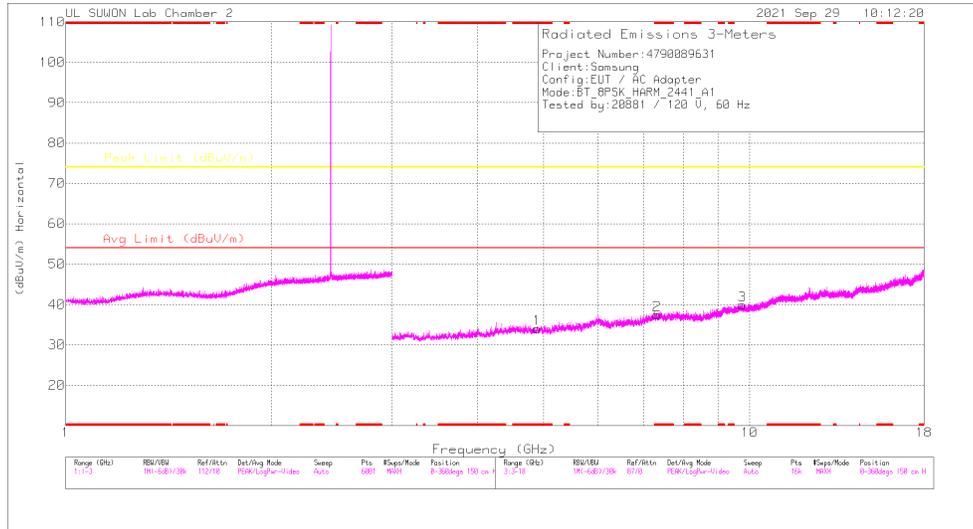
VERTICAL

RADIATED EMISSIONS

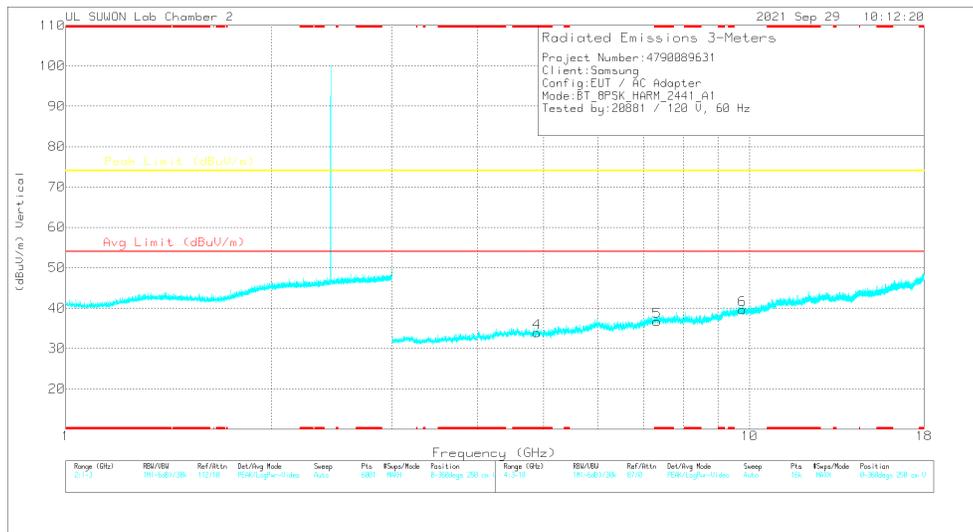
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80442	34.95	PKFH	34.1	-28	41.05	-	-	74	-32.95	360	100	H
* 4.80638	34.75	PKFH	34.1	-28	40.85	-	-	74	-33.15	360	100	V
7.20798	33.77	PKFH	36.2	-25.3	44.67	-	-	74	-29.33	360	100	H
7.20879	33.19	PKFH	36.2	-25.3	44.09	-	-	74	-29.91	360	100	V
9.60553	31.73	PKFH	37	-21.7	47.03	-	-	74	-26.97	360	100	H
9.60698	32.31	PKFH	37	-21.7	47.61	-	-	74	-26.39	360	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

39 CHANNEL RESULTS



HORIZONTAL



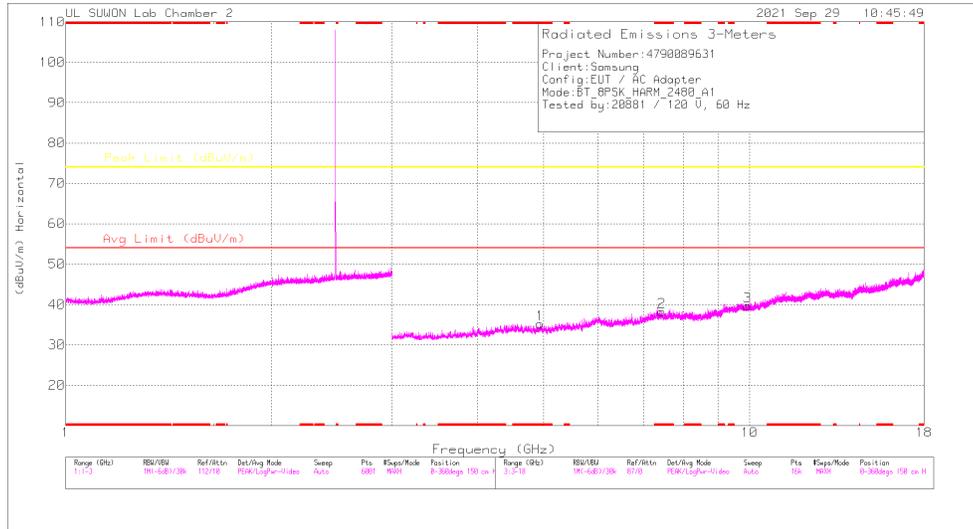
VERTICAL

RADIATED EMISSIONS

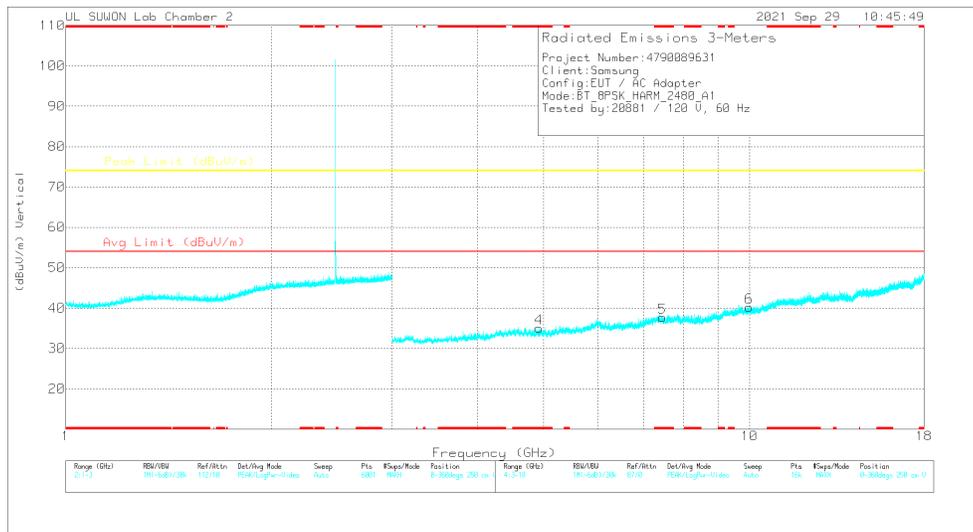
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.88707	34.76	PKFH	34.1	-27.8	41.06	-	-	74	-32.94	0	100	H
* 4.88596	35.48	PKFH	34.1	-27.8	41.78	-	-	74	-32.22	0	100	V
* 7.32631	33.64	PKFH	36.1	-24.9	44.84	-	-	74	-29.16	0	100	H
* 7.32512	33.18	PKFH	36.1	-24.9	44.38	-	-	74	-29.62	0	100	V
9.76561	31.56	PKFH	37.2	-21.5	47.26	-	-	74	-26.74	0	100	H
9.76278	30.71	PKFH	37.2	-21.5	46.41	-	-	74	-27.59	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

78 CHANNEL RESULTS



HORIZONTAL



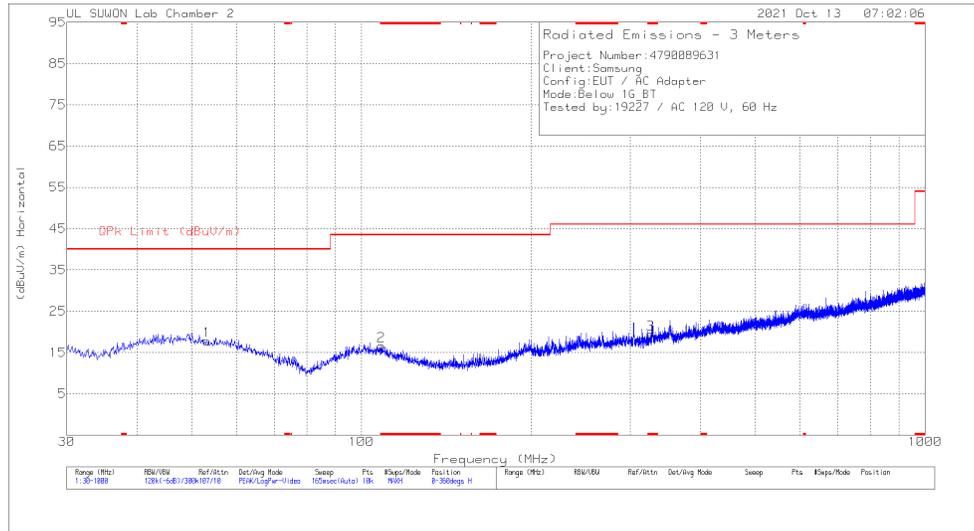
VERTICAL

RADIATED EMISSIONS

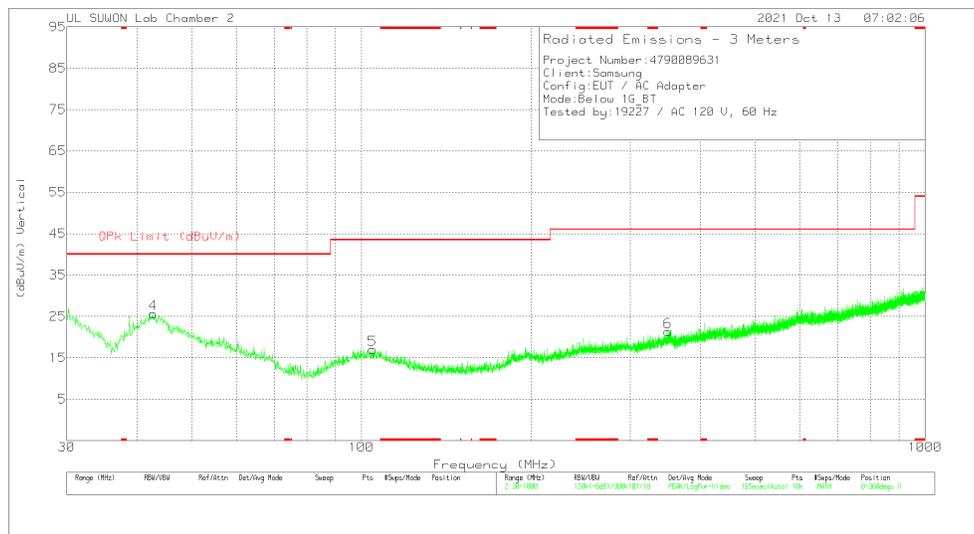
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	3GHz_HP(dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.94097	34.6	PKFH	34.1	-27.3	41.4	-	-	74	-32.6	0	100	H
* 4.92473	34.51	PKFH	34.1	-27.3	41.31	-	-	74	-32.69	0	100	V
* 7.4455	33.2	PKFH	36	-24.1	45.1	-	-	74	-28.9	0	100	H
* 7.44701	33.36	PKFH	36	-24.1	45.26	-	-	74	-28.74	0	100	V
9.91804	30.97	PKFH	37.4	-21.3	47.07	-	-	74	-26.93	0	100	H
9.98388	30.72	PKFH	37.4	-20.9	47.22	-	-	74	-26.78	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

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



HORIZONTAL



VERTICAL

Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	53.183	29.95	Pk	19.6	-31.7	17.85	40	-22.15	0-360	100	H
2	* 108.57	30.77	Pk	17.2	-31.3	16.67	43.52	-26.85	0-360	100	H
3	* 325.656	29.91	Pk	19.7	-30.2	19.41	46.02	-26.61	0-360	100	H
4	42.707	38.19	Pk	19.2	-31.7	25.69	40	-14.31	0-360	100	V
5	104.593	30.72	Pk	17.6	-31.3	17.02	43.52	-26.5	0-360	200	V
6	350.197	30.46	Pk	21	-30.1	21.36	46.02	-24.66	0-360	100	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)

RSS-Gen 8.8

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 C63.4.

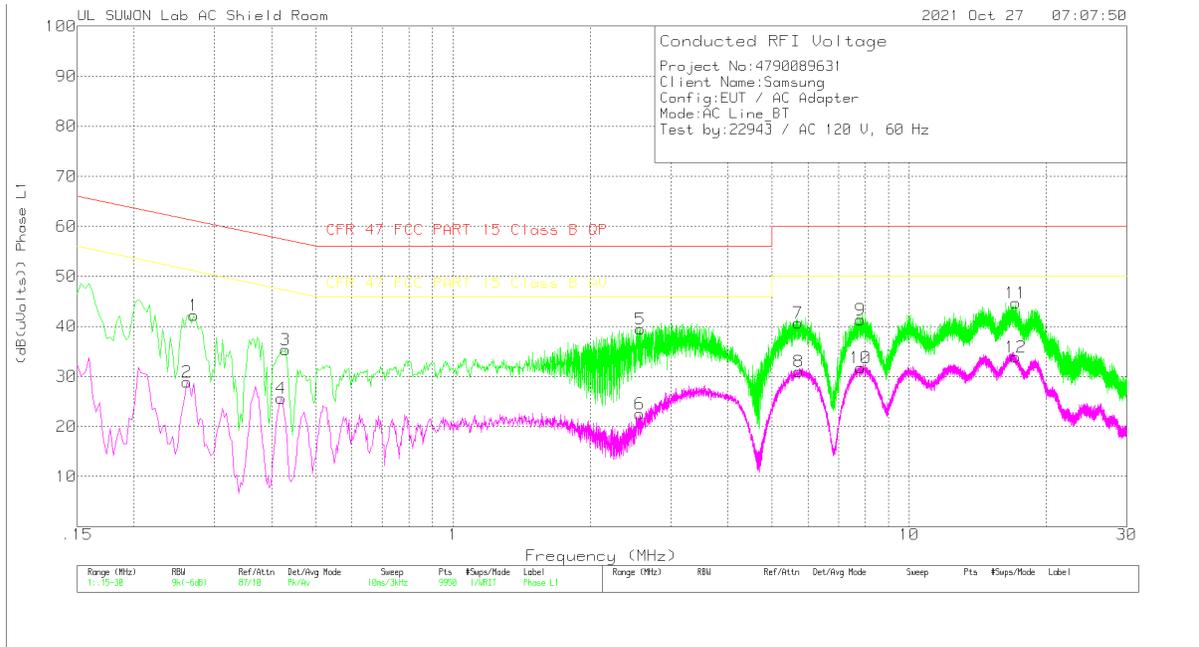
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1.1. AC Power Line

LINE 1 RESULTS



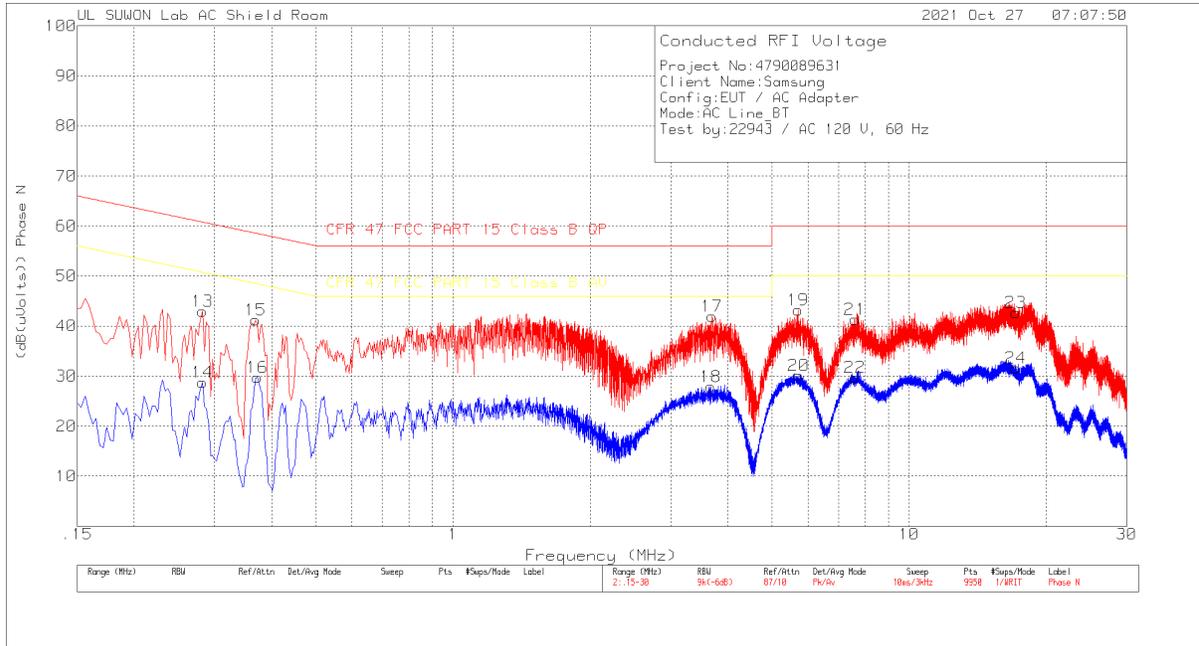
Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(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	.27	32.45	Pk	9.6	.2	42.25	61.12	-18.87	-	-
2	.261	19.1	Av	9.6	.2	28.9	-	-	51.4	-22.5
3	.429	25.39	Pk	9.8	.2	35.39	57.27	-21.88	-	-
4	.42	15.64	Av	9.8	.2	25.64	-	-	47.45	-21.81
5	2.577	29.5	Pk	9.7	.3	39.5	56	-16.5	-	-
6	2.562	12.52	Av	9.7	.3	22.52	-	-	46	-23.48
7	5.7	30.67	Pk	9.7	.3	40.67	60	-19.33	-	-
8	5.724	20.99	Av	9.7	.3	30.99	-	-	50	-19.01
9	7.821	31.28	Pk	9.8	.3	41.38	60	-18.62	-	-
10	7.812	21.58	Av	9.8	.3	31.68	-	-	50	-18.32
11	17.139	34.17	Pk	10.1	.4	44.67	60	-15.33	-	-
12	17.139	23.38	Av	10.1	.4	33.88	-	-	50	-16.12

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N[dB]	CABLELOS S(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	.282	33.1	Pk	9.7	.2	43	60.76	-17.76	-	-
14	.282	18.8	Av	9.7	.2	28.7	-	-	50.76	-22.06
15	.369	31.22	Pk	9.8	.2	41.22	58.52	-17.3	-	-
16	.372	19.7	Av	9.8	.2	29.7	-	-	48.46	-18.76
17	3.693	31.9	Pk	9.7	.3	41.9	56	-14.1	-	-
18	3.669	17.9	Av	9.7	.3	27.9	-	-	46	-18.1
19	5.706	33.22	Pk	9.7	.3	43.22	60	-16.78	-	-
20	5.721	20.1	Av	9.7	.3	30.1	-	-	50	-19.9
21	7.614	31.24	Pk	9.8	.3	41.34	60	-18.66	-	-
22	7.599	19.68	Av	9.8	.3	29.78	-	-	50	-20.22
23	17.145	32.21	Pk	10.1	.4	42.71	60	-17.29	-	-
24	17.133	21.08	Av	10.1	.4	31.58	-	-	50	-18.42

Pk - Peak detector
 Av - Average detection

END OF TEST REPORT