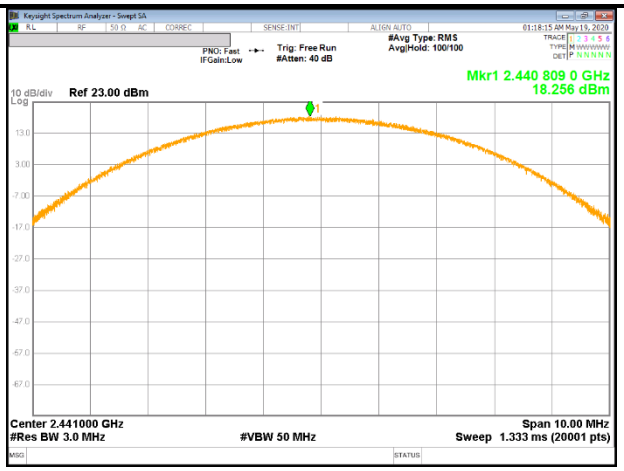
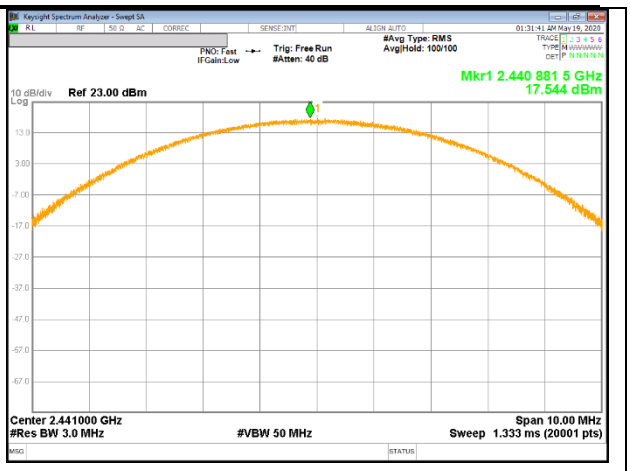
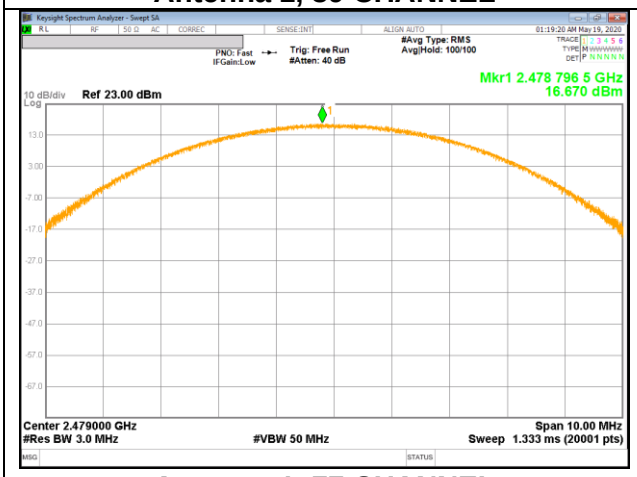


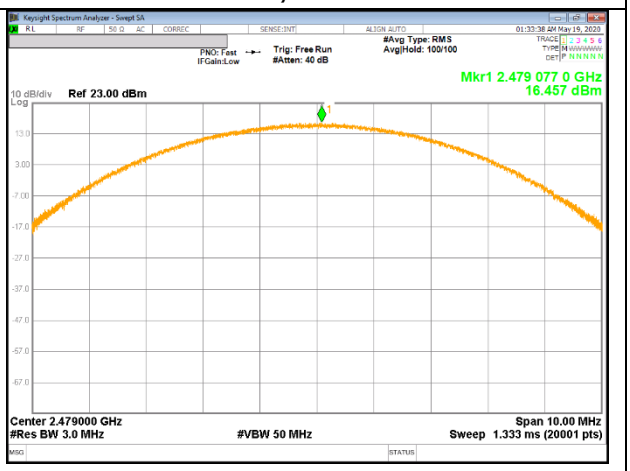
Antenna 1, 39 CHANNEL



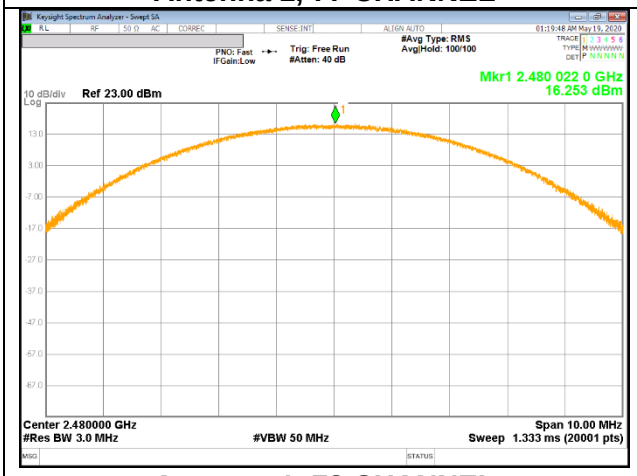
Antenna 2, 39 CHANNEL



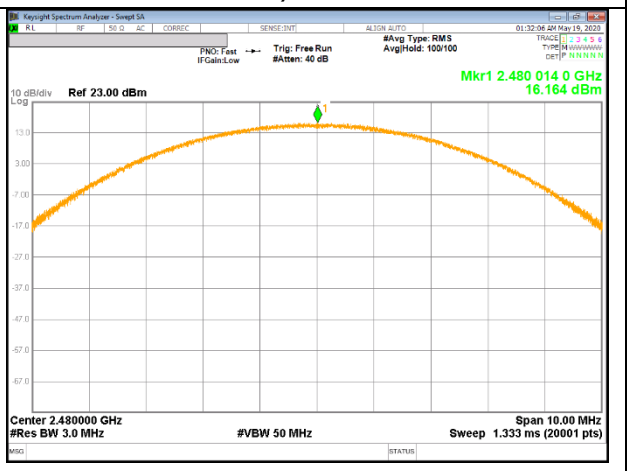
Antenna 1, 77 CHANNEL



Antenna 2, 77 CHANNEL



Antenna 1, 78 CHANNEL



Antenna 2, 78 CHANNEL

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9.7. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.
The cable assembly insertion loss was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.7.1. BASIC DATA RATE GFSK MODULATION

Chain	Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Antenna 1	0	2 402	14.377	27.397
	39	2 441	**15.459**	**35.148**
	77	2 479	14.031	25.299
	78	2 480	13.568	22.740
Antenna 2	0	2 402	13.065	20.253
	39	2 441	**14.551**	**28.517**
	77	2 479	13.604	22.930
	78	2 480	13.407	21.913

9.7.2. ENHANCED DATA RATE PI/4-DQPSK MODULATION

Chain	Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Antenna 1	0	2 402	14.452	27.874
	39	2 441	**15.420**	**34.834**
	77	2 479	13.971	24.952
	78	2 480	13.481	22.289
Antenna 2	0	2 402	13.216	20.970
	39	2 441	**14.610**	**28.907**
	77	2 479	13.655	23.201
	78	2 480	13.428	22.019

9.7.3. ENHANCED DATA RATE 8PSK MODULATION

Chain	Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Antenna 1	0	2 402	14.484	28.080
	39	2 441	**15.451**	**35.083**
	77	2 479	14.004	25.142
	78	2 480	13.540	22.594
Antenna 2	0	2 402	13.212	20.951
	39	2 441	**14.616**	**28.947**
	77	2 479	13.676	23.313
	78	2 480	13.446	22.111

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9.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Limit = -20 dBc

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer.The resolution bandwidth is set to 100 kHz.The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

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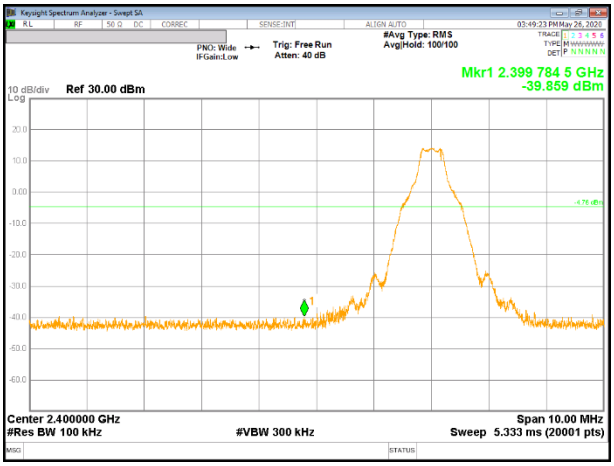
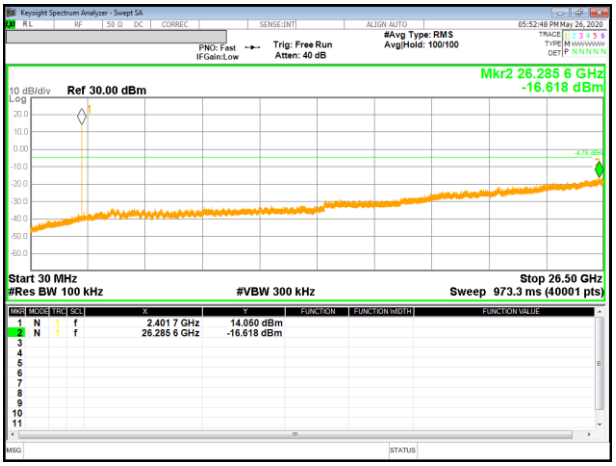
9.8.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

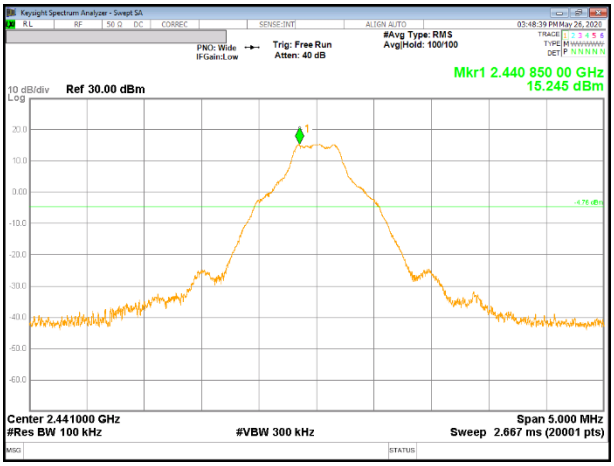
SPURIOUS EMISSIONS, NON-HOPPING(Antenna 1)



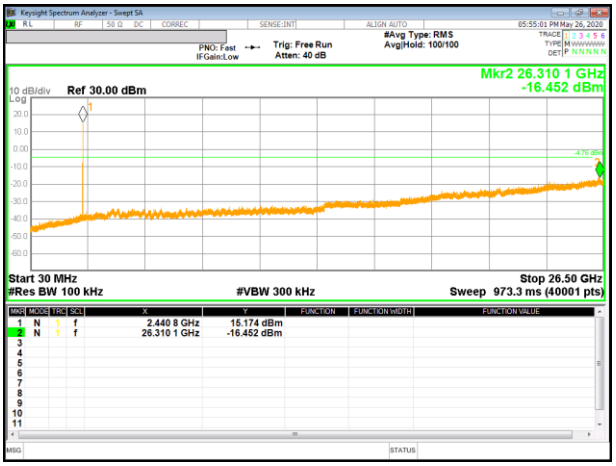
0 CHANNEL BANDEDGE



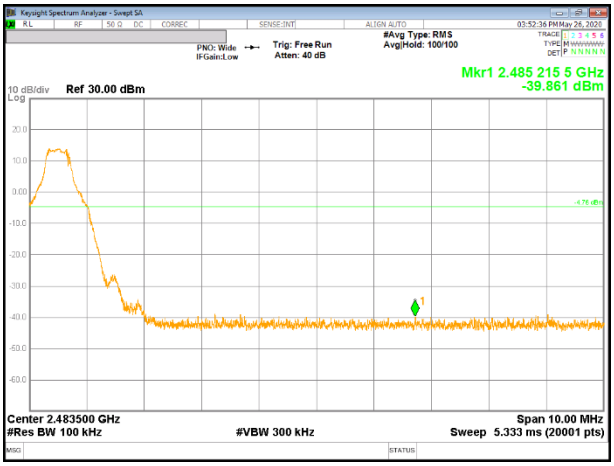
OUT-OF-BAND 0 CHANNEL



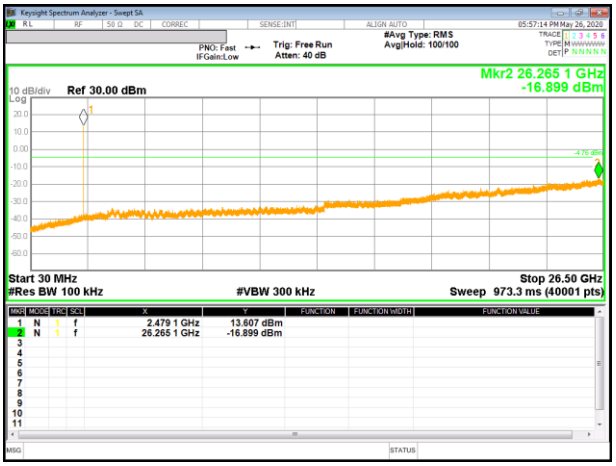
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 39 CHANNEL



77 CHANNEL BANDEDGE



OUT-OF-BAND 77 CHANNEL

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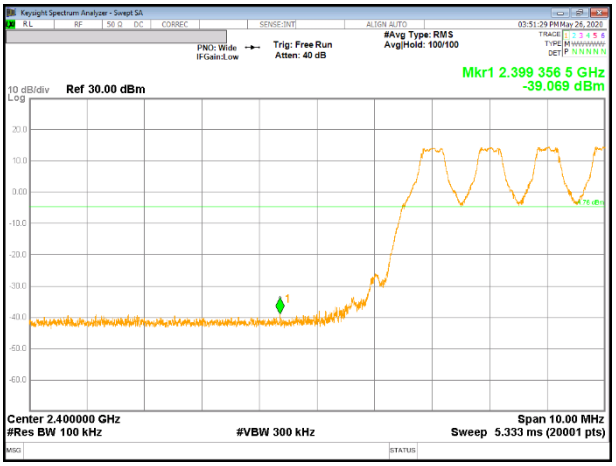
78 CHANNEL BANDEDGE

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE

HIGH BANDEDGE

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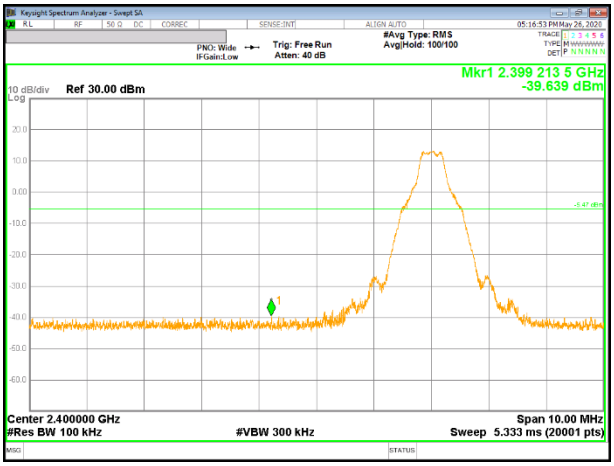
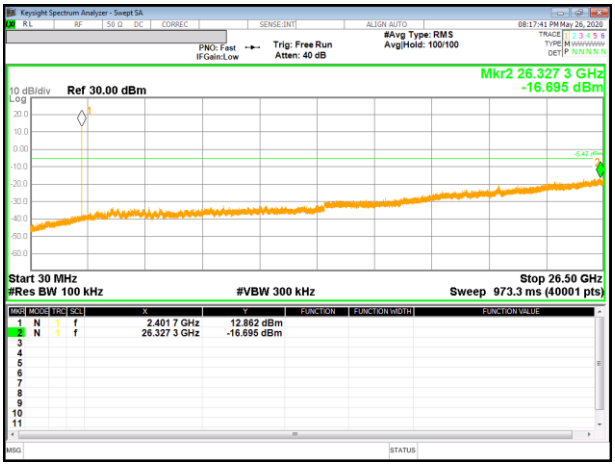
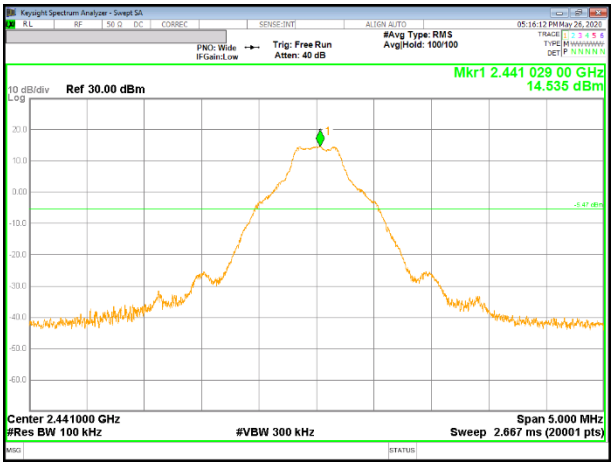
SPURIOUS EMISSIONS, NON-HOPPING(Antenna 2)



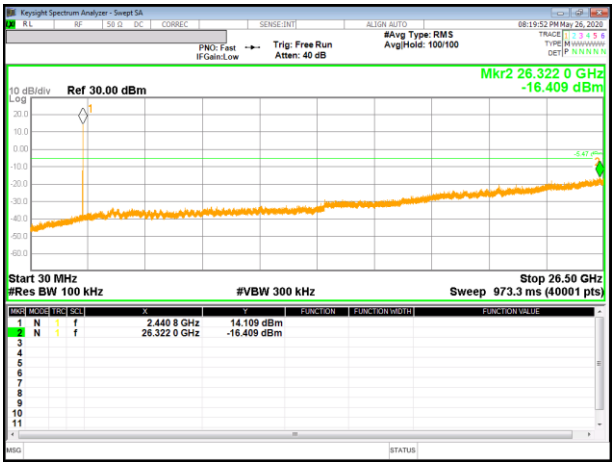
0 CHANNEL BANDEDGE



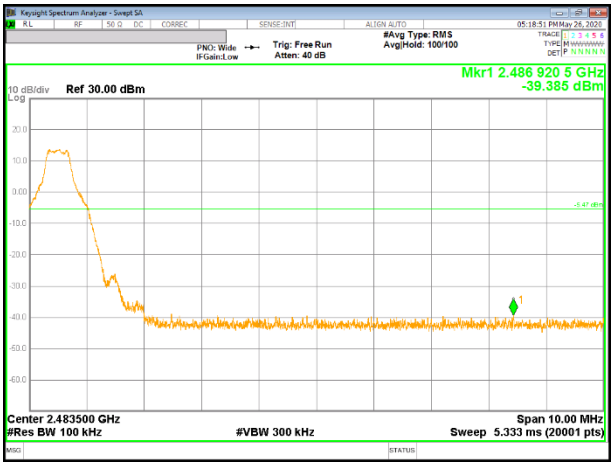
OUT-OF-BAND 0 CHANNEL



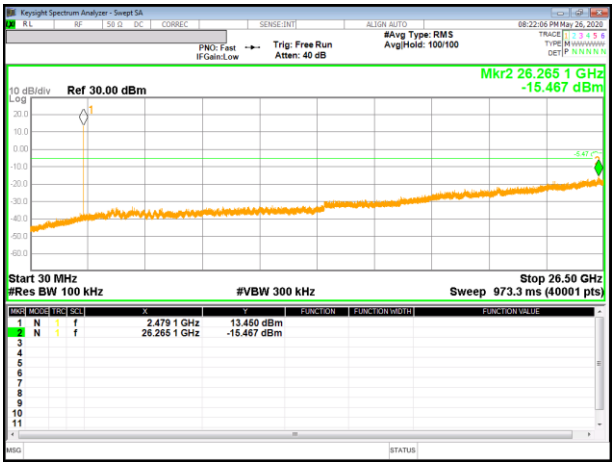
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 39 CHANNEL



77 CHANNEL BANDEDGE



OUT-OF-BAND 77 CHANNEL

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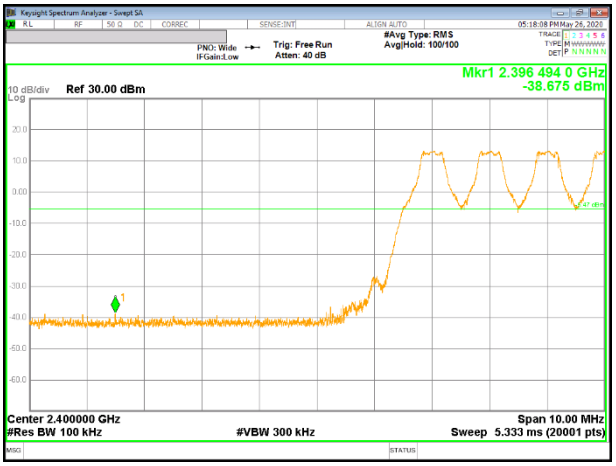
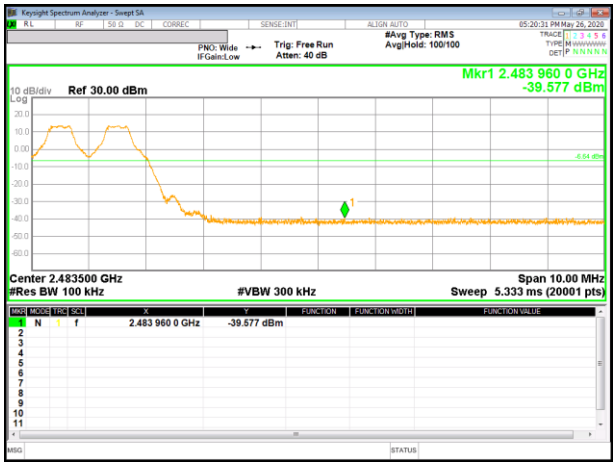
78 CHANNEL BANDEDGE

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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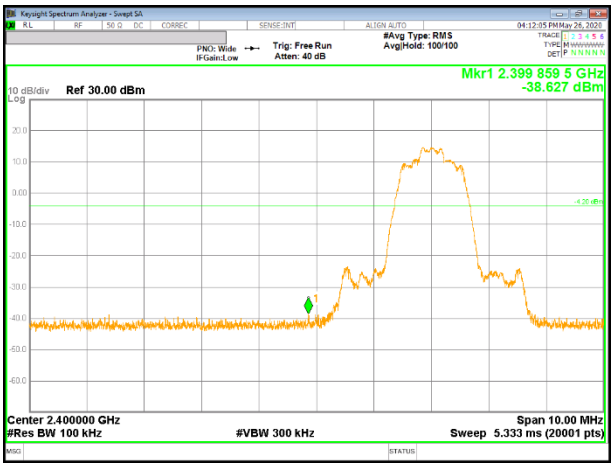
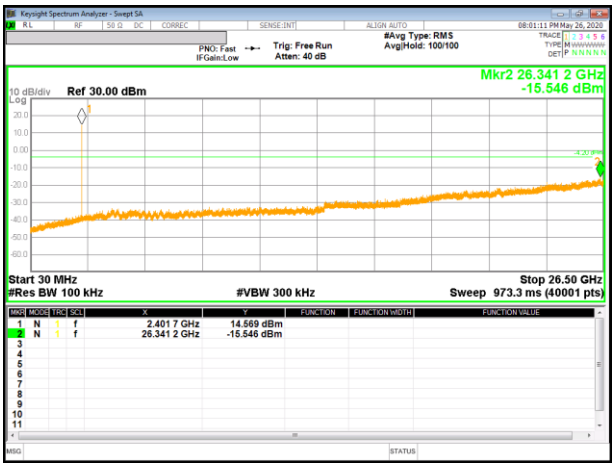
9.8.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

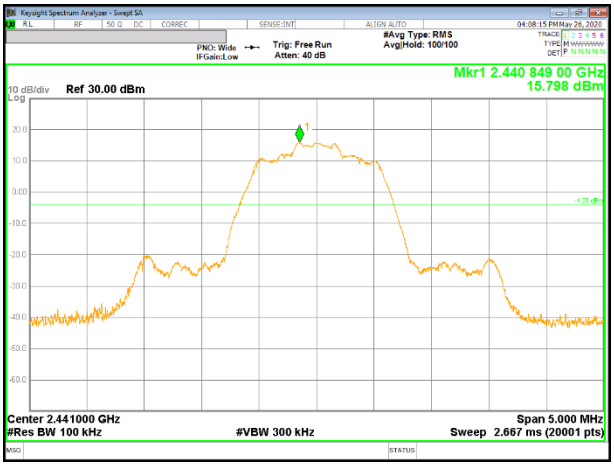
SPURIOUS EMISSIONS, NON-HOPPING(Antenna 1)



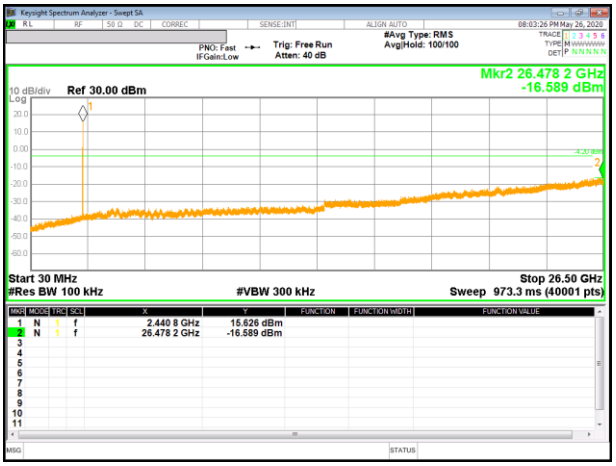
0 CHANNEL BANDEDGE



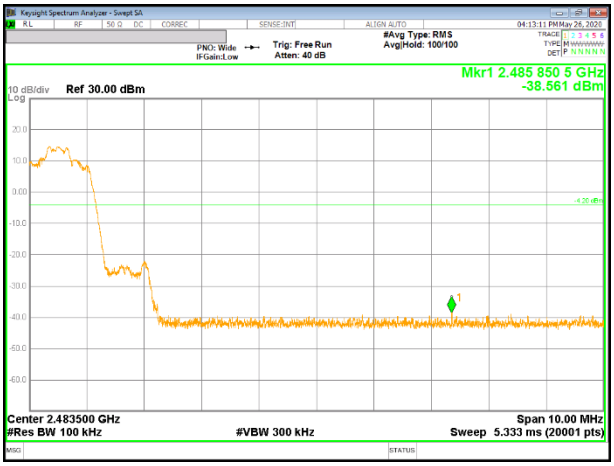
OUT-OF-BAND 0 CHANNEL



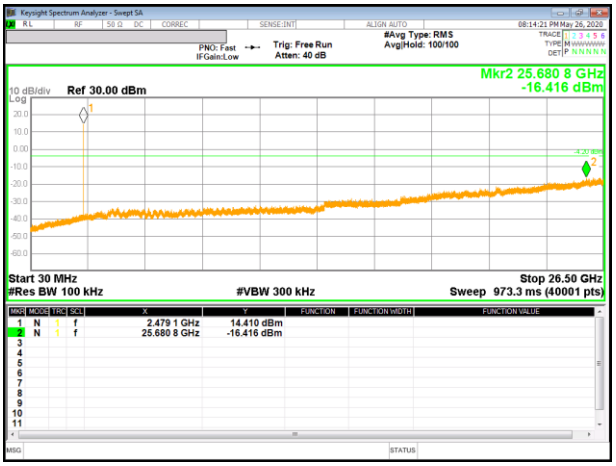
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 39 CHANNEL



77 CHANNEL BANDEDGE



OUT-OF-BAND 77 CHANNEL

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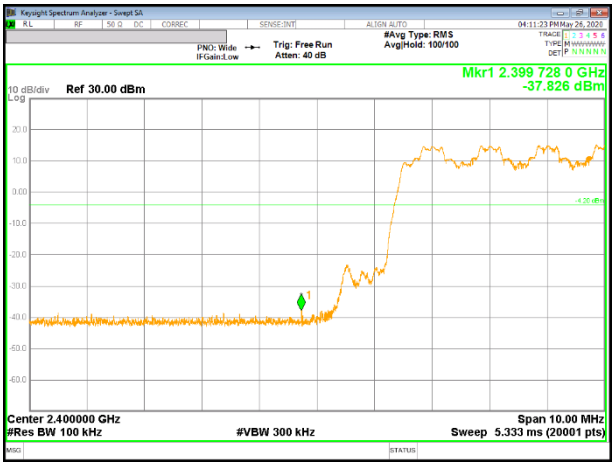
78 CHANNEL BANDEDGE

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE

HIGH BANDEDGE

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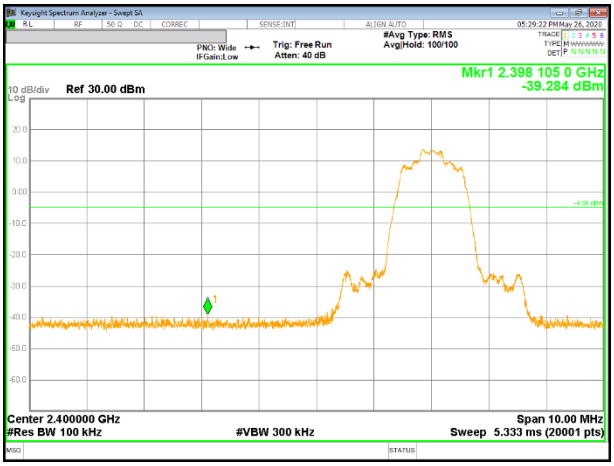
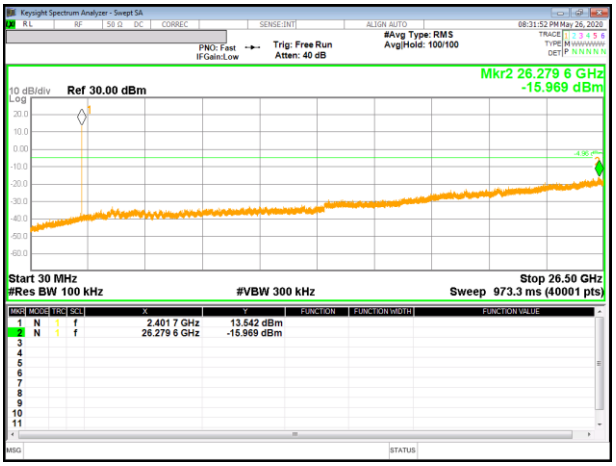
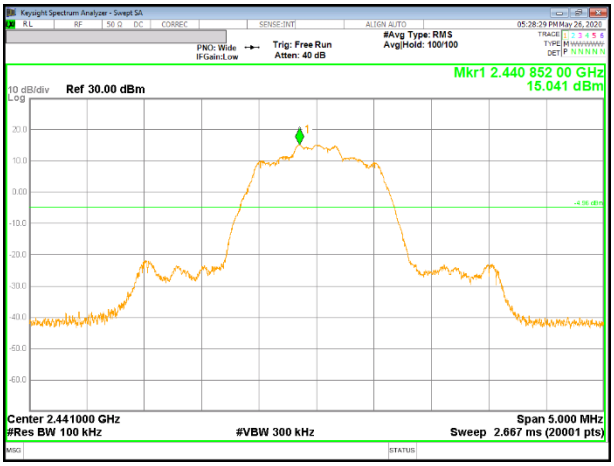
SPURIOUS EMISSIONS, NON-HOPPING(Antenna 2)



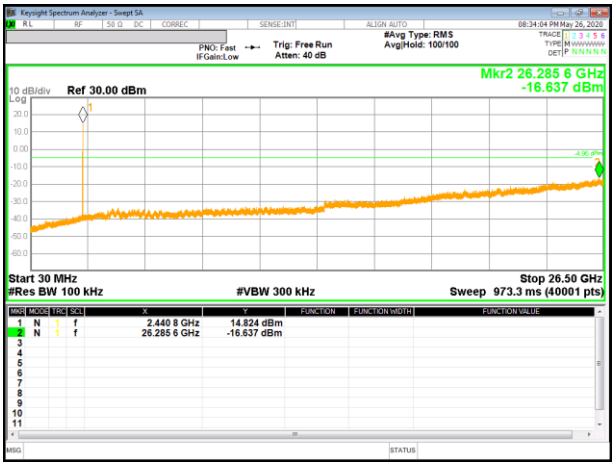
0 CHANNEL BANDEDGE



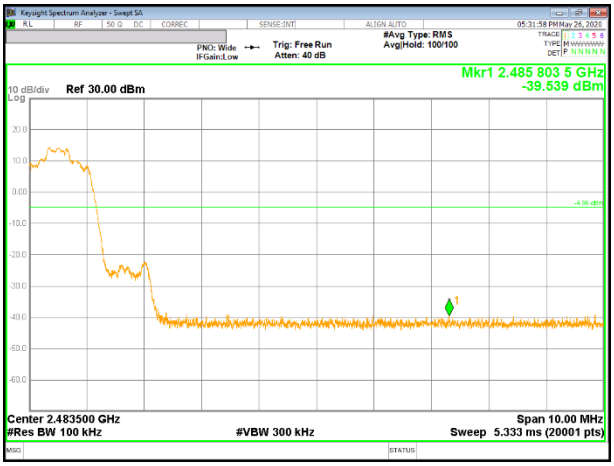
OUT-OF-BAND 0 CHANNEL



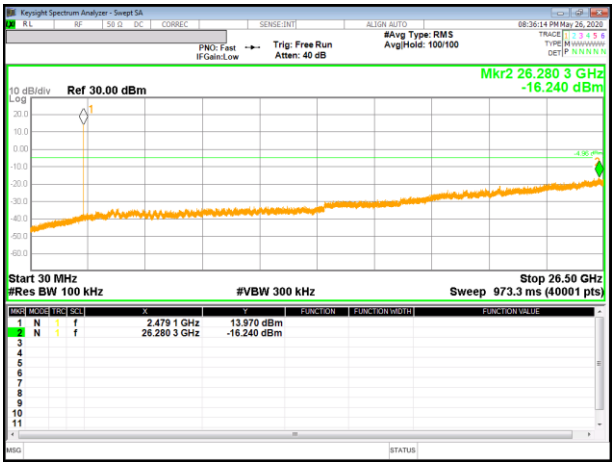
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 39 CHANNEL



77 CHANNEL BANDEDGE



OUT-OF-BAND 77 CHANNEL

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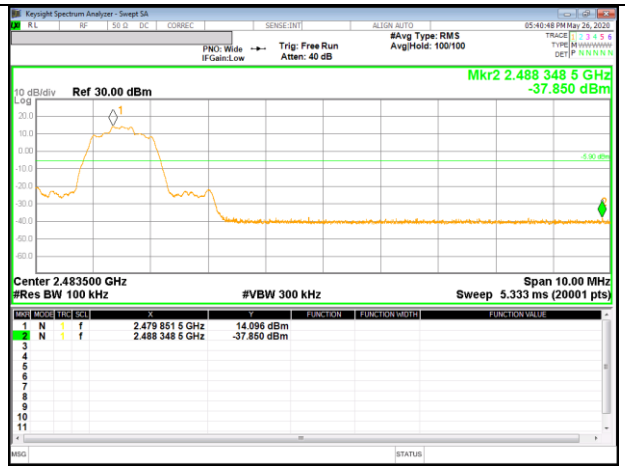
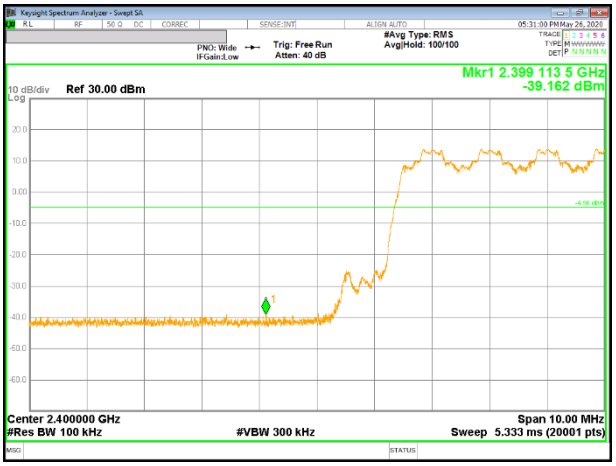
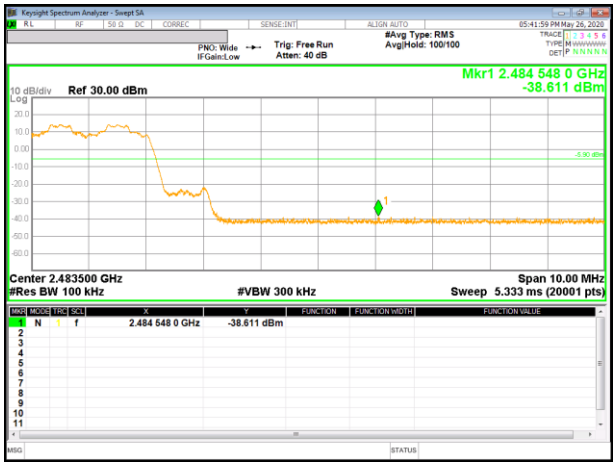


78 CHANNEL BANDEDGE

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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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.

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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.

GFSK = 1/T = 1 / 0.002882S = 347Hz.

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.

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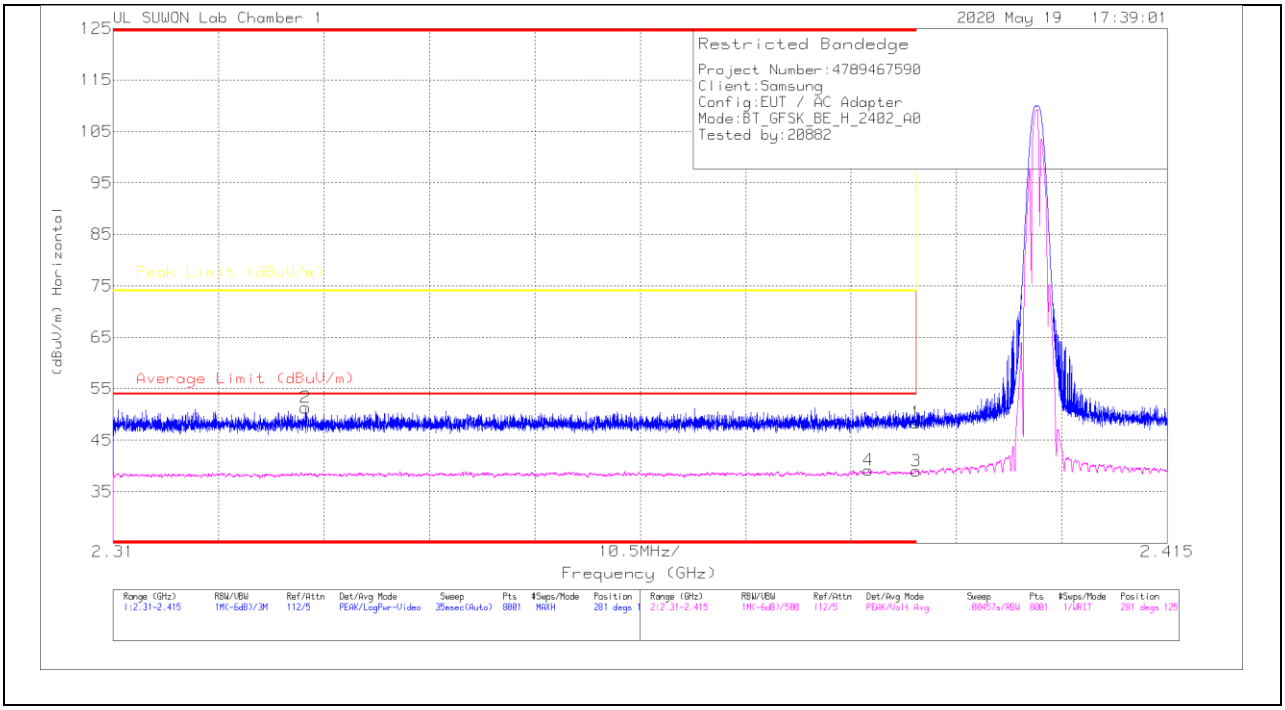
10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

Antenna 1 BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.15	Pk	31.7	-25.5	48.35	-	-	74	-25.65	281	125	H
2	* 2.32916	45.44	Pk	31.5	-25.6	51.34	-	-	74	-22.66	281	125	H
3	* 2.39	32.82	VA1T	31.7	-25.5	39.02	54	-14.98	-	-	281	125	H
4	* 2.38523	32.97	VA1T	31.7	-25.5	39.17	54	-14.83	-	-	281	125	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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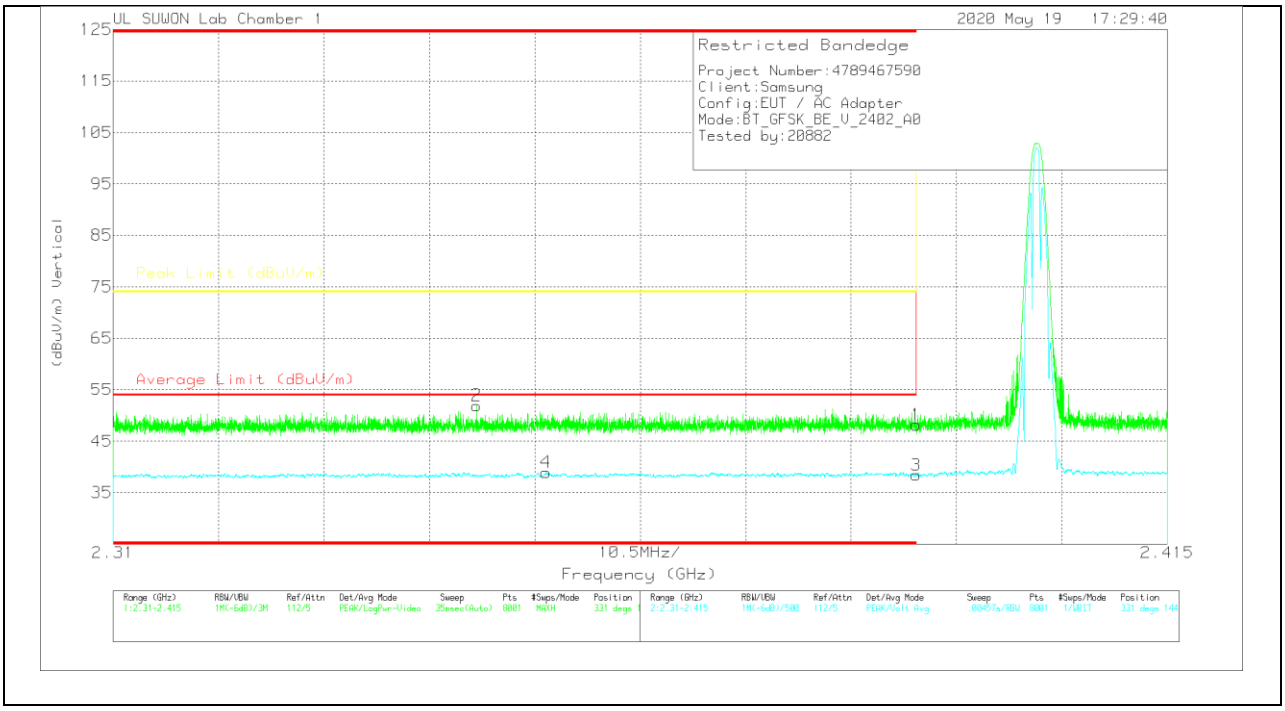
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	41.97	Pk	31.7	-25.5	48.17	-	-	74	-25.83	331	144	V
2	* 2.3462	45.9	Pk	31.6	-25.6	51.9	-	-	74	-22.1	331	144	V
3	* 2.39	32.22	VA1T	31.7	-25.5	38.42	54	-15.58	-	-	331	144	V
4	* 2.35312	32.85	VA1T	31.6	-25.5	38.95	54	-15.05	-	-	331	144	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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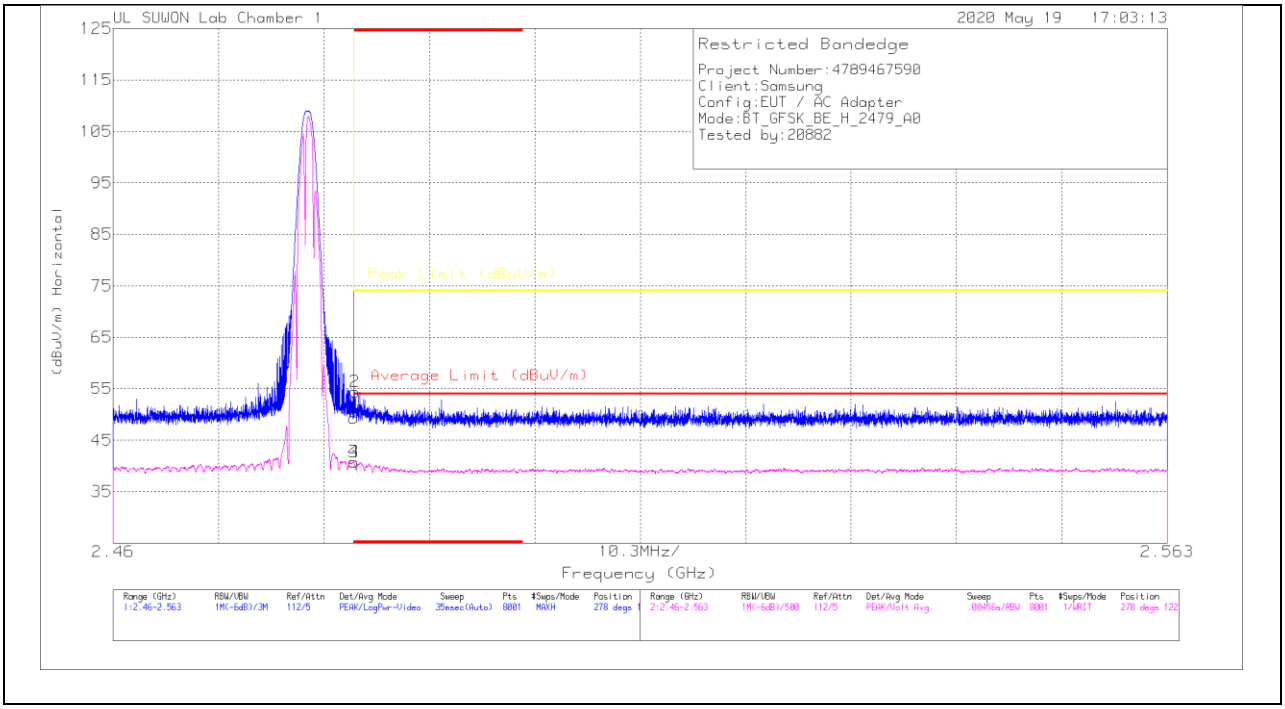
Antenna 1 BANDEDGE (77 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.59	Pk	31.9	-25.2	49.29	-	-	74	-24.71	278	122	H
2	* 2.48361	47.7	Pk	31.9	-25.2	54.4	-	-	74	-19.6	278	122	H
3	* 2.48351	34.07	VA1T	31.9	-25.2	40.77	54	-13.23	-	-	278	122	H
4	* 2.48352	34.09	VA1T	31.9	-25.2	40.79	54	-13.21	-	-	278	122	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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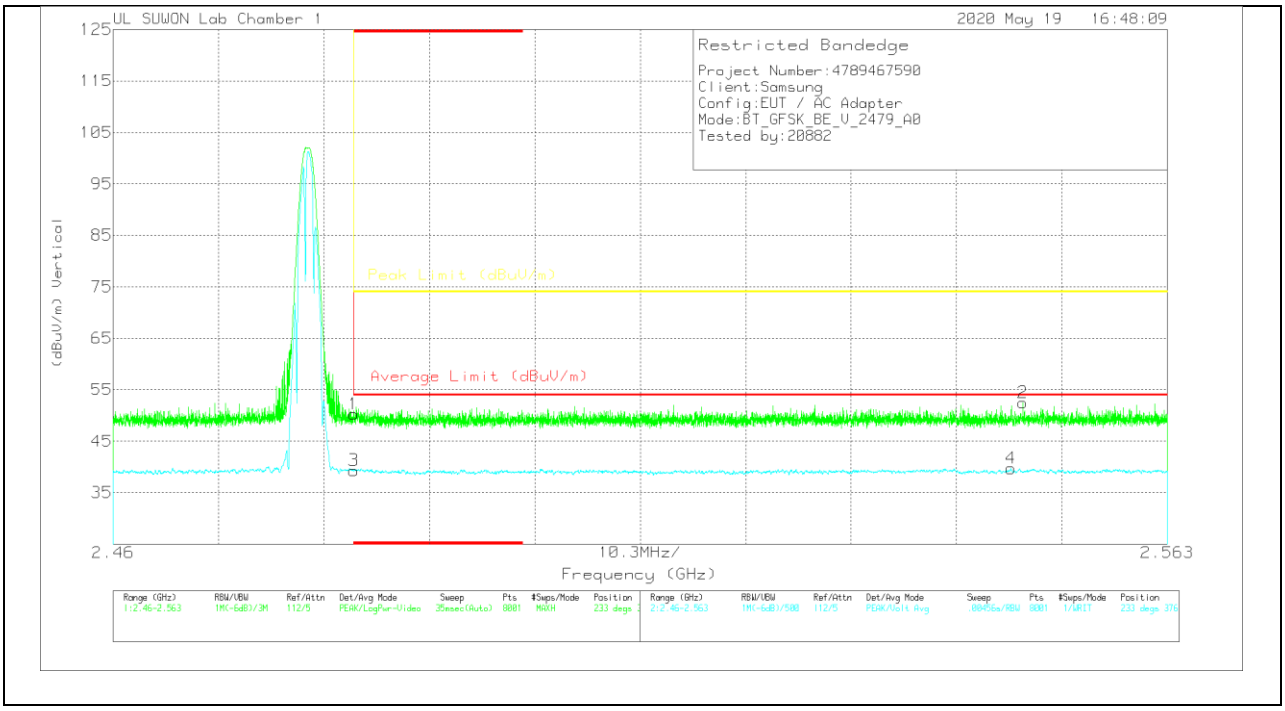
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	43.57	Pk	31.9	-25.2	50.27	-	-	74	-23.73	233	376	V
2	2.54889	45.59	Pk	32	-25.1	52.49	-	-	74	-21.51	233	376	V
3	* 2.48351	32.62	VA1T	31.9	-25.2	39.32	54	-14.68	-	-	233	376	V
4	2.5477	32.82	VA1T	32	-25.1	39.72	54	-14.28	-	-	233	376	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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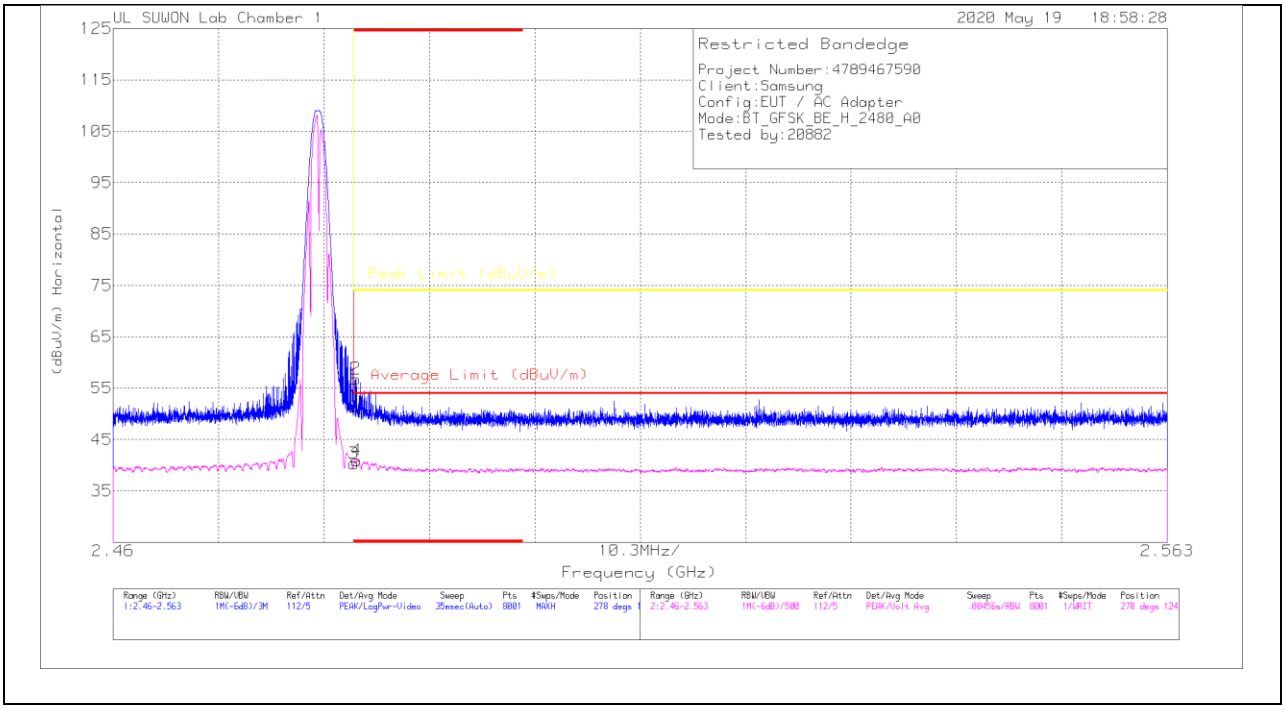
Antenna 1 BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	44.7	Pk	31.9	-25.2	51.4	-	-	74	-22.6	278	124	H
2	* 2.4837	50.11	Pk	31.9	-25.2	56.81	-	-	74	-17.19	278	124	H
3	* 2.48351	33.64	VA1T	31.9	-25.2	40.34	54	-13.66	-	-	278	124	H
4	* 2.48379	34.26	VA1T	31.9	-25.2	40.96	54	-13.04	-	-	278	124	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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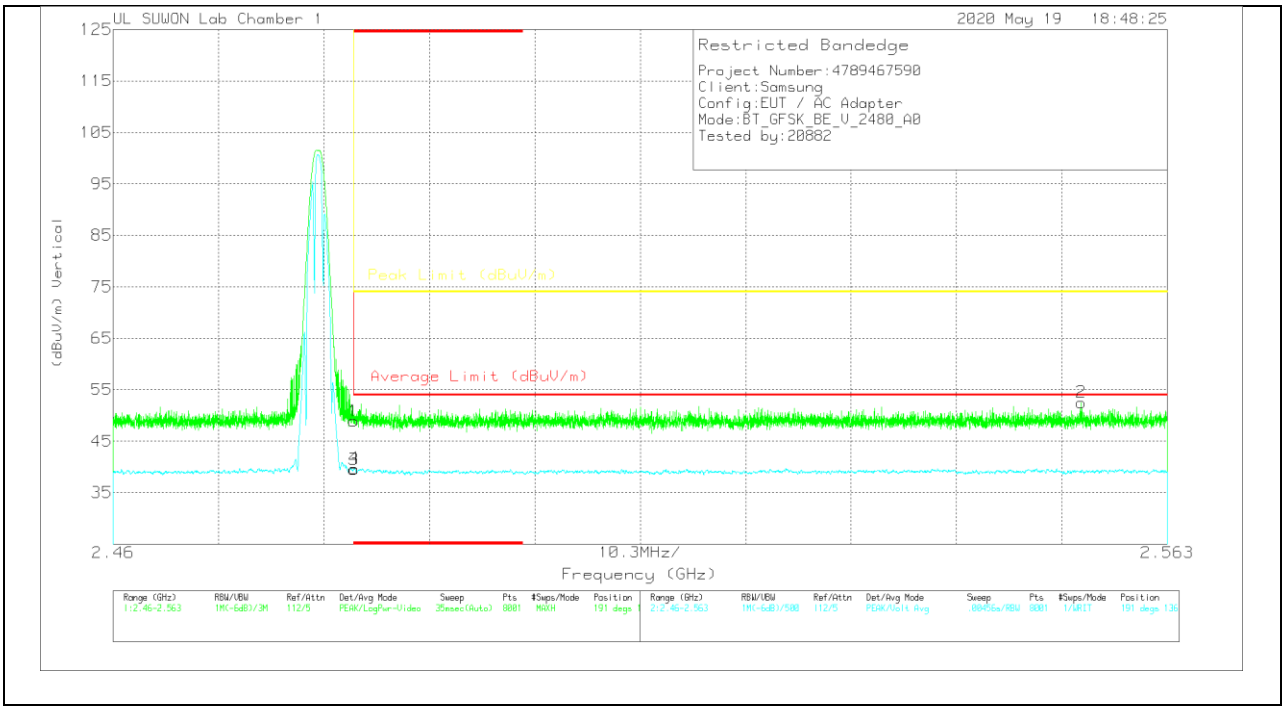
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.24	Pk	31.9	-25.2	48.94	-	-	74	-25.06	191	136	V
2	2.55459	45.74	Pk	32	-25.2	52.54	-	-	74	-21.46	191	136	V
3	* 2.48351	32.81	VA1T	31.9	-25.2	39.51	54	-14.49	-	-	191	136	V
4	* 2.48355	33.01	VA1T	31.9	-25.2	39.71	54	-14.29	-	-	191	136	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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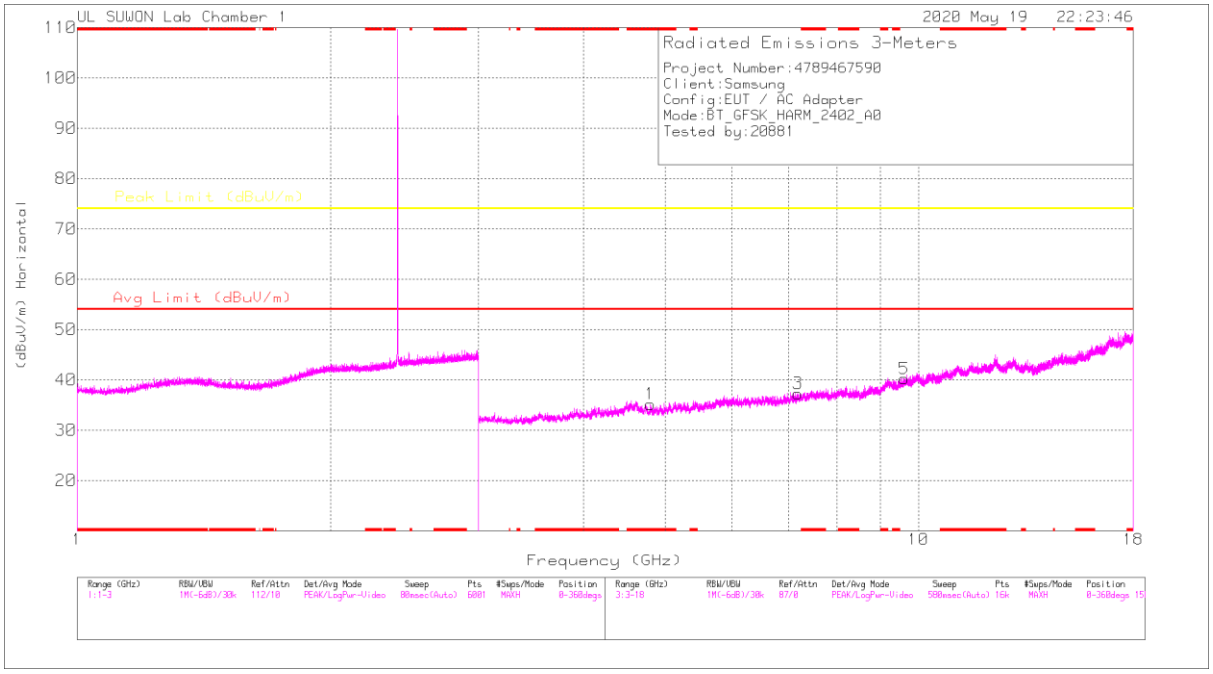
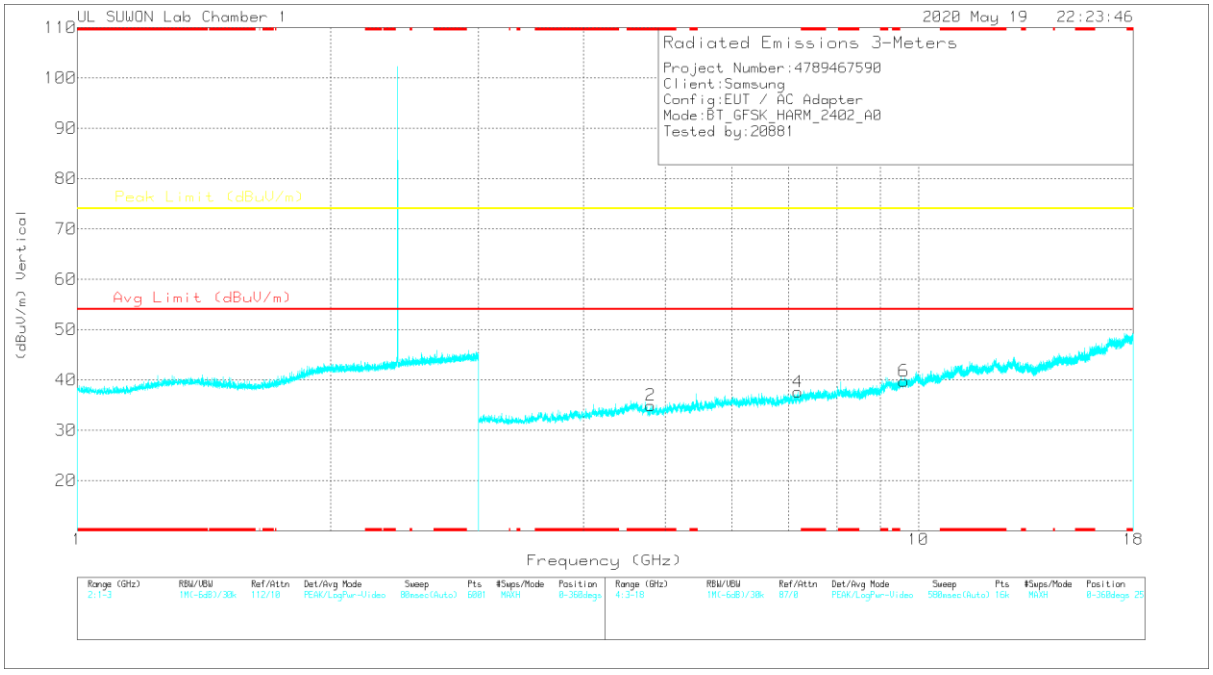
HARMONICS AND SPURIOUS EMISSIONS

Antenna 1 / 0 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80312	40.05	PKFH	34.2	-31.5	42.75	-	-	74	-31.25	360	100	H
* 4.80355	39.7	PKFH	34.2	-31.5	42.4	-	-	74	-31.6	360	100	V
7.20416	36.12	PKFH	35.8	-27.8	44.12	-	-	74	-29.88	360	100	H
7.20437	35.4	PKFH	35.8	-27.8	43.4	-	-	74	-30.6	360	100	V
9.60946	33.48	PKFH	37	-23.2	47.28	-	-	74	-26.72	360	100	H
9.60864	32.61	PKFH	37	-23.2	46.41	-	-	74	-27.59	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

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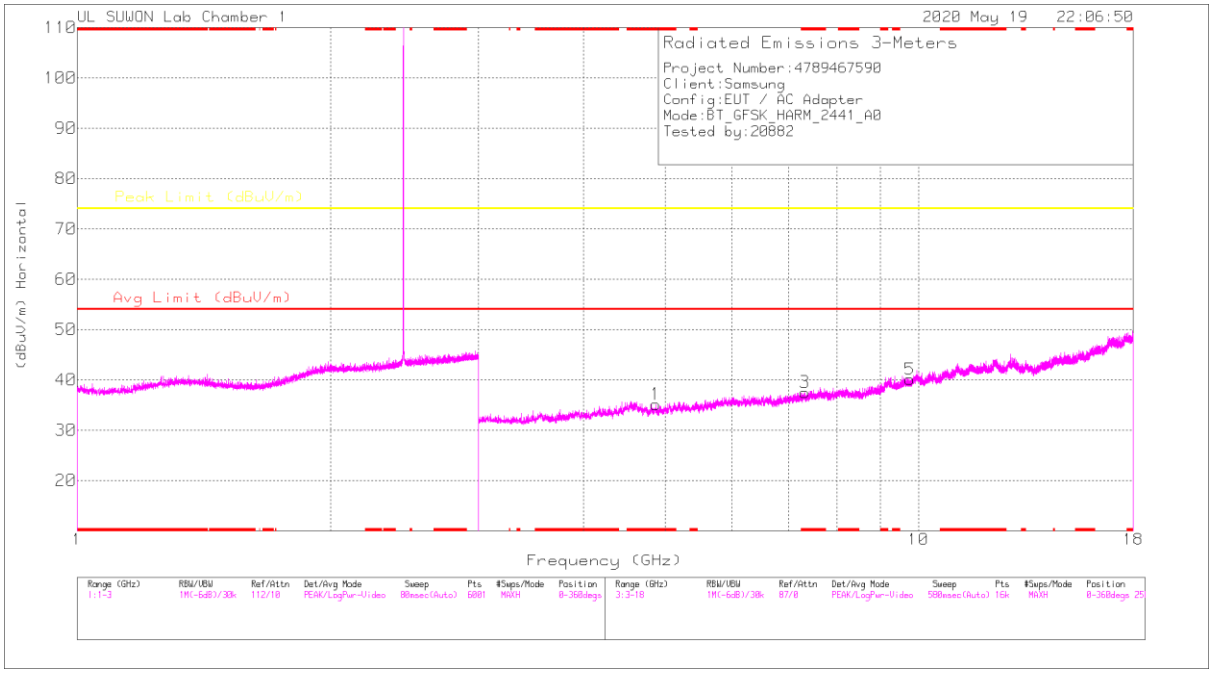
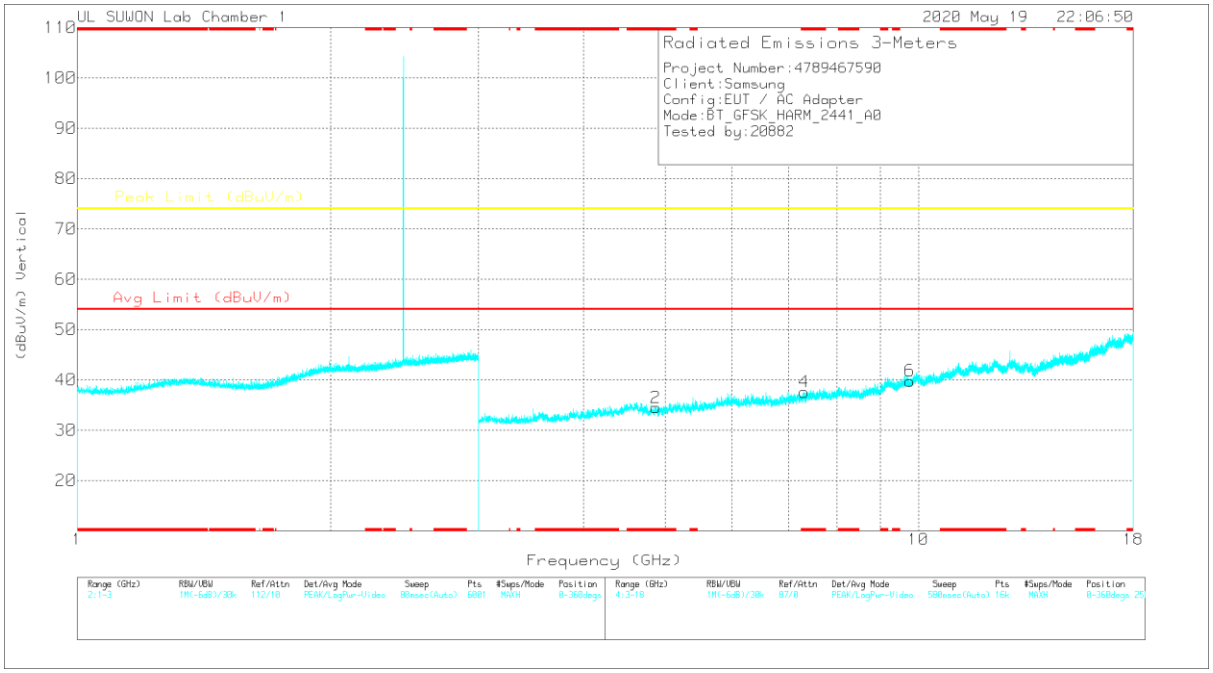
Antenna 1 / 39 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.87415	39.15	PKFH	34.2	-31.6	41.75	-	-	74	-32.25	360	100	H
* 4.88351	39.31	PKFH	34.2	-31.6	41.91	-	-	74	-32.09	360	100	V
* 7.32359	36.86	PKFH	35.8	-27.2	45.46	-	-	74	-28.54	360	100	H
* 7.32281	36.37	PKFH	35.8	-27.2	44.97	-	-	74	-29.03	360	100	V
9.76501	33.21	PKFH	37.2	-23.9	46.51	-	-	74	-27.49	360	100	H
9.76341	33.19	PKFH	37.2	-23.9	46.49	-	-	74	-27.51	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

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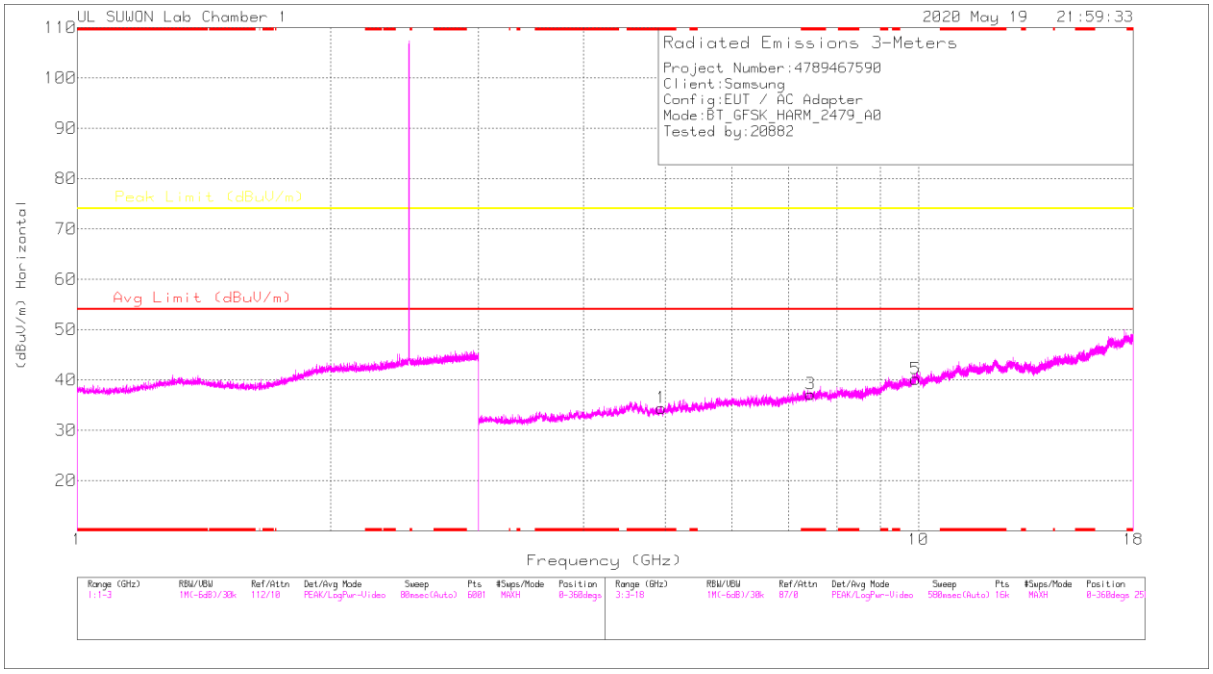
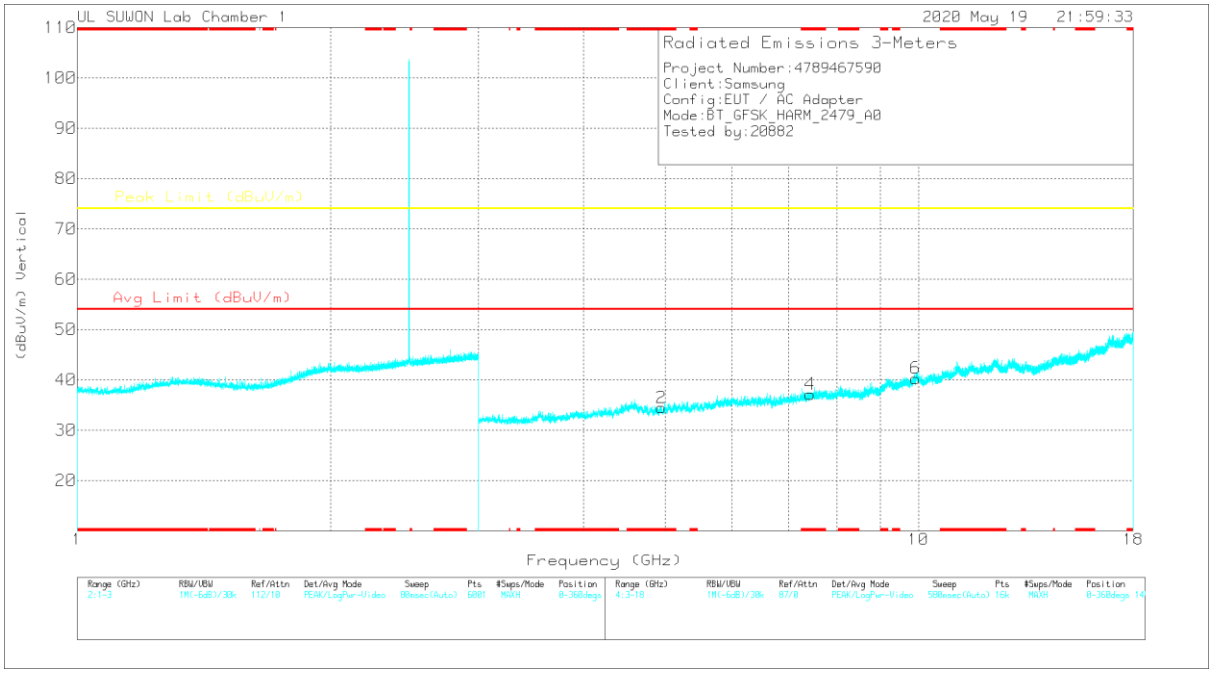
Antenna 1 / 77 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.952	39.59	PKFH	34.2	-31.7	42.09	-	-	74	-31.91	360	100	H
* 4.95969	38.57	PKFH	34.2	-31.6	41.17	-	-	74	-32.83	360	100	V
* 7.43544	36.5	PKFH	35.8	-27.1	45.2	-	-	74	-28.8	360	100	H
* 7.43772	35.91	PKFH	35.8	-27.1	44.61	-	-	74	-29.39	360	100	V
9.9165	32.73	PKFH	37.5	-22.1	48.13	-	-	74	-25.87	360	100	H
9.91658	32.59	PKFH	37.5	-22.1	47.99	-	-	74	-26.01	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

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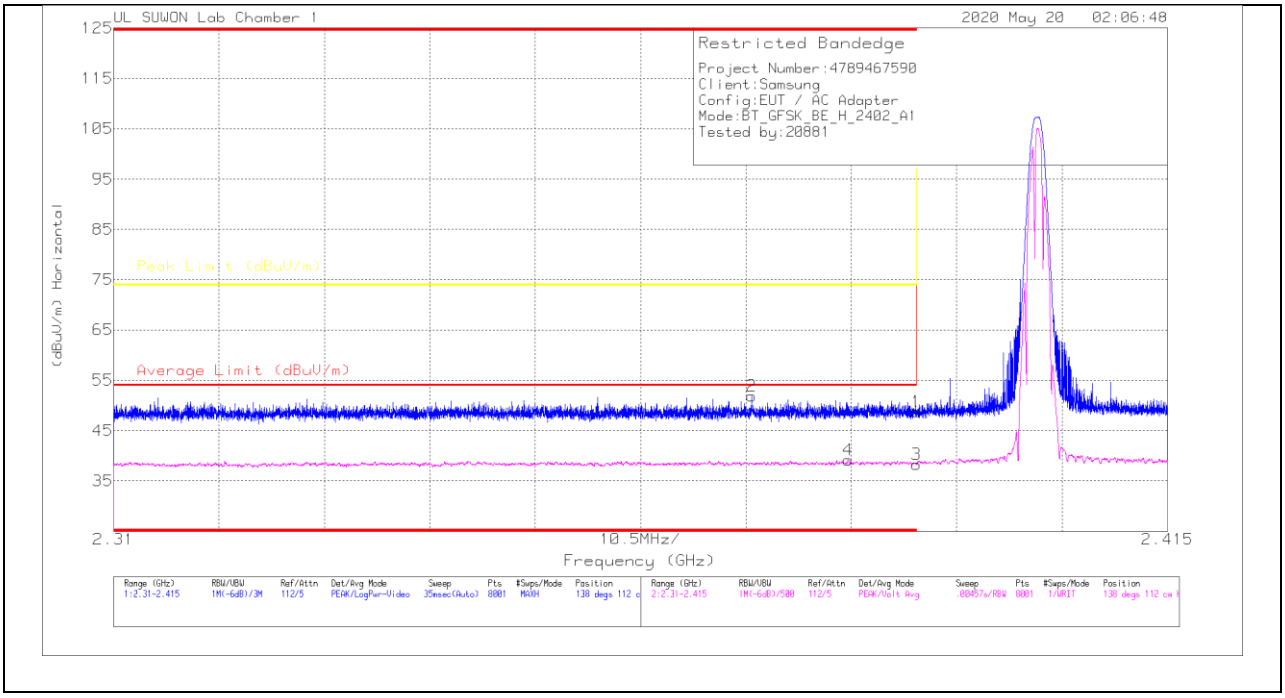
Antenna 2 BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.6	Pk	31.7	-25.5	48.8	-	-	74	-25.2	138	112	H
2	* 2.37355	45.87	Pk	31.6	-25.6	51.87	-	-	74	-22.13	138	112	H
3	* 2.39	32.04	VA1T	31.7	-25.5	38.24	54	-15.76	-	-	138	112	H
4	* 2.3832	33.04	VA1T	31.7	-25.6	39.14	54	-14.86	-	-	138	112	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 RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	40.59	Pk	31.7	-25.5	46.79	-	-	74	-27.21	65	145	V
2	* 2.38651	45.74	Pk	31.7	-25.5	51.94	-	-	74	-22.06	65	145	V
3	* 2.39	32.46	VA1T	31.7	-25.5	38.66	54	-15.34	-	-	65	145	V
4	* 2.38925	32.95	VA1T	31.7	-25.6	39.05	54	-14.95	-	-	65	145	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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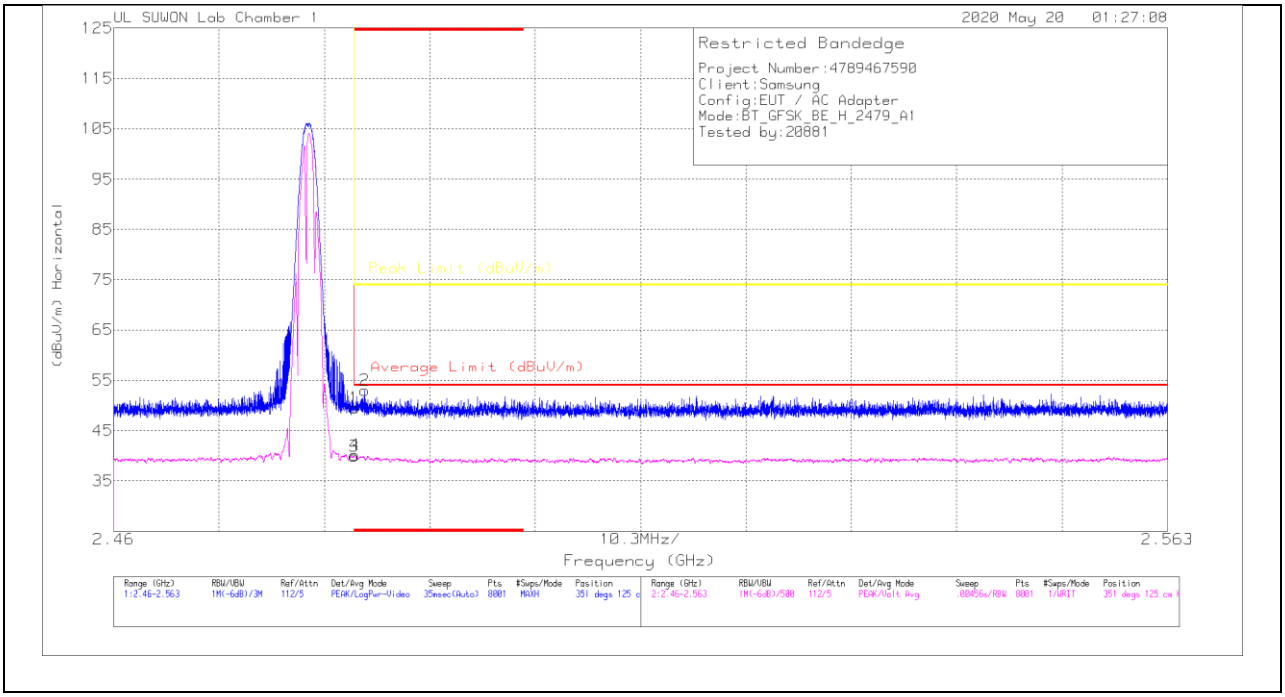
Antenna 2 BANDEDGE (77 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.76	Pk	31.9	-25.2	49.46	-	-	74	-24.54	351	125	H
2	* 2.48451	46.35	Pk	31.9	-25.2	53.05	-	-	74	-20.95	351	125	H
3	* 2.48351	33.18	VA1T	31.9	-25.2	39.88	54	-14.12	-	-	351	125	H
4	* 2.48356	33.43	VA1T	31.9	-25.2	40.13	54	-13.87	-	-	351	125	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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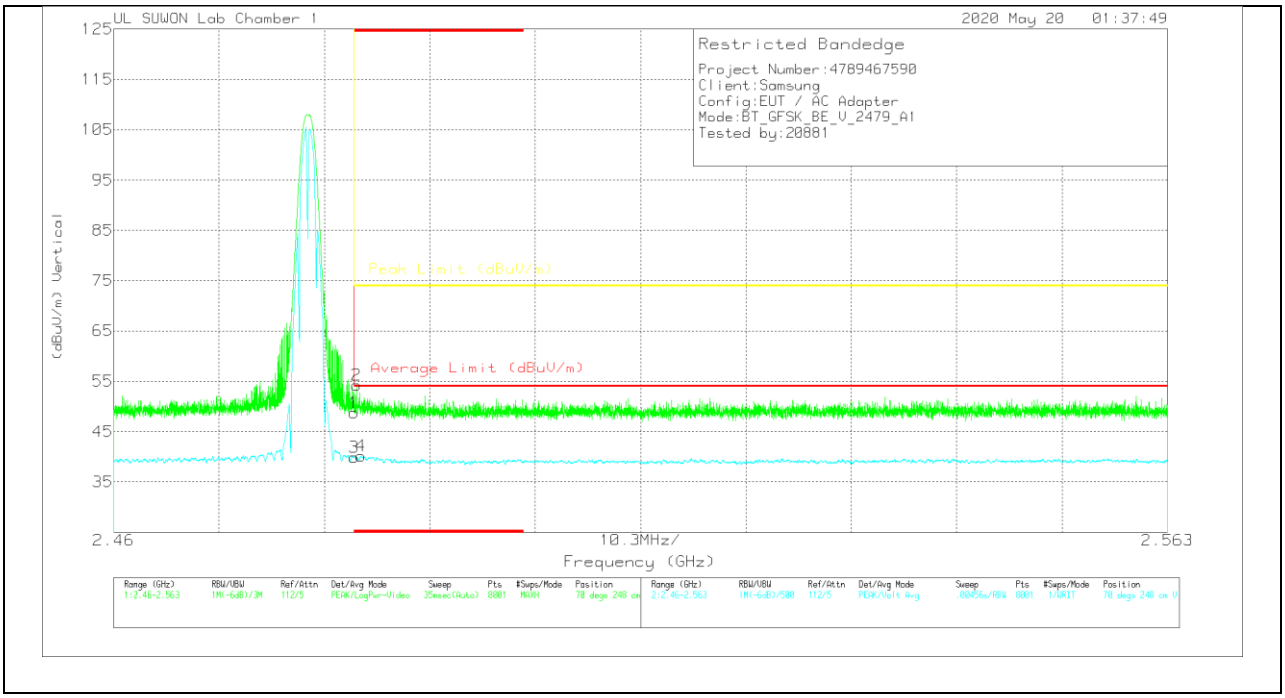
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.04	Pk	31.9	-25.2	48.74	-	-	74	-25.26	70	248	V
2	* 2.48375	47.6	Pk	31.9	-25.2	54.3	-	-	74	-19.7	70	248	V
3	* 2.48351	33.25	VA1T	31.9	-25.2	39.95	54	-14.05	-	-	70	248	V
4	* 2.48415	33.31	VA1T	31.9	-25.1	40.11	54	-13.89	-	-	70	248	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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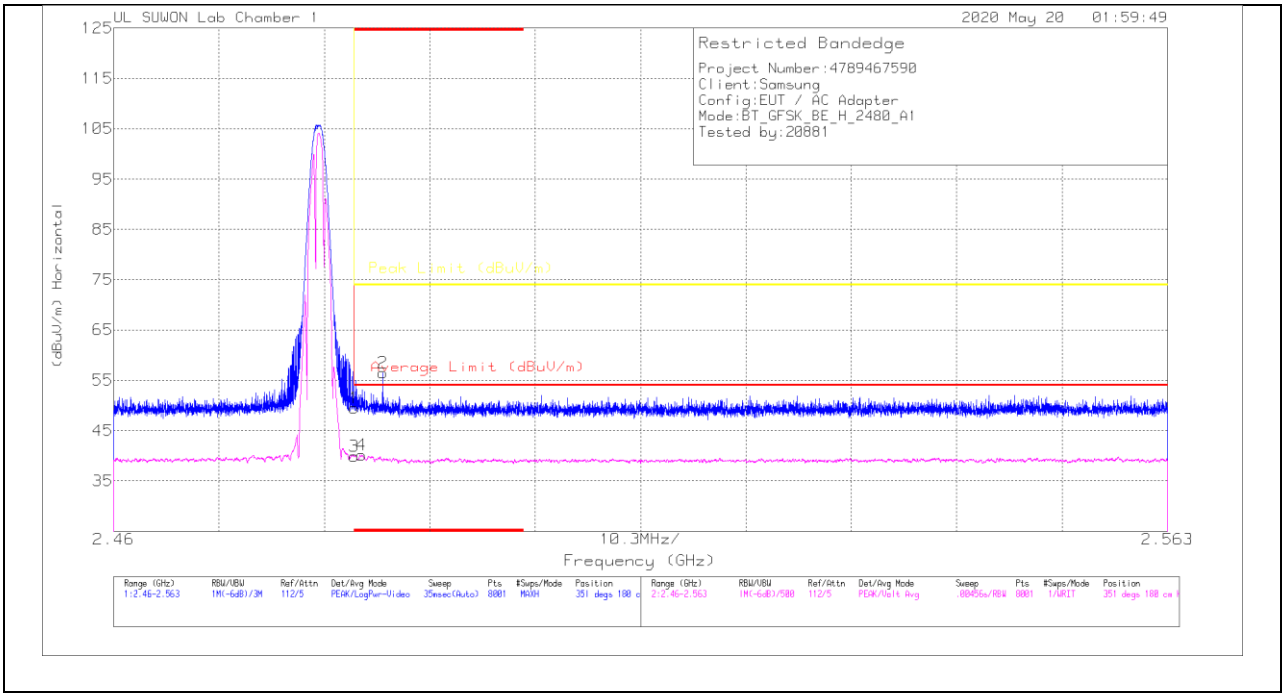
Antenna 2 BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.84	Pk	31.9	-25.2	49.54	-	-	74	-24.46	351	180	H
2	* 2.48629	49.89	Pk	31.9	-25.3	56.49	-	-	74	-17.51	351	180	H
3	* 2.48351	33.16	VA1T	31.9	-25.2	39.86	54	-14.14	-	-	351	180	H
4	* 2.48424	33.37	VA1T	31.9	-25.1	40.17	54	-13.83	-	-	351	180	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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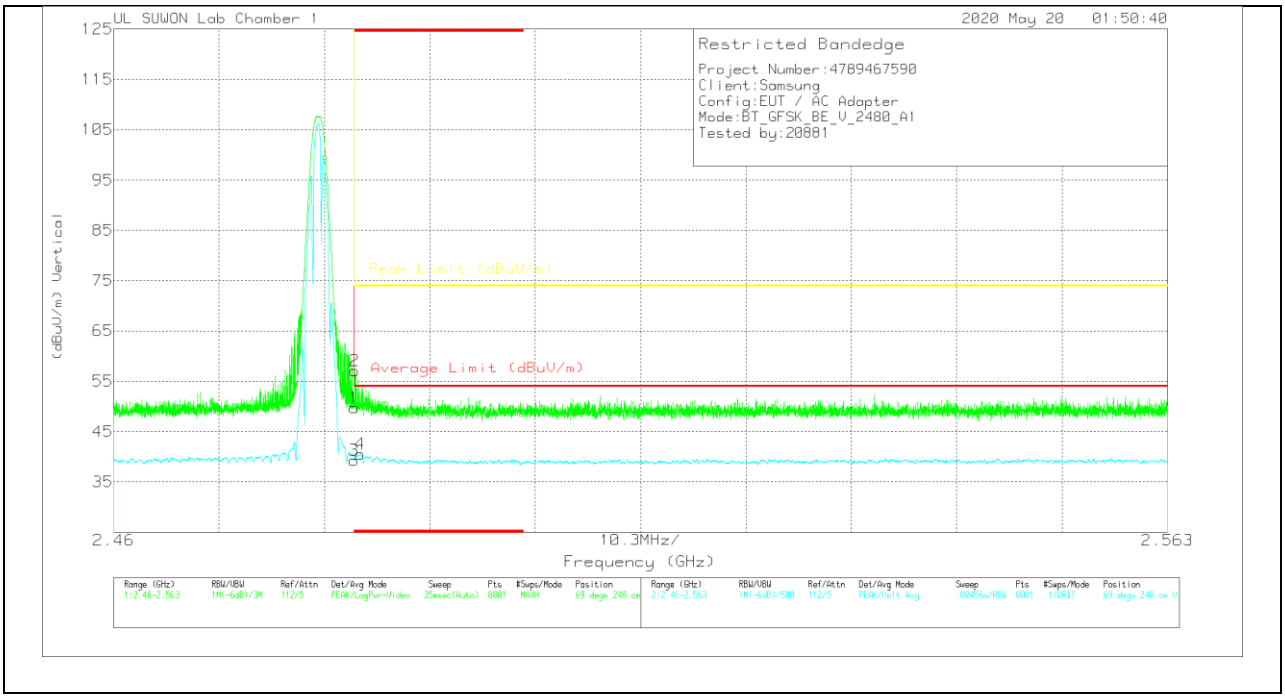
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	43.07	Pk	31.9	-25.2	49.77	-	-	74	-24.23	69	248	V
2	* 2.48355	50.43	Pk	31.9	-25.2	57.13	-	-	74	-16.87	69	248	V
3	* 2.48351	32.62	VA1T	31.9	-25.2	39.32	54	-14.68	-	-	69	248	V
4	* 2.48411	33.77	VA1T	31.9	-25.1	40.57	54	-13.43	-	-	69	248	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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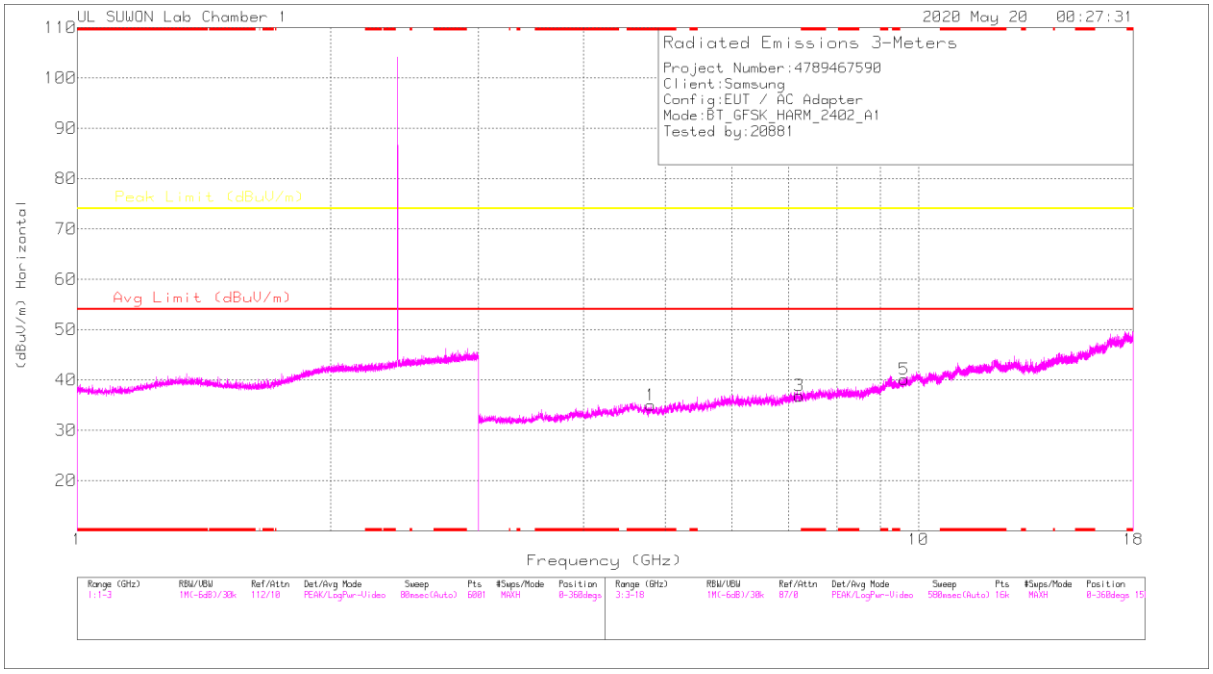
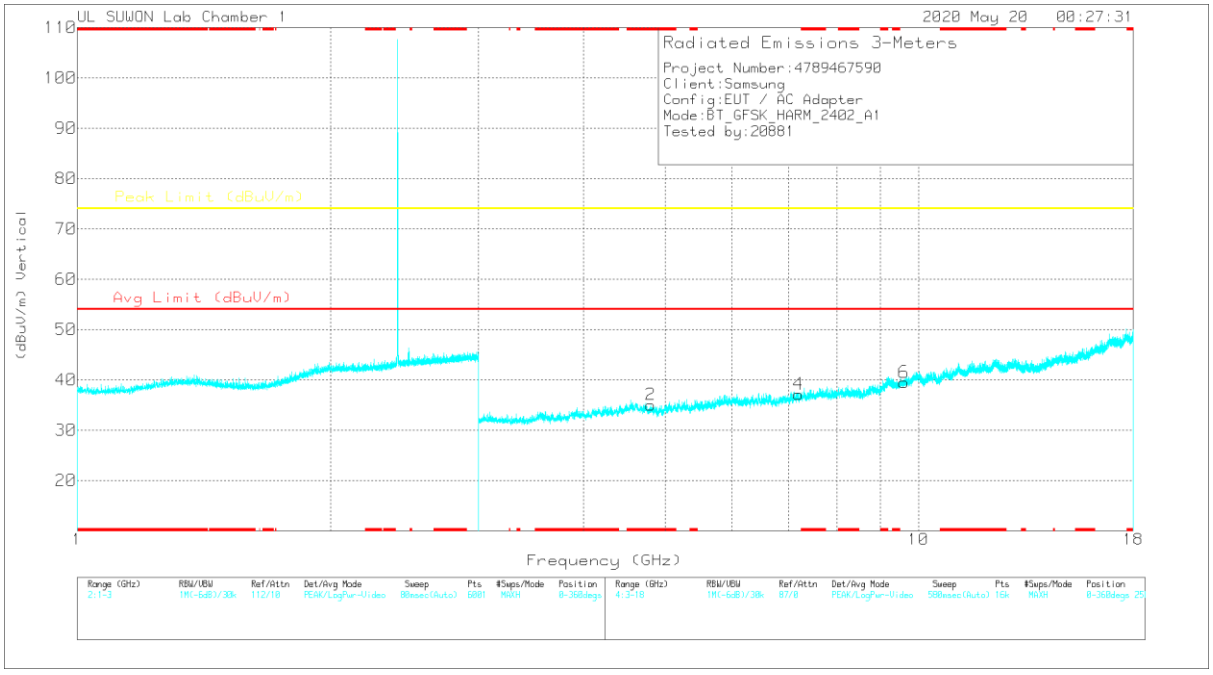
HARMONICS AND SPURIOUS EMISSIONS

Antenna 2 / 0 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80393	39.33	PKFH	34.2	-31.5	42.03	-	-	74	-31.97	360	100	H
* 4.80586	39.41	PKFH	34.2	-31.5	42.11	-	-	74	-31.89	360	100	V
7.20586	36.45	PKFH	35.8	-27.8	44.45	-	-	74	-29.55	360	100	H
7.20634	36.08	PKFH	35.8	-27.8	44.08	-	-	74	-29.92	360	100	V
9.60878	34.24	PKFH	37	-23.2	48.04	-	-	74	-25.96	360	100	H
9.60782	33.85	PKFH	37	-23.2	47.65	-	-	74	-26.35	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

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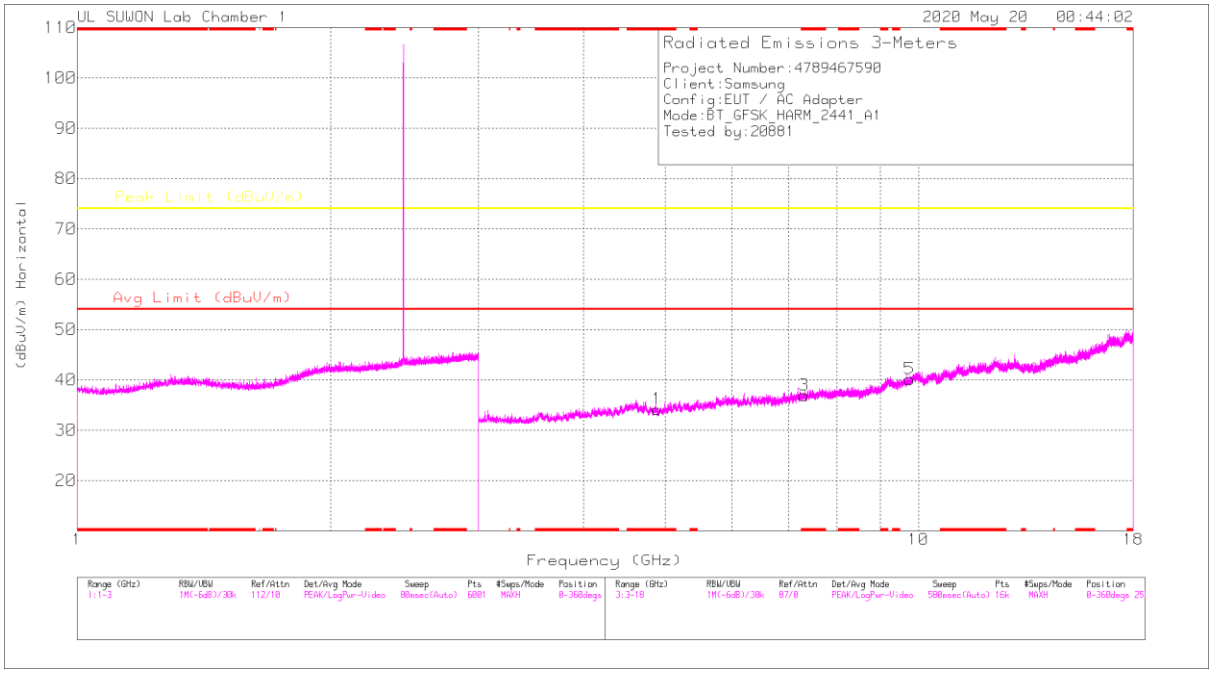
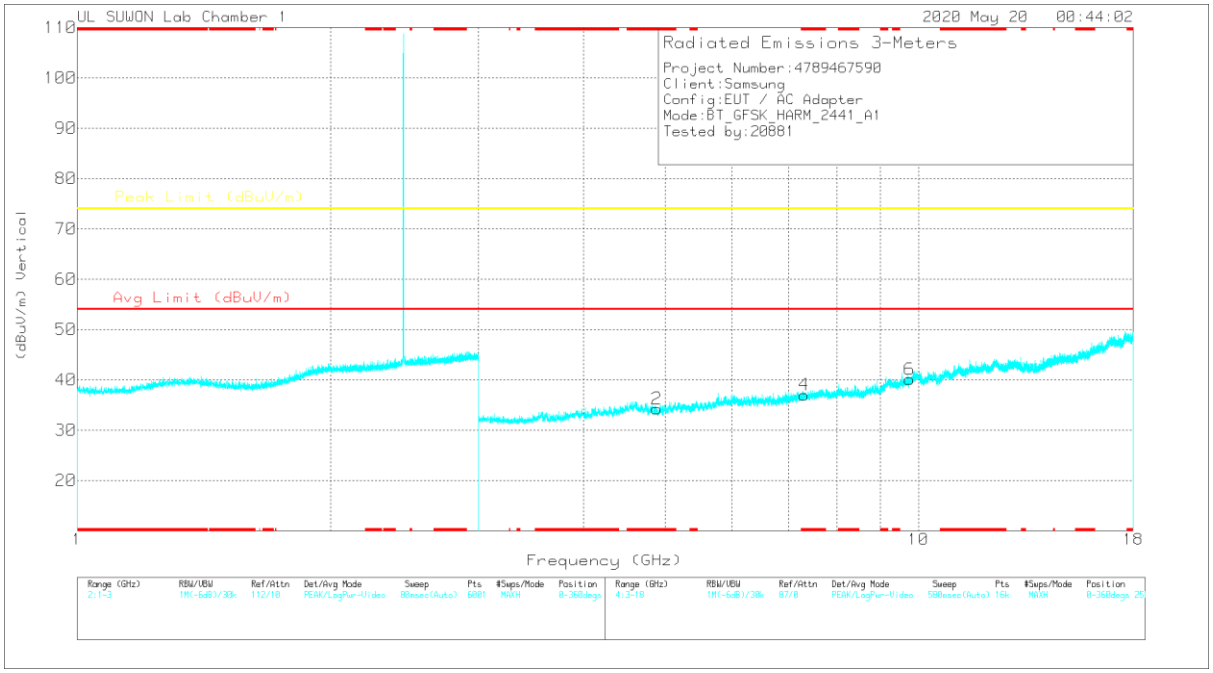
Antenna 2 / 39 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.88842	39.17	PKFH	34.2	-31.7	41.67	-	-	74	-32.33	360	100	H
* 4.88177	39.12	PKFH	34.2	-31.6	41.72	-	-	74	-32.28	360	100	V
* 7.32337	36.3	PKFH	35.8	-27.2	44.9	-	-	74	-29.1	360	100	H
* 7.32175	35.9	PKFH	35.8	-27.2	44.5	-	-	74	-29.5	360	100	V
9.76275	33.02	PKFH	37.2	-23.9	46.32	-	-	74	-27.68	360	100	H
9.76284	34.9	PKFH	37.2	-23.9	48.2	-	-	74	-25.8	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

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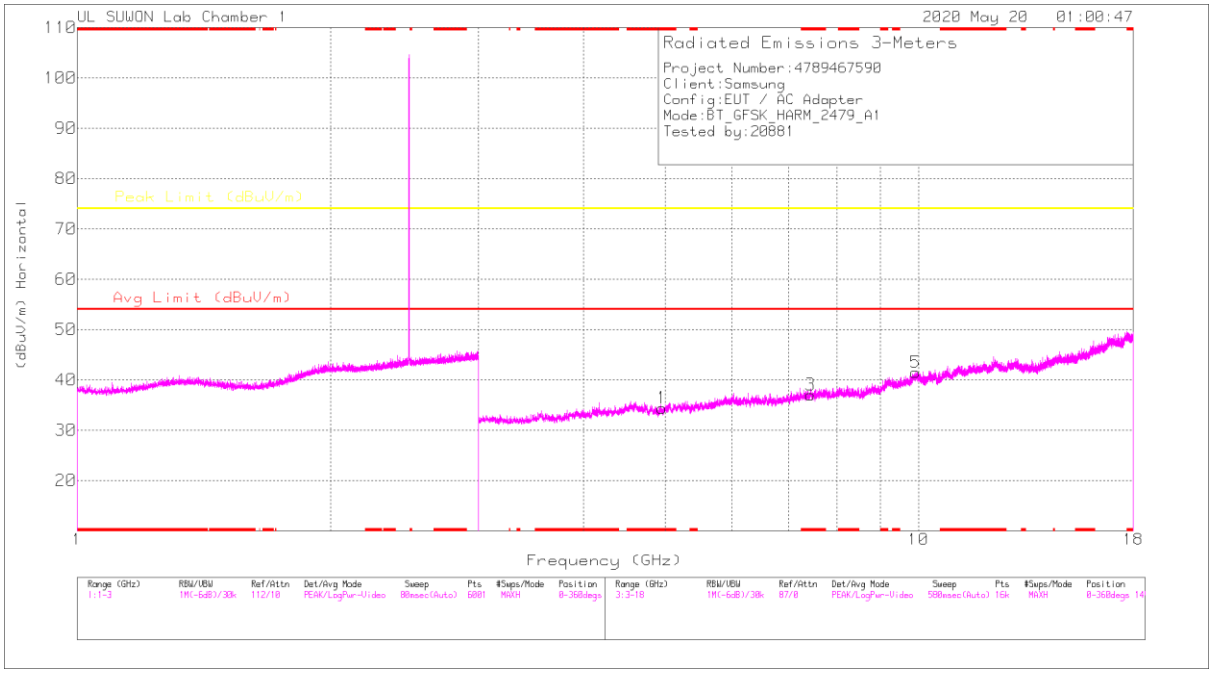
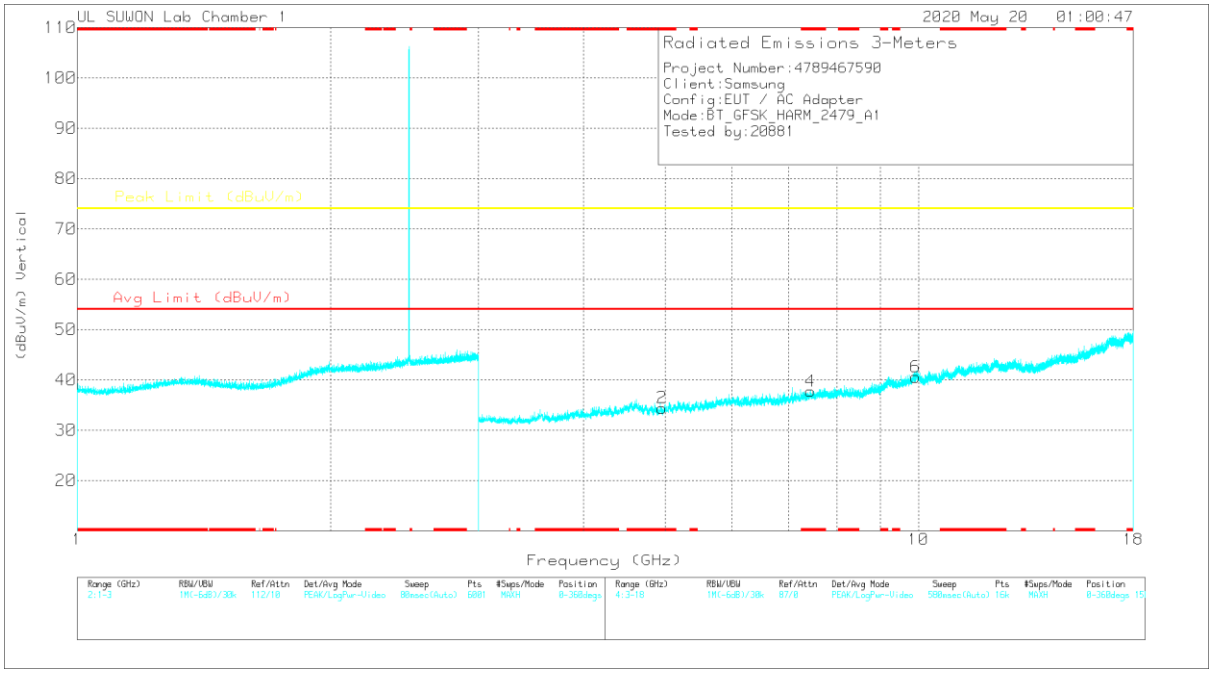
Antenna 2 / 77 CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.95421	38.46	PKFH	34.2	-31.6	41.06	-	-	74	-32.94	360	100	H
* 4.95736	38.6	PKFH	34.2	-31.6	41.2	-	-	74	-32.8	360	100	V
* 7.43845	36.28	PKFH	35.8	-27.2	44.88	-	-	74	-29.12	360	100	H
* 7.43697	36.26	PKFH	35.8	-27.1	44.96	-	-	74	-29.04	360	100	V
9.91427	31.95	PKFH	37.5	-22.1	47.35	-	-	74	-26.65	360	100	H
9.91762	32.54	PKFH	37.5	-22.1	47.94	-	-	74	-26.06	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

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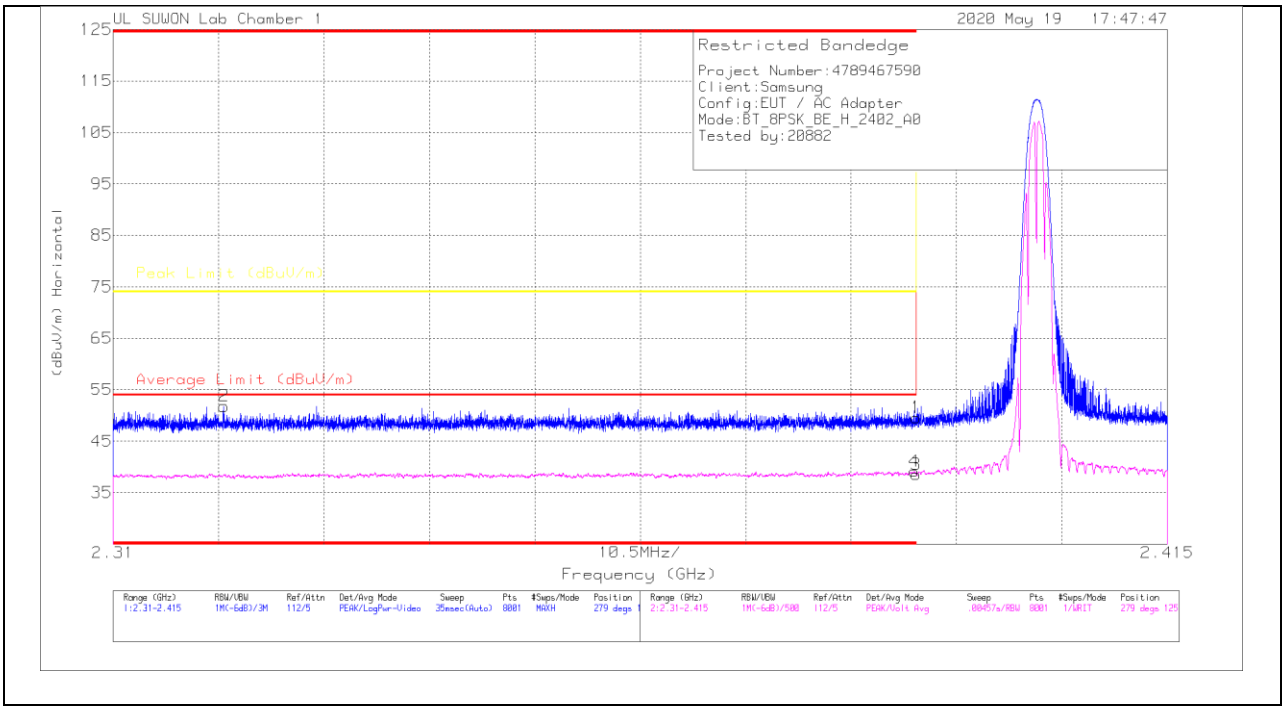
10.1.2. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

Antenna 1 / BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	43.39	Pk	31.7	-25.5	49.59	-	-	74	-24.41	279	125	H
2	* 2.32103	45.92	Pk	31.5	-25.6	51.82	-	-	74	-22.18	279	125	H
3	* 2.39	32.35	VA1T	31.7	-25.5	38.55	54	-15.45	-	-	279	125	H
4	* 2.38981	32.93	VA1T	31.7	-25.5	39.13	54	-14.87	-	-	279	125	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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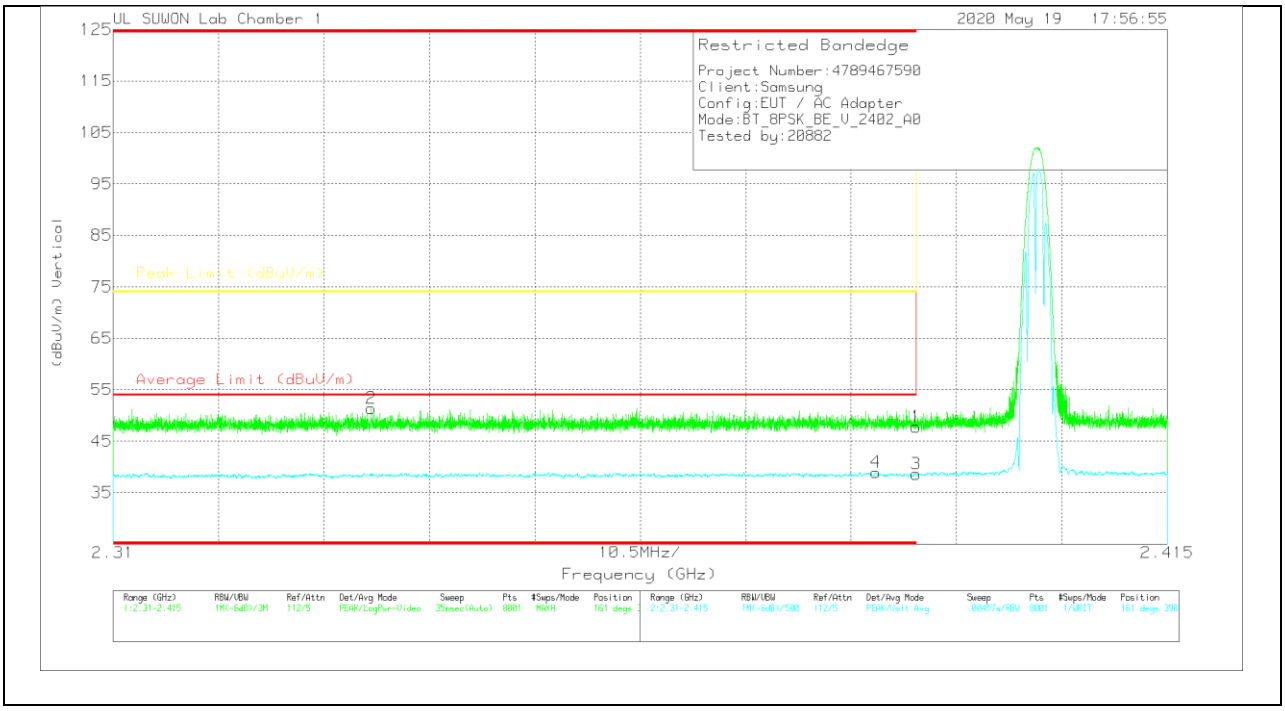
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	41.59	Pk	31.7	-25.5	47.79	-	-	74	-26.21	161	398	V
2	* 2.33569	45.49	Pk	31.5	-25.6	51.39	-	-	74	-22.61	161	398	V
3	* 2.39	32.43	VA1T	31.7	-25.5	38.63	54	-15.37	-	-	161	398	V
4	* 2.38598	32.76	VA1T	31.7	-25.5	38.96	54	-15.04	-	-	161	398	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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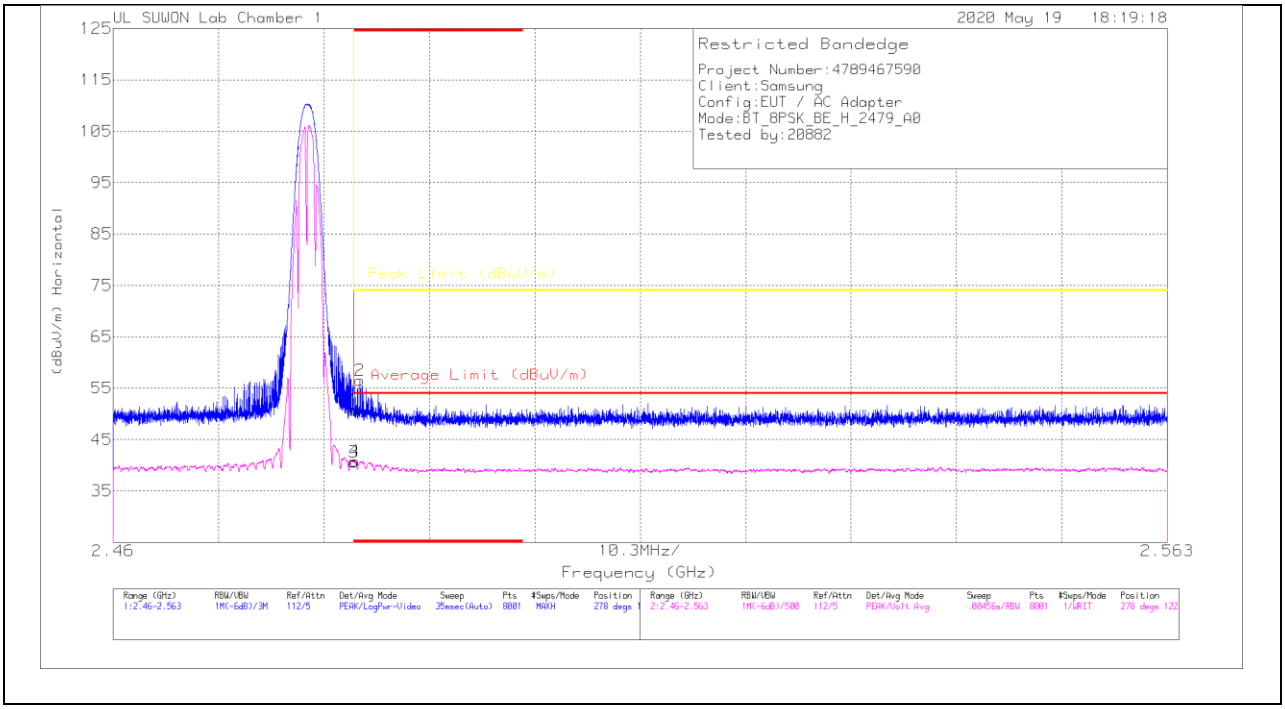
Antenna 1 / BANDEDGE (77 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	44.07	Pk	31.9	-25.2	50.77	-	-	74	-23.23	278	122	H
2	* 2.48409	49.69	Pk	31.9	-25.1	56.49	-	-	74	-17.51	278	122	H
3	* 2.48351	33.91	VA1T	31.9	-25.2	40.61	54	-13.39	-	-	278	122	H
4	* 2.48359	34.08	VA1T	31.9	-25.2	40.78	54	-13.22	-	-	278	122	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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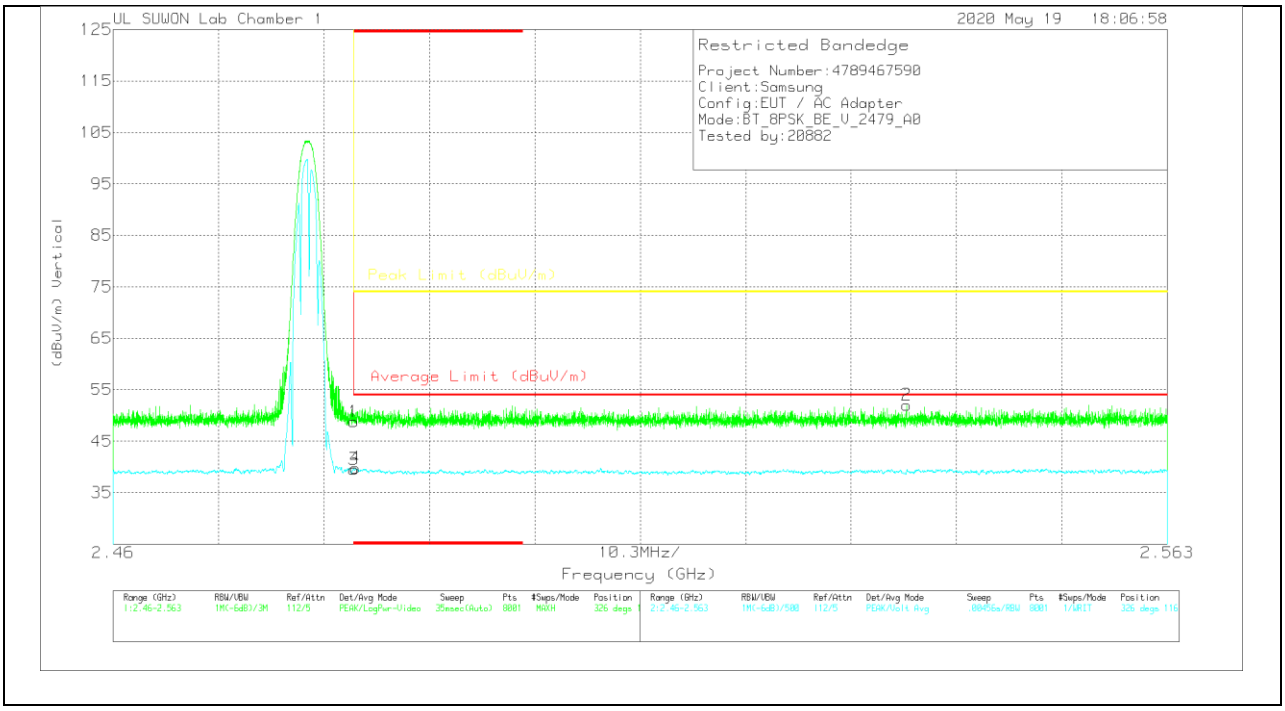
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	42.11	Pk	31.9	-25.2	48.81	-	-	74	-25.19	326	116	V
2	2.53752	45.24	Pk	32	-25.2	52.04	-	-	74	-21.96	326	116	V
3	* 2.48351	32.83	VA1T	31.9	-25.2	39.53	54	-14.47	-	-	326	116	V
4	* 2.48368	33.08	VA1T	31.9	-25.2	39.78	54	-14.22	-	-	326	116	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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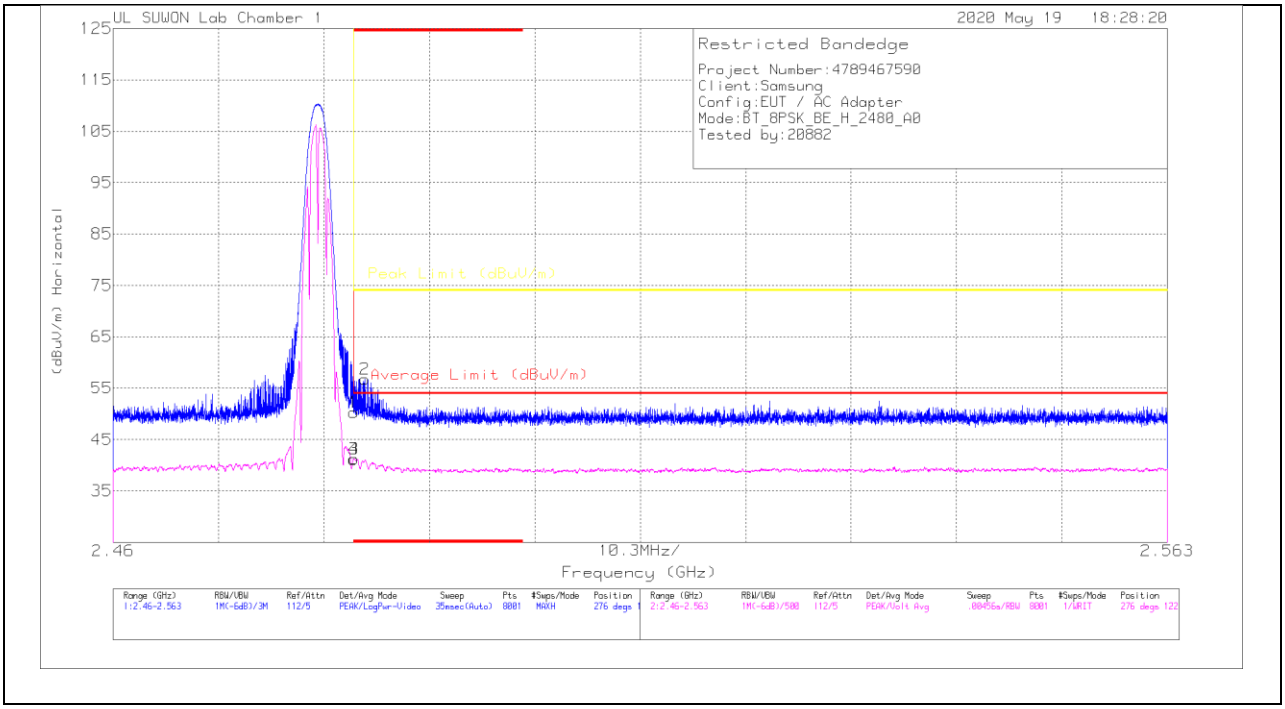
Antenna 1 / BANDEDGE (78 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	43.57	Pk	31.9	-25.2	50.27	-	-	74	-23.73	276	122	H
2	* 2.48459	50.05	Pk	31.9	-25.2	56.75	-	-	74	-17.25	276	122	H
3	* 2.48351	34.5	VA1T	31.9	-25.2	41.2	54	-12.8	-	-	276	122	H
4	* 2.48355	34.53	VA1T	31.9	-25.2	41.23	54	-12.77	-	-	276	122	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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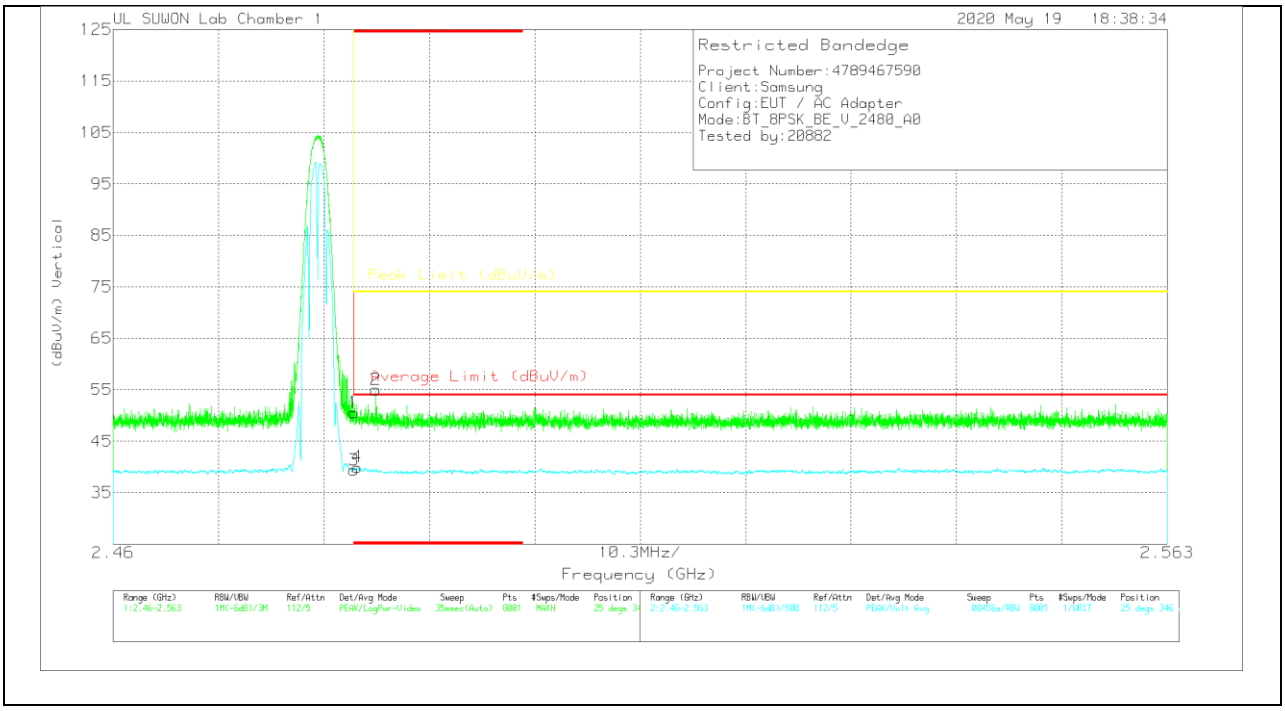
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	43.86	Pk	31.9	-25.2	50.56	-	-	74	-23.44	25	346	V
2	* 2.48566	48.3	Pk	31.9	-25.2	55	-	-	74	-19	25	346	V
3	* 2.48351	32.69	VA1T	31.9	-25.2	39.39	54	-14.61	-	-	25	346	V
4	* 2.48386	33.25	VA1T	31.9	-25.2	39.95	54	-14.05	-	-	25	346	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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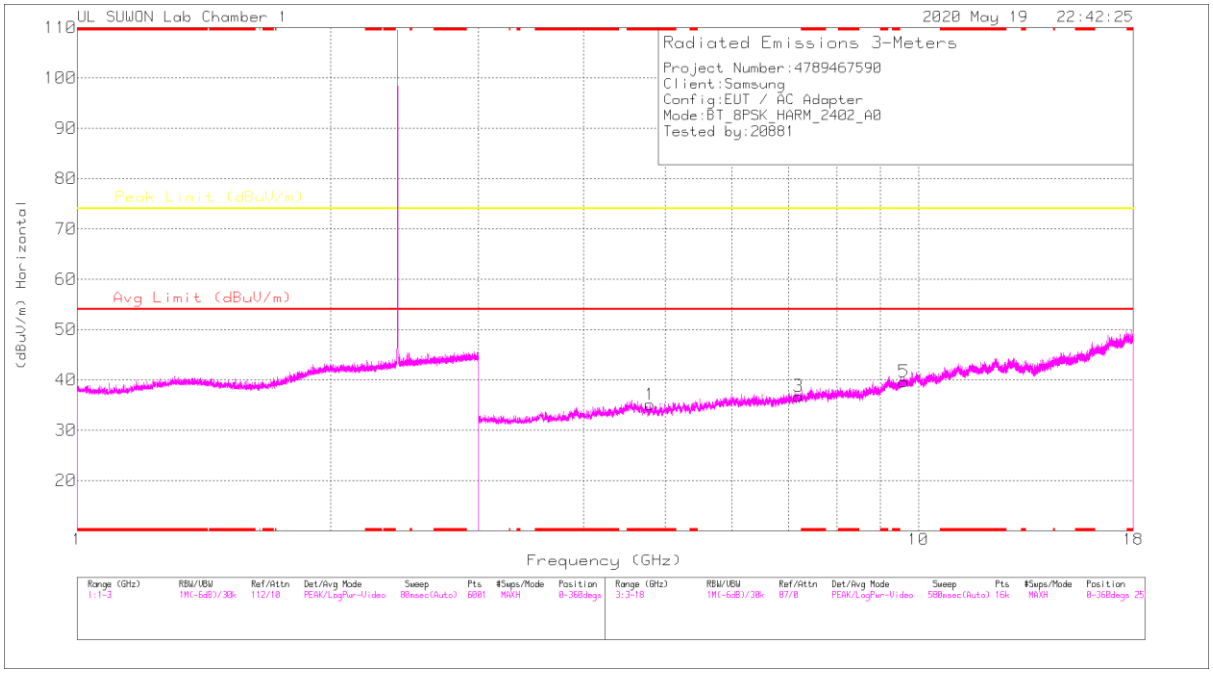
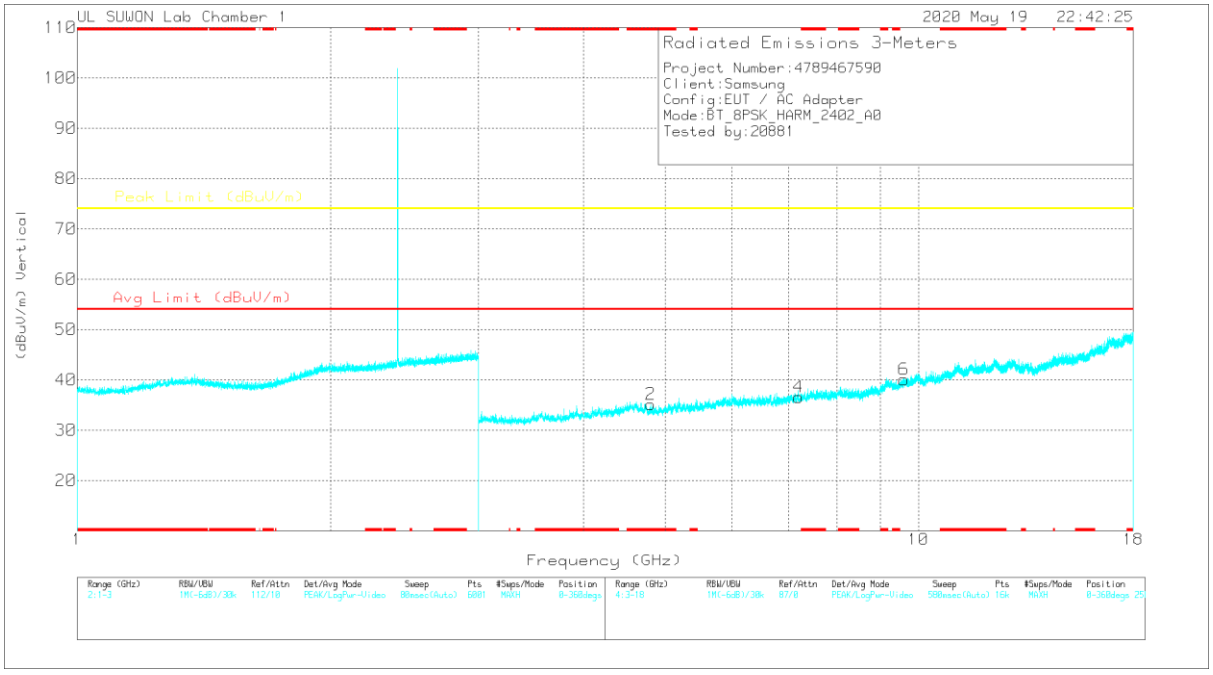
HARMONICS AND SPURIOUS EMISSIONS

Antenna 1 / 0 CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.79805	39.93	PKFH	34.2	-31.6	42.53	-	-	74	-31.47	360	100	H
* 4.80306	40.39	PKFH	34.2	-31.5	43.09	-	-	74	-30.91	360	100	V
7.20704	35.48	PKFH	35.8	-27.8	43.48	-	-	74	-30.52	360	100	H
7.20778	35.42	PKFH	35.8	-27.9	43.32	-	-	74	-30.68	360	100	V
9.60884	33.19	PKFH	37	-23.2	46.99	-	-	74	-27.01	360	100	H
9.60928	32.84	PKFH	37	-23.2	46.64	-	-	74	-27.36	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

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