



# CERTIFICATION TEST REPORT

**Report Number.** : 4790379967-E4V1

**Applicant** : SAMSUNG ELECTRONICS CO., LTD.  
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,  
GYEONGGI-DO, 16677, KOREA

**Model** : SM-A236U, SM-A236U1/DS, SM-S236DL

**FCC ID** : A3LSMA236U

**EUT Description** : GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac and  
NFC

**Test Standard(s)** : FCC 47 CFR PART 15 SUBPART C

**Date Of Issue:**

2022-06-24

**Prepared by:**

UL Korea, Ltd.

26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory

218 Maeyeong-ro, Yeongtong-gu,

Suwon-si, Gyeonggi-do, 16675, Korea

TEL: (031) 337-9902

FAX: (031) 213-5433



Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	2022-06-24	Initial issue	Sungeun Lee

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>5</b>
<b>2. TEST METHODOLOGY .....</b>	<b>6</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>6</b>
<b>4. DECISION RULES AND MEASUREMENT UNCERTAINTY .....</b>	<b>7</b>
4.1. METROLOGICAL TRACEABILITY.....	7
4.2. SAMPLE CALCULATION.....	7
4.3. MEASUREMENT UNCERTAINTY .....	7
4.4. DECISION RULES.....	7
<b>5. EQUIPMENT UNDER TEST.....</b>	<b>8</b>
5.1. EUT DESCRIPTION.....	8
5.2. MAXIMUM OUTPUT POWER.....	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS .....	8
5.4. WORST-CASE CONFIGURATION AND MODE .....	9
5.5. DESCRIPTION OF TEST SETUP.....	10
<b>6. MEASUREMENT METHOD.....</b>	<b>12</b>
<b>7. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>13</b>
<b>8. TEST RESULTS SUMMARY .....</b>	<b>14</b>
<b>9. ANTENNA PORT TEST RESULTS .....</b>	<b>15</b>
9.1. ON TIME AND DUTY CYCLE .....	15
9.2. 6 dB BANDWIDTH .....	16
9.2.1. Test data.....	16
9.2.2. 6 dB BANDWIDTH PLOTS .....	17
9.3. OUTPUT POWER.....	18
9.3.1. Test data.....	18
9.3.2. PEAK POWER PLOTS .....	19
9.4. AVERAGE POWER .....	20
9.4.1. Test data.....	20
9.5. POWER SPECTRAL DENSITY .....	21
9.5.1. Test data.....	21
9.5.2. PSD TEST PLOTS .....	22
9.6. CONDUCTED SPURIOUS EMISSIONS .....	23
9.6.1. Test plot.....	24

---

<b>10.</b>	<b>RADIATED TEST RESULTS .....</b>	<b>26</b>
10.1.	LIMITS AND PROCEDURE .....	26
10.2.	TRANSMITTER ABOVE 1 GHz .....	28
10.2.1.	500 kbps.....	28
10.2.2.	2 Mbps .....	35
10.3.	WORST CASE BELOW 1 GHz.....	42
<b>11.</b>	<b>AC POWER LINE CONDUCTED EMISSIONS .....</b>	<b>43</b>
11.1.	AC Power Line.....	44

# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.  
**EUT DESCRIPTION:** GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac and NFC  
**MODEL NUMBER:** SM-A236U, SM-A236U1/DS, SM-S236DL  
**SERIAL NUMBER:** R3CT40ETG0V, R3CT40ETHWJ (CONDUCTED);  
6224a6bc82197ece, R3CT50DASKA (RADIATED);  
**DATE TESTED:** 2022-04-18 ~ 2022-06-24;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For  
UL Korea, Ltd. By:



Seokhwan Hong  
Suwon Lab Engineer  
UL Korea, Ltd.

Tested By:



Sungeun Lee  
Suwon Lab Engineer  
UL Korea, Ltd.

## 2. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 15.247 Meas Guidance v05r02.
4. ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
<input checked="" type="checkbox"/>	Chamber 1(3m semi-anechoic chamber)
<input checked="" type="checkbox"/>	Chamber 2(3m semi-anechoic chamber)
<input checked="" type="checkbox"/>	Chamber 3(3m semi-anechoic chamber)
<input type="checkbox"/>	Chamber 4(3m Full-anechoic chamber)
<input type="checkbox"/>	Chamber 5(3m Full-anechoic chamber)

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

## 4. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 4.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 28.9 \text{ dBuV/m} &= 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.02 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.05 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.78 dB
Radiated Disturbance, 18 GHz to 40 GHz	5.58 dB

Uncertainty figures are valid to a confidence level of 95%.

### 4.4. DECISION RULES

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2007.

## 5. EQUIPMENT UNDER TEST

### 5.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac and NFC. This test report addresses the DTS (BLE) operational mode.

This report covers the Samsung models SM-A236U, SM-A236U1/DS, SM-S236DL. These models are identical in hardware except SM-A236U1/DS is supported dual SIM tray and SM-A236U has single SIM tray, SM-S236DL is same hardware.

All series model was same hardware thus, SM-A236U was set for final test.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range [MHz]	Mode	Power Mode	Output Power [dBm]	Output Power [mW]
2 402 ~ 2 480	500kbps (255pkt)	Peak	8.021	6.340
		Average	7.660	5.834
	2Mbps (37pkt)	Peak	7.172	5.214
		Average	6.581	4.551

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

**The internal antenna was Permanently attached.  
 Therefore this E.U.T Complies with the requirement of §15.203.**

The radio utilizes an internal antennas, with ANT maximum gain of -4.70 dBi.



## 5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

Note : All radiated and power line conducted tests were performed attached with travel adapter for the worst case condition mode.

### Power verification

The Output Power of all data rate are all investigated, the 500 kbps(255 pkt) and 2 Mbps(37 pkt) power is the worst case for symbol rate. All tests were performed in these two modes.

Symbol Rate [Ms/s]	Mode	Freq. [MHz]	Conducted Burst Avg [dBm]	Symbol Rate [Ms/s]	Mode	Freq. [MHz]	Conducted Burst Avg [dBm]
<b>1</b>	1Mbps 37pkt	2402	5.655	<b>2</b>	<b>2Mbps 37pkt</b>	2402	5.422
		2440	6.594			2440	6.451
		2480	6.737			<b>2480</b>	<b>6.581</b>
	1Mbps 255pkt	2402	5.588		2Mbps 255pkt	2402	5.395
		2440	6.574			2440	6.428
		2480	6.663			2480	6.521
<b>1 Coded S=8</b>	125kbps 37pkt	2402	5.596	<b>1 Coded S=2</b>	500kbps 37pkt	2402	5.595
		2440	6.586			2440	6.577
		2480	6.676			2480	6.643
	125kbps 255pkt	2402	5.560		500kbps 255pkt	2402	6.408
		2440	6.537			<b>2440</b>	<b>7.660</b>
		2480	6.619			2480	7.422

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37MANQ1E72SE3	N/A
Data Cable	SAMSUNG	EP-DN980	GH39-02115A BWE	N/A
Earphone	SAMSUNG	GH59-15055A	EHS64AVFWE	N/A

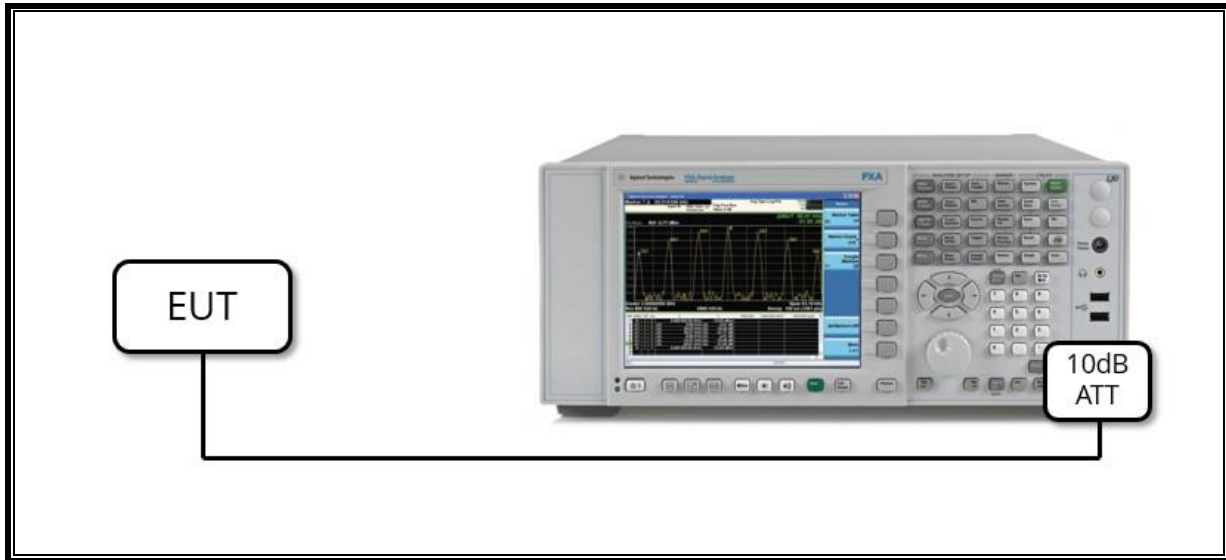
### I/O CABLE

I/O Cable List						
Cable No.	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	C Type	Shielded	1.0 m	N/A
2	Audio	2	Mini-Jack	Unshielded	0.7 m	N/A

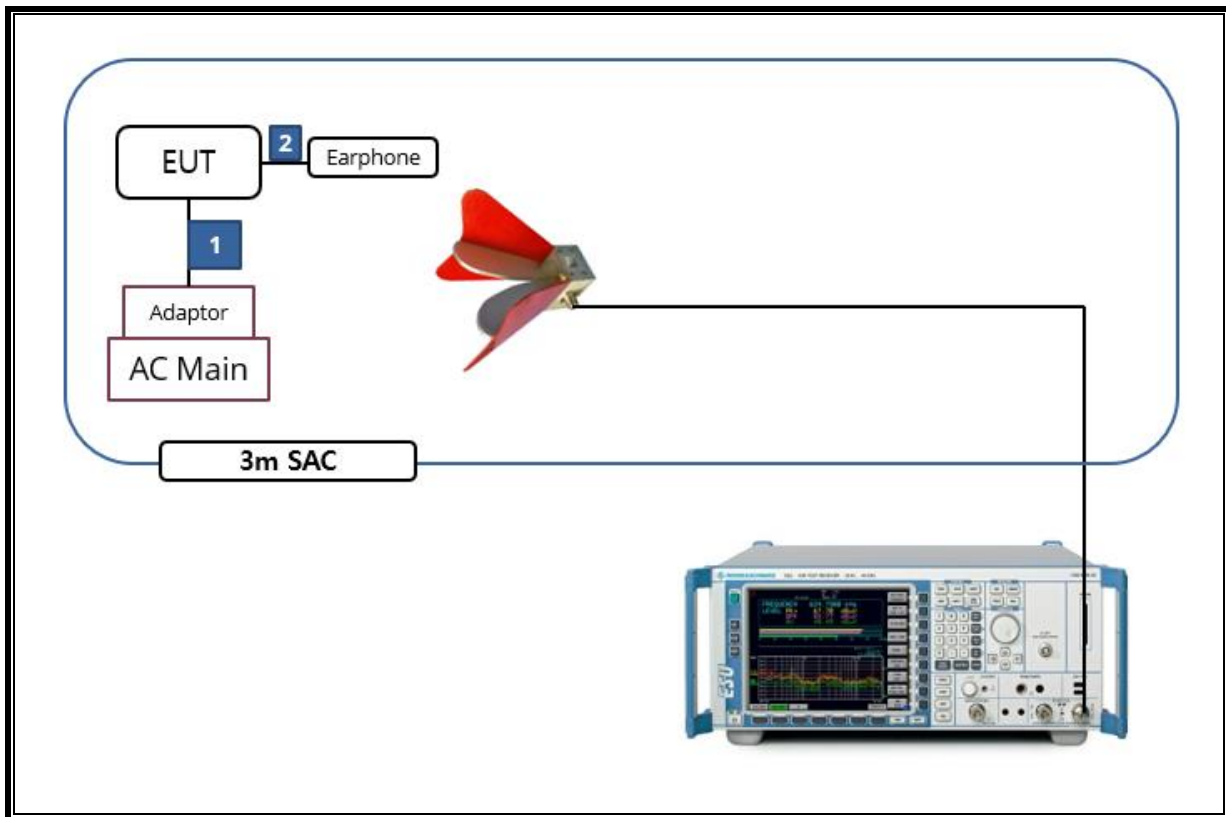
### TEST SETUP

The EUT is a stand-alone unit during the tests.  
 Test software in hidden menu exercised the EUT to enable BLE mode.

**SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)**



**SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)**



## 6. MEASUREMENT METHOD

6 dB BW : ANSI C63.10-2013, Section 11.8.2 Option 2

OUTPUT POWER : ANSI C63.10-2013, Section 11.9.1.1 RBW  $\geq$  DTS bandwidth

POWER SPECTRAL DENSITY : ANSI C63.10-2013, Section 11.10.2 Method PKPSD (peak PSD)

Out-of-band Emissions (Conducted) : ANSI C63.10-2013, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Non-restricted Bands: ANSI C63.10-2013, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Restricted Bands : ANSI C63.10-2013, Section 11.12 Emissions in restricted frequency bands

AC Power Line Conducted Emission : ANSI C63.10-2013, Section 6.2

## 7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2022/08/19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2022/08/13
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2022/08/13
Antenna, Horn, 18 GHz	ETS	3115	00167211	2022/07/27
Antenna, Horn, 18 GHz	ETS	3115	00161451	2022/08/15
Antenna, Horn, 18 GHz	ETS	3117	00168724	2022/07/27
Antenna, Horn, 18 GHz	ETS	3117	00168717	2022/08/15
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2022/08/04
Preamplifier	ETS	3116C-PA	00168841	2022/08/04
Preamplifier, 1000 MHz	Sonoma	310N	341282	2022/08/02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2022/08/02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2022/08/02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2022/08/02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2022/08/02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029168	2022/08/02
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2022/08/04
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2022/08/04
Average Power Sensor	Agilent / HP	U2000	MY54270007	2022/08/04
Average Power Sensor	Agilent / HP	U2000	MY54260010	2022/08/04
Attenuator	PASTERNAK	PE7087-10	A001	2022/08/03
Attenuator	PASTERNAK	PE7087-10	A008	2022/08/03
Attenuator	PASTERNAK	PE7004-10	2	2022/08/02
Attenuator	PASTERNAK	PE7087-10	A009	2022/08/03
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022/08/02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022/08/02
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2022/08/02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	2022/08/02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	2022/08/02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	019	2022/08/02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	2022/08/02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	2022/08/02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	2022/08/02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	2022/08/02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	016	2022/08/02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	020	2022/08/02
LISN	R&S	ENV-216	101837	2022/08/05
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2023/10/06
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

## 8. TEST RESULTS SUMMARY

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	Occupied Bandwidth(6dB)	> 500kHz	Conducted	PASS
2.1051, 15.247(d)	Band Edge / Conducted Spurious Emission	-20 dBc		PASS
15.247 (b)(3)	TX conducted output power	< 30 dBm		PASS
15.247(e)	PSD	< 8 dBm/3kHz		PASS
15.207(a)	AC Power Line conducted emissions	Section 11	Power Line conducted	PASS
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m(Av)	Radiated	PASS

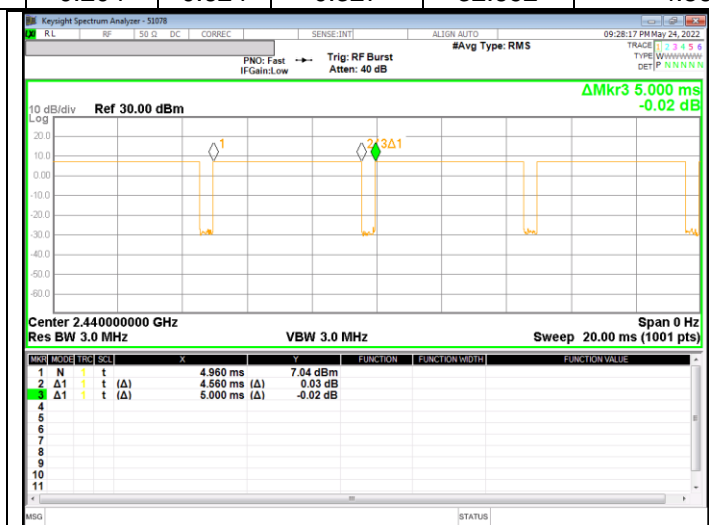
## 9. ANTENNA PORT TEST RESULTS

### 9.1. ON TIME AND DUTY CYCLE

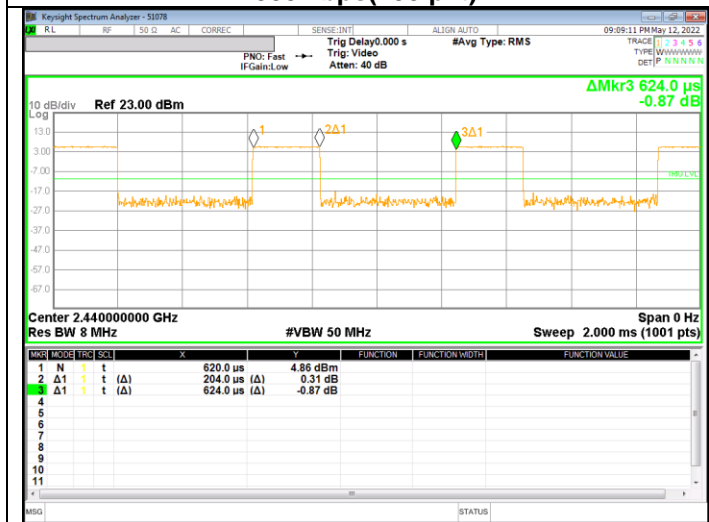
#### LIMITS

None; for reporting purposes only.

Mode	On time [msec]	Period [msec]	Duty cycle x [Linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
<b>2 400 ~ 2 483.5 MHz Bands</b>						
500 kbps [255pkt]	4.560	5.000	0.912	91.200	0.40	0.219
2 Mbps [37pkt]	0.204	0.624	0.327	32.692	4.86	4.902



500 kbps(255 pkt)



2 Mbps(37 pkt)

## 9.2. 6 dB BANDWIDTH

### LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

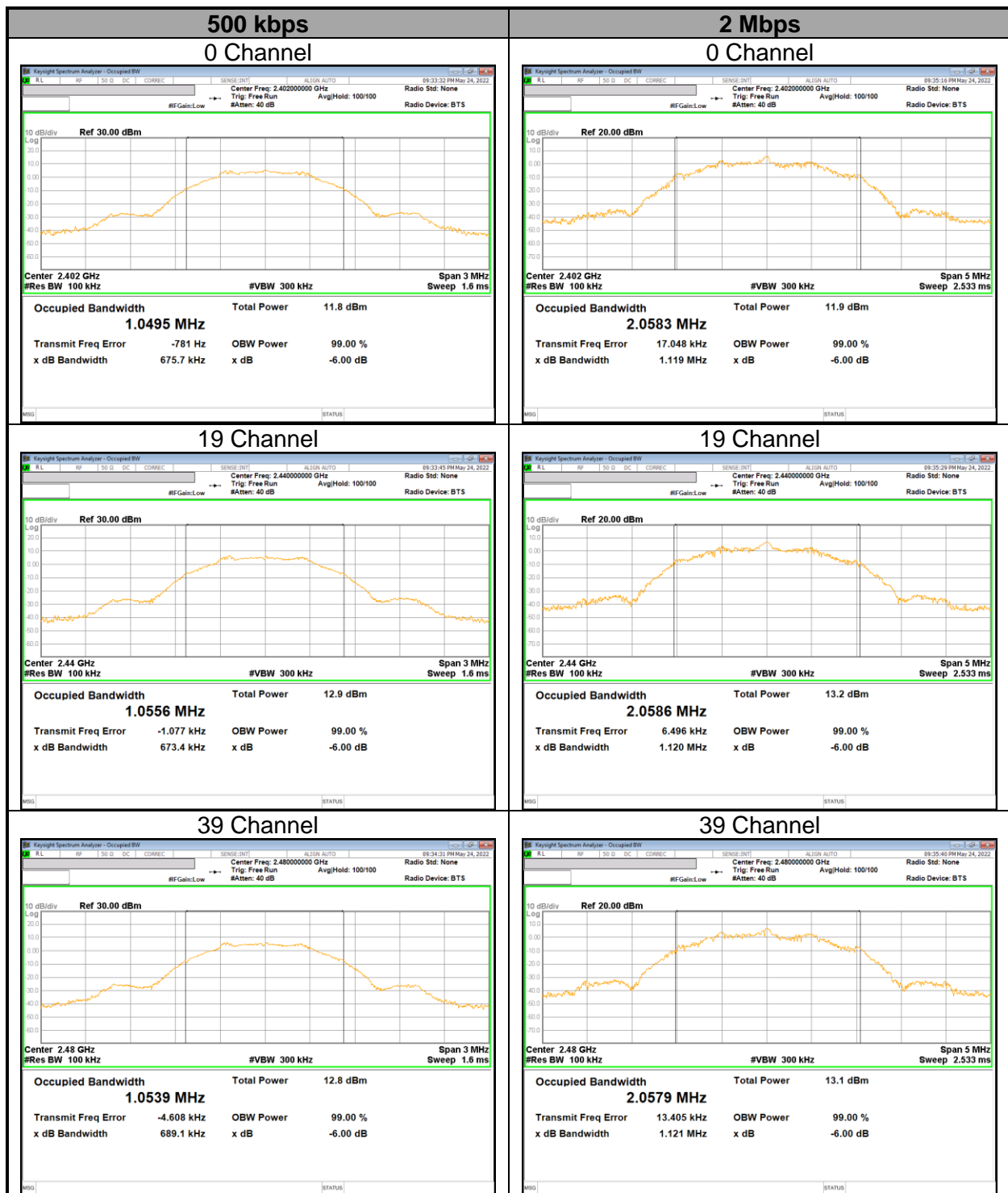
### RESULTS

#### 9.2.1. Test data

Mode	Channel	Frequency [MHz]	6 dB Bandwidth [kHz]	Minimum Limit [kHz]
500kbps	0	2 402	675.7	500.0
	<b>19</b>	<b>2 440</b>	<b>673.4</b>	<b>500.0</b>
	39	2 480	689.1	500.0
2Mbps	0	2 402	1119.0	500.0
	19	2 440	1120.0	500.0
	39	2 480	1121.0	500.0
<b>Worst</b>			<b>673.4</b>	500.0



### 9.2.2. 6 dB BANDWIDTH PLOTS



### 9.3. OUTPUT POWER

#### LIMITS

FCC §15.247 (b) (3)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

#### TEST PROCEDURE

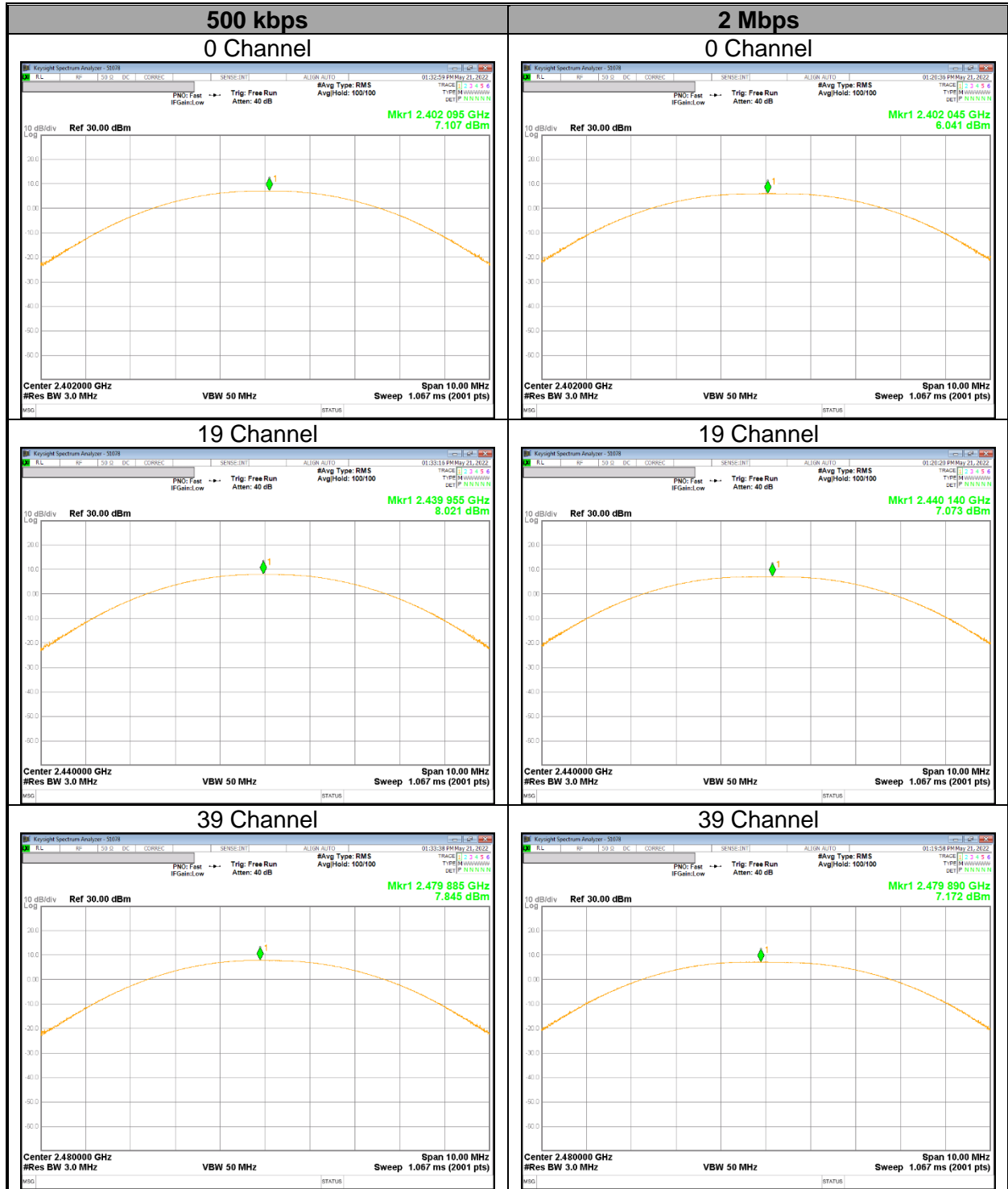
Peak power is measured using ANSI C63.10(2013) under section 11.9.1.1 utilizing spectrum analyzer(RBW  $\cong$  DTS bandwidth).

#### RESULTS

##### 9.3.1. Test data

Mode	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
500kbps (255 pkt)	0	2 402	7.107	30.000	-22.893
	<b>19</b>	<b>2 440</b>	<b>8.021</b>		<b>-21.979</b>
	39	2 480	7.845		-22.155
2Mbps (37 pkt)	0	2 402	6.041		-23.959
	19	2 440	7.073		-22.927
	39	2 480	7.172		-22.828
Worst			<b>8.021</b>		<b>-21.979</b>

### 9.3.2. PEAK POWER PLOTS



## 9.4. AVERAGE POWER

### LIMITS

None; for reporting purposes only.

### TEST PROCEDURE

Measurements perform using a wideband RF frame average power sensor. The cable assembly insertion loss and duty cycle correction factor were entered as an offset in the power meter to allow for direct reading of power.

### RESULTS

#### 9.4.1. Test data

Mode	Channel	Frequency [MHz]	Average Output Power [dBm]	Average Output Power [mW]
500kbps	0	2 402	6.408	4.373
	19	2 440	7.660	5.834
	39	2 480	7.422	5.523
2Mbps	0	2 402	5.422	3.485
	19	2 440	6.451	4.417
	39	2 480	6.581	4.551

## 9.5. POWER SPECTRAL DENSITY

### LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### TEST PROCEDURE

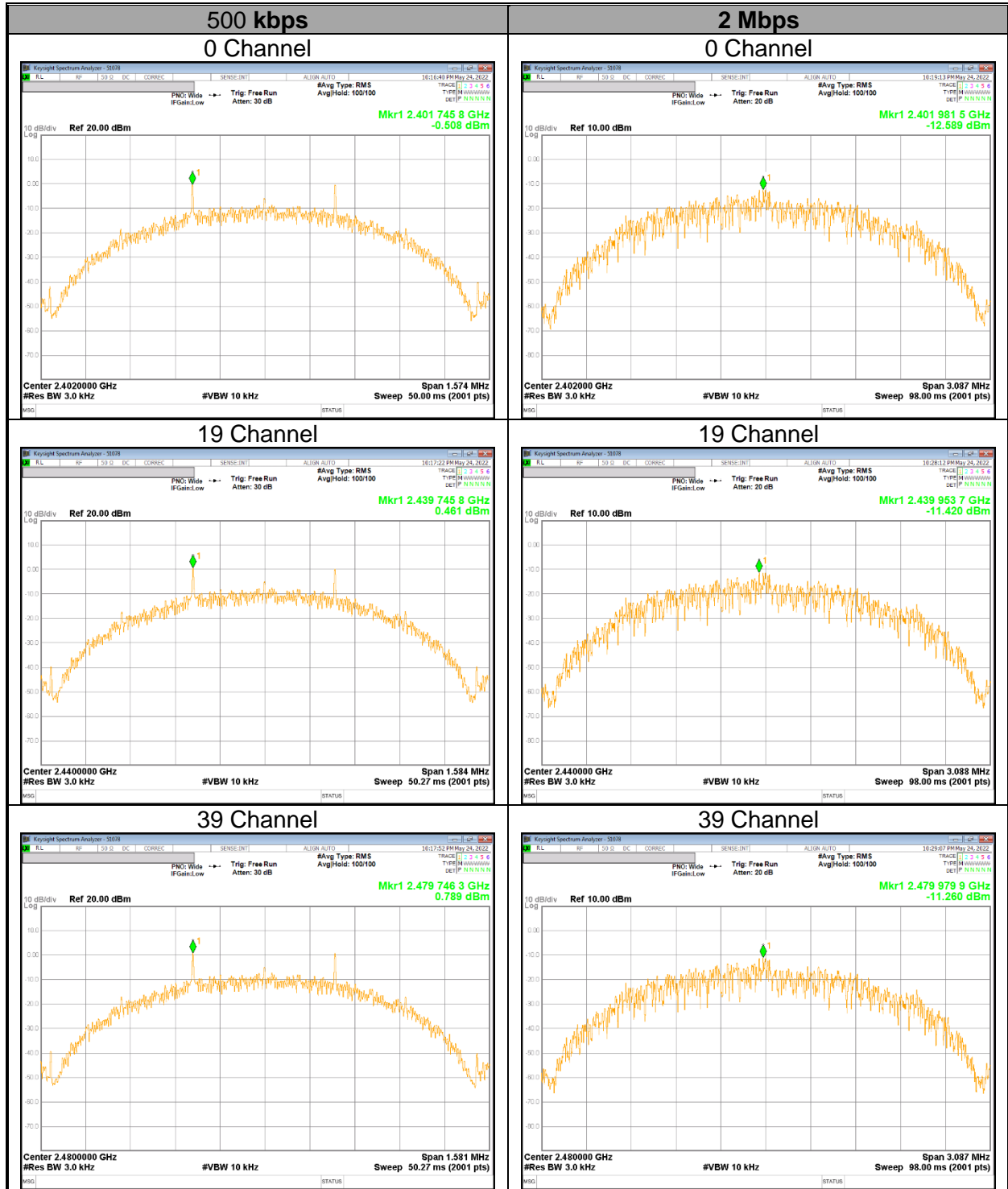
ANSI C63.10-2013, Section 11.10.2 Method PKPSD (peak PSD)

### RESULTS

#### 9.5.1. Test data

Mode	Channel	Frequency [MHz]	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Margin [dB]
500kbps (255pkt)	0	2 402	-0.508	8.00	-8.508
	19	2 440	0.461		-7.539
	39	2 480	<b>0.789</b>		<b>-7.211</b>
2Mbps (37pkt)	0	2 402	-12.589		-20.589
	19	2 440	-11.420		-19.420
	39	2 480	-11.260		-19.260
Worst			<b>0.789</b>	<b>-7.211</b>	

### 9.5.2. PSD TEST PLOTS



## 9.6. CONDUCTED SPURIOUS EMISSIONS

### LIMITS

FCC §15.247 (d)

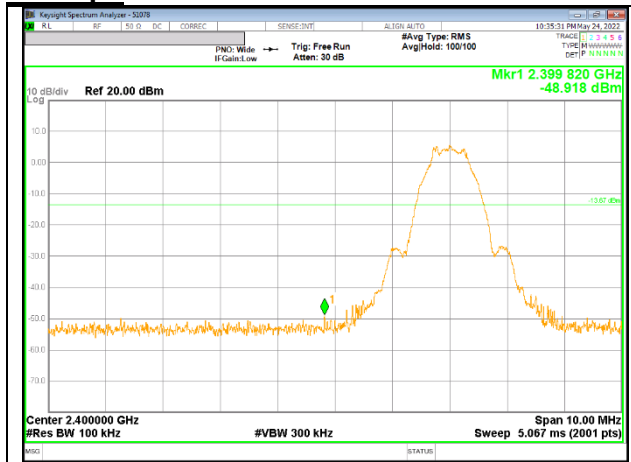
RSS-247 5.5

Output power was measured based on the use of a peak measurement.  
Therefore, spurious emissions are required to be 20 dBc.

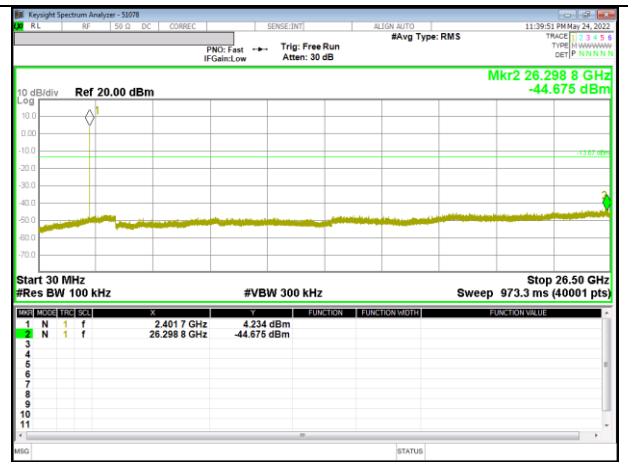
### RESULTS

### 9.6.1. Test plot

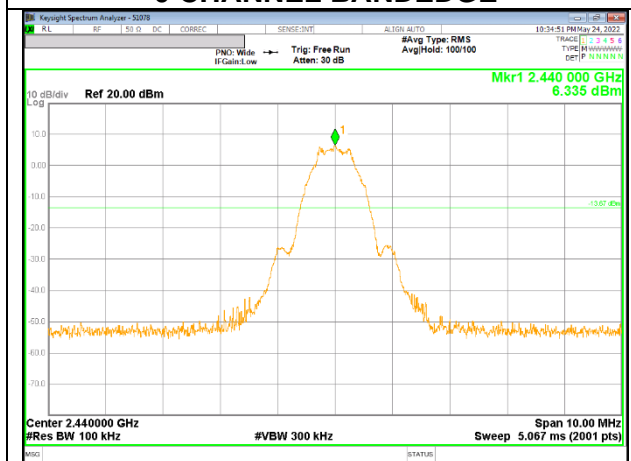
#### 500kbps



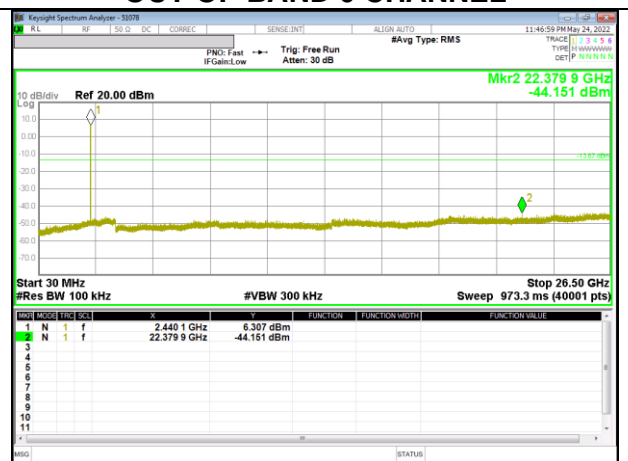
**0 CHANNEL BANDEDGE**



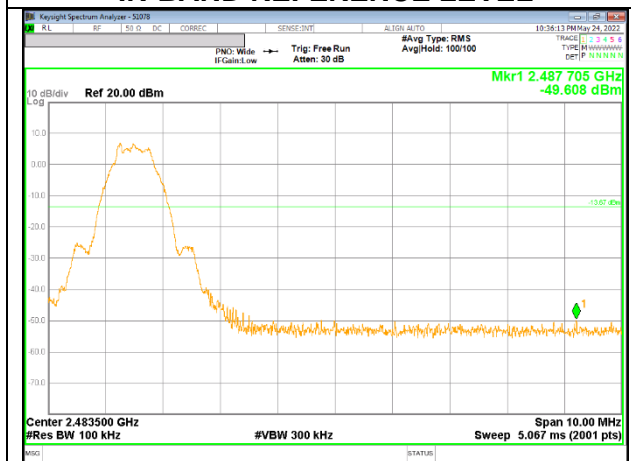
**OUT-OF-BAND 0 CHANNEL**



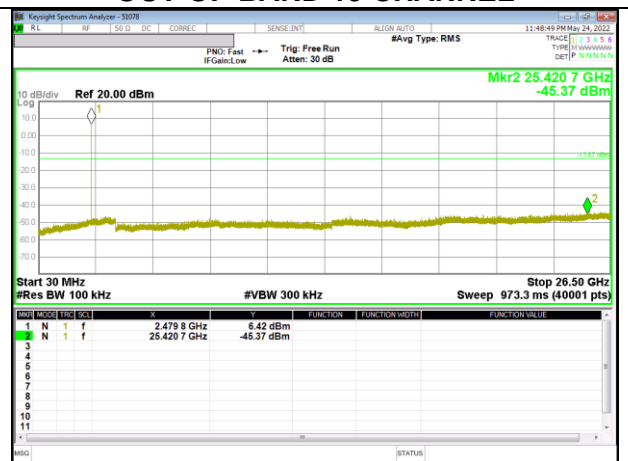
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND 19 CHANNEL**



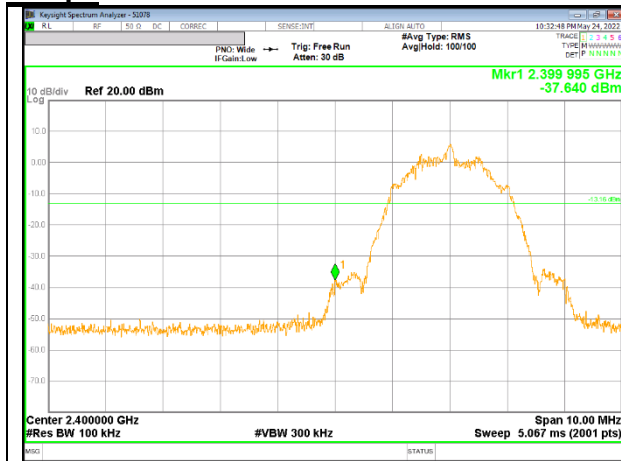
**39 CHANNEL BANDEDGE**



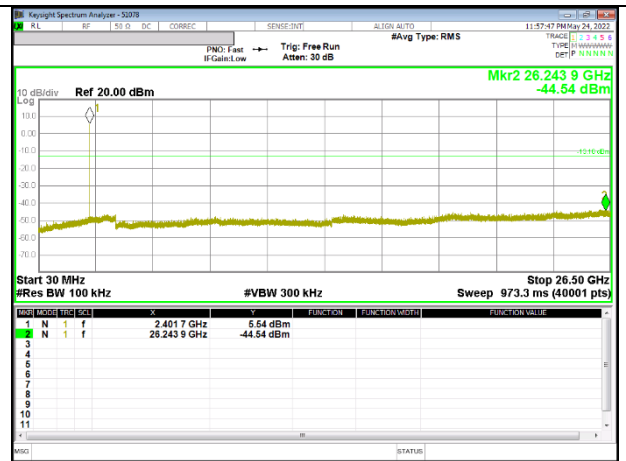
**OUT-OF-BAND 39 CHANNEL**



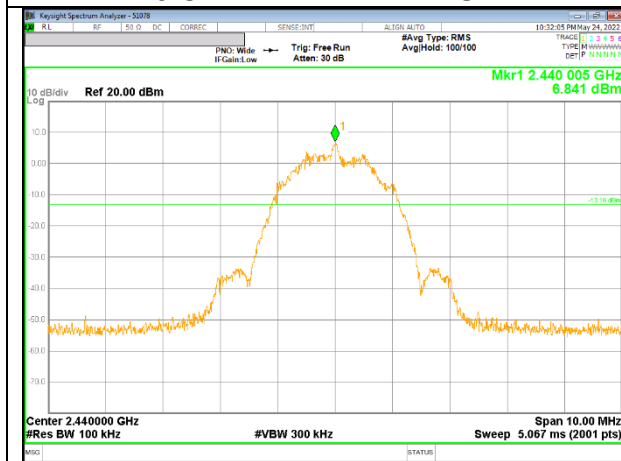
2Mbps



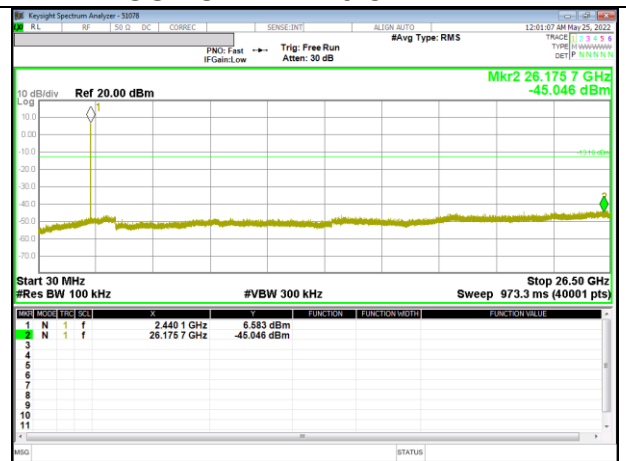
0 CHANNEL BANDEDGE



OUT-OF-BAND 0 CHANNEL



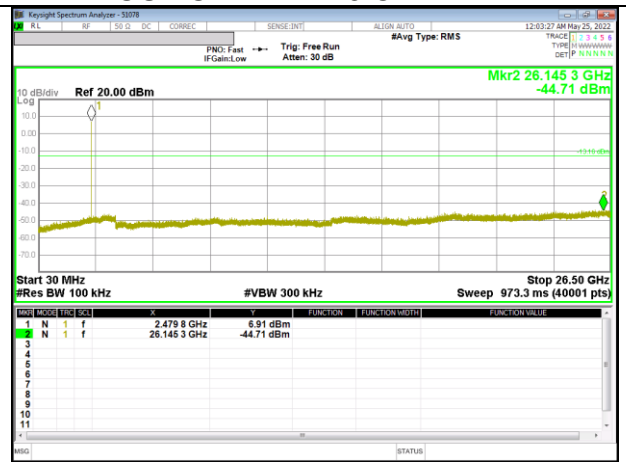
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 19 CHANNEL



39 CHANNEL BANDEDGE



OUT-OF-BAND 39 CHANNEL

## 10. RADIATED TEST RESULTS

### 10.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits ( $\mu\text{V/m}$ )	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.

## **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 antenna to EUT distance is 3 meters. 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, then the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restricted band-edge, Final detection of spurious harmonic emissions)  
Duty cycle factor =  $10 \log(1/x)$ . For this sample: For 500 kbps, DCF =  $10 \log(1/0.912) = 0.400$  dB (Spectrum Analyzer round it up to 0.40 dB) and for 2 Mbps, DCF =  $10 \log(1/0.327) = 4.856$  dB (Spectrum Analyzer round it up to 4.86 dB).

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.

The spectrum from 1 GHz 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.

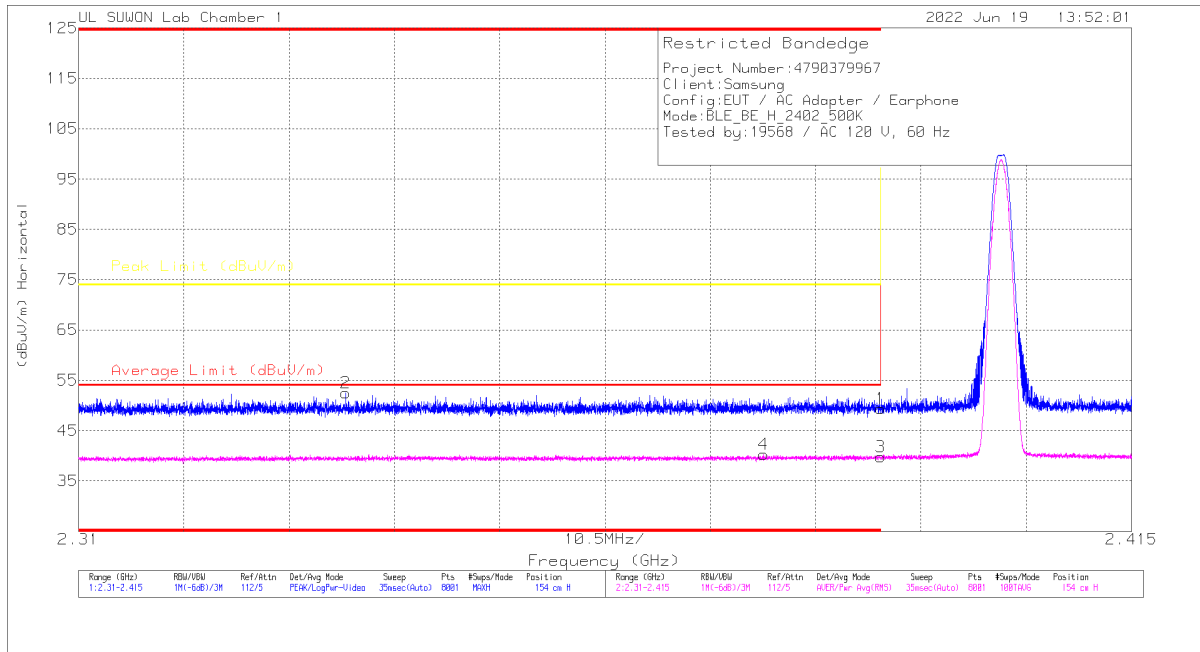
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.  
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field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

## 10.2. TRANSMITTER ABOVE 1 GHz

### 10.2.1. 500 kbps

#### BANDEDGE (0 CHANNEL)

#### HORIZONTAL RESULT

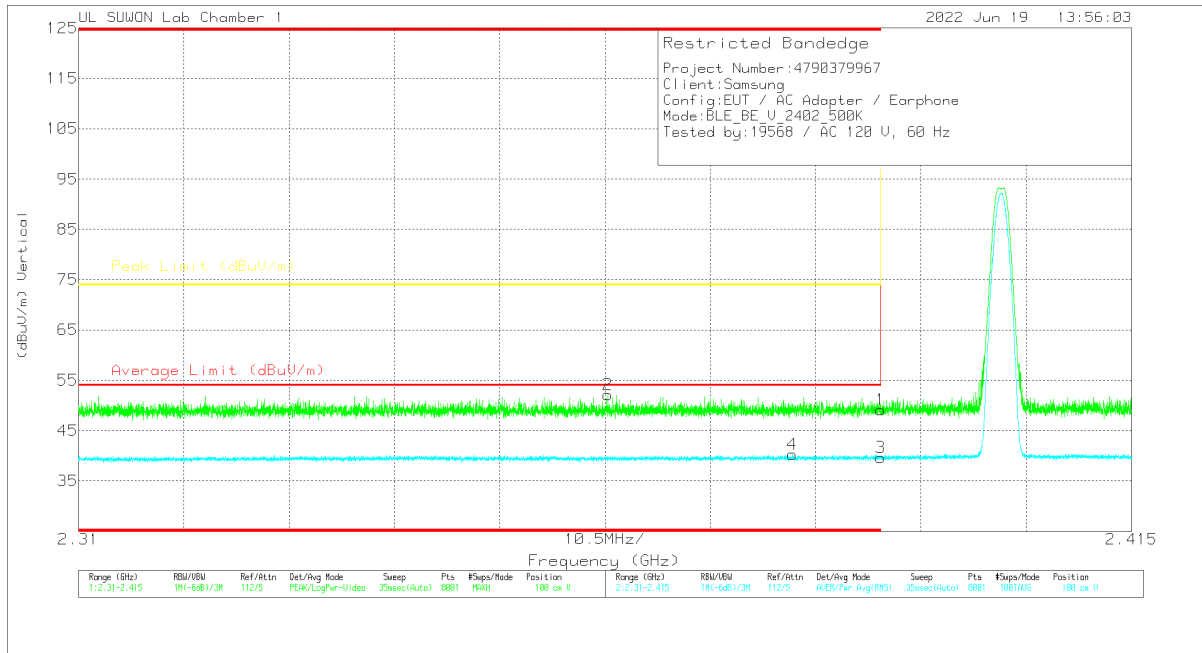


#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Height (cm)	Polarity
1	* 2.39	42.83	Pk	31.8	-25.2	0	49.43	-	-	74	-24.57	154	H
2	* 2.33664	46.15	Pk	31.7	-25.4	0	52.45	-	-	74	-21.55	154	H
3	* 2.39	32.73	RMS	31.8	-25.2	.4	39.73	54	-14.27	-	-	154	H
4	* 2.37829	33.35	RMS	31.8	-25.3	.4	40.25	54	-13.75	-	-	154	H

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

### VERTICAL RESULT



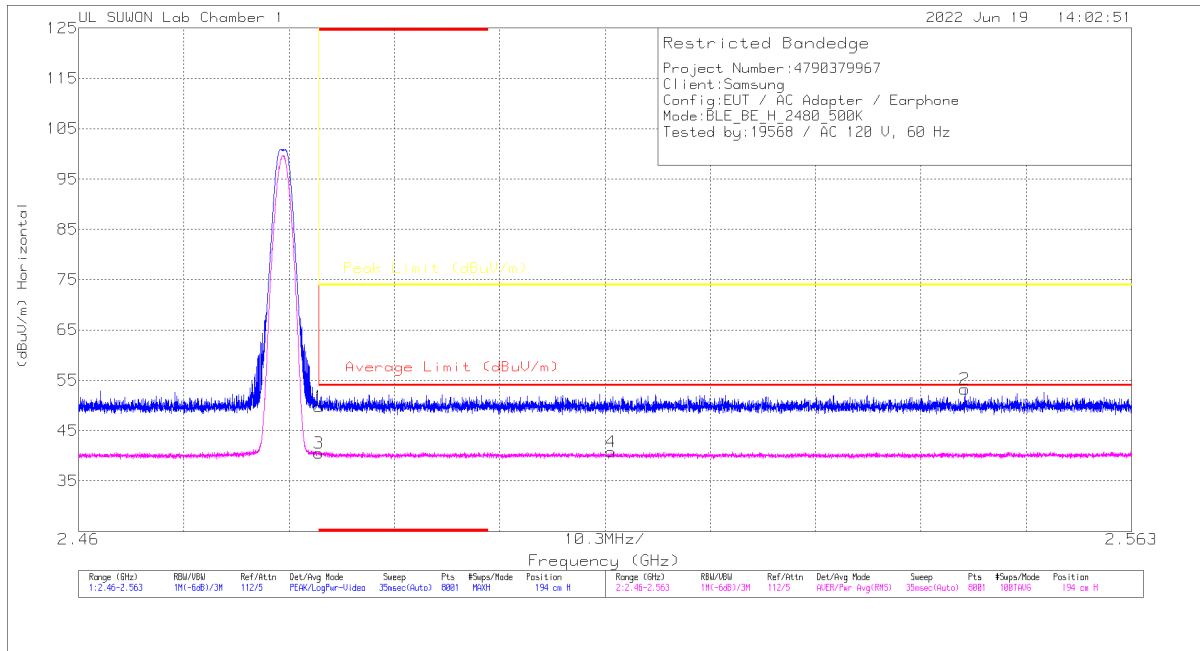
#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Height (cm)	Polarity
1	* 2.39	42.5	Pk	31.8	-25.2	0	49.1	-	-	74	-24.9	100	V
2	* 2.36276	45.84	Pk	31.7	-25.4	0	52.14	-	-	74	-21.86	100	V
3	* 2.39	32.66	RMS	31.8	-25.2	.4	39.66	54	-14.34	-	-	100	V
4	* 2.38119	33.33	RMS	31.8	-25.3	.4	40.23	54	-13.77	-	-	100	V

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

**BANDEDGE (39 CHANNEL)**

**HORIZONTAL RESULT**

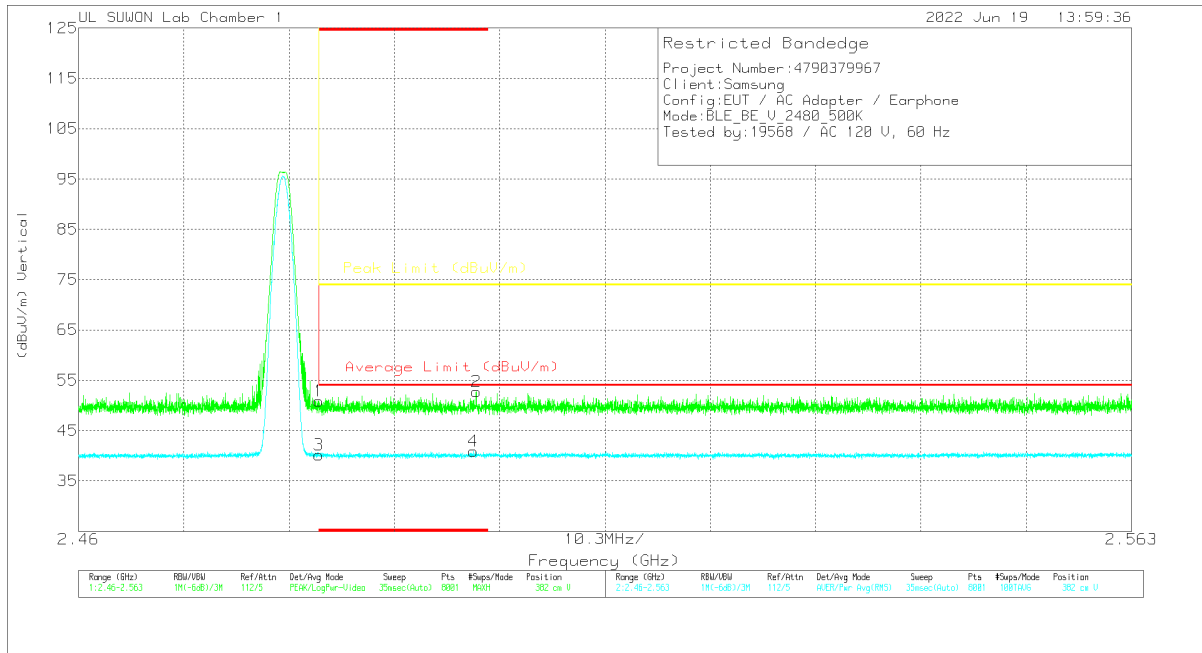


**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Height (cm)	Polarity
1	* 2.48351	42.73	Pk	32	-25	0	49.73	-	-	74	-24.27	194	H
2	2.54669	46.11	Pk	32	-24.9	0	53.21	-	-	74	-20.79	194	H
3	* 2.48351	33.17	RMS	32	-25	.4	40.57	54	-13.43	-	-	194	H
4	2.51207	33.24	RMS	32	-24.8	.4	40.84	54	-13.16	-	-	194	H

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

### VERTICAL RESULT



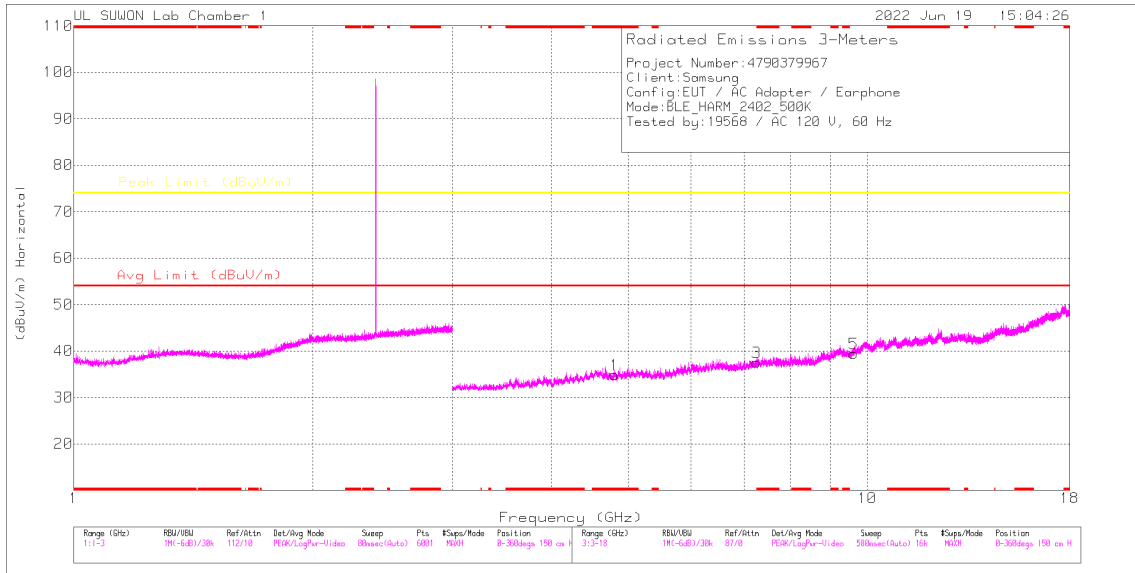
#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Height (cm)	Polarity
1	* 2.48351	43.83	Pk	32	-25	0	50.83	-	-	74	-23.17	382	V
2	* 2.4989	45.54	Pk	32	-24.8	0	52.74	-	-	74	-21.26	382	V
3	* 2.48351	32.73	RMS	32	-25	.4	40.13	54	-13.87	-	-	382	V
4	* 2.49863	33.43	RMS	32	-24.9	.4	40.93	54	-13.07	-	-	382	V

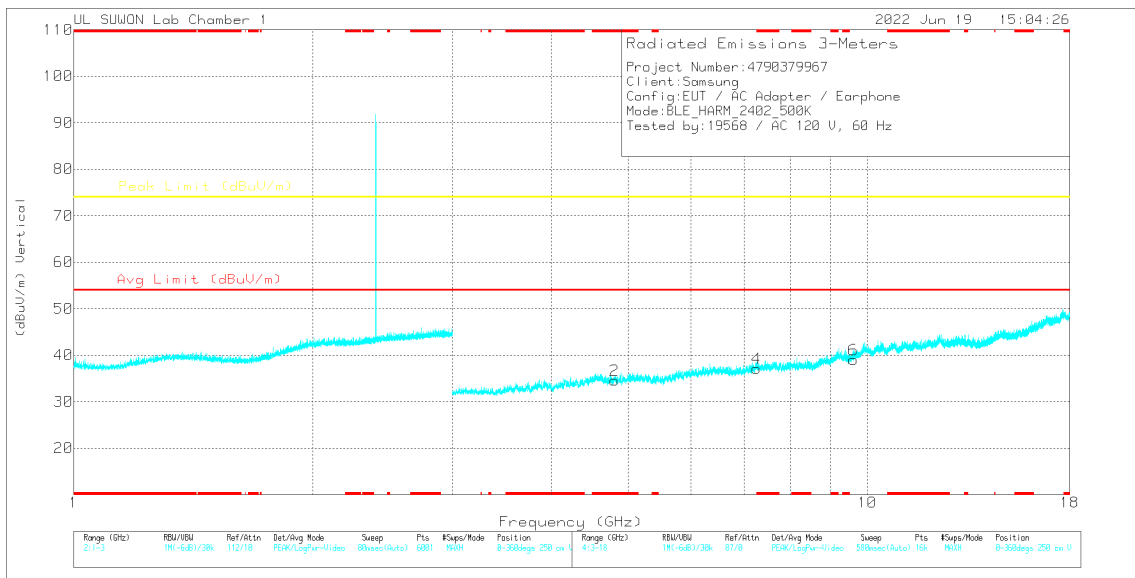
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Pk - Peak detector  
 RMS - RMS detection

# 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.

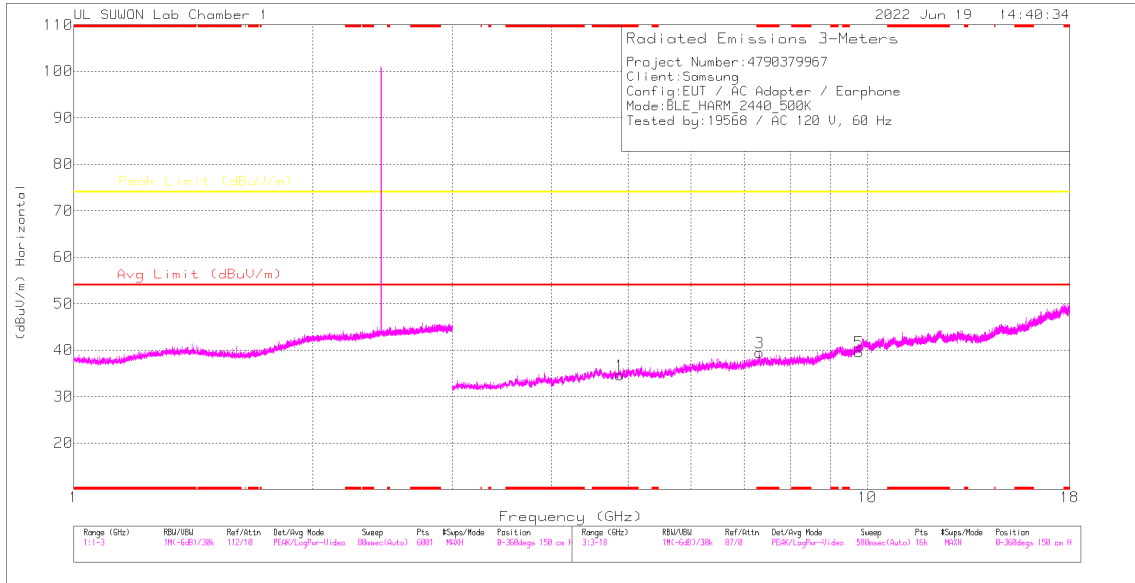
### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HPF(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80447	41.96	PK2	34.1	-31.1	0	44.96	-	-	74	-29.04	360	100	H
* 4.80468	42.07	PK2	34.1	-31.1	0	45.07	-	-	74	-28.93	360	100	V
* 7.25991	38.01	PK2	35.8	-27.4	0	46.41	-	-	74	-27.59	360	100	H
* 7.26114	37.74	PK2	35.8	-27.4	0	46.14	-	-	74	-27.86	360	100	V
9.60964	34.84	PK2	37.1	-23.1	0	48.84	-	-	74	-25.16	360	100	H
9.60777	34.48	PK2	37.1	-23.1	0	48.48	-	-	74	-25.52	360	100	V

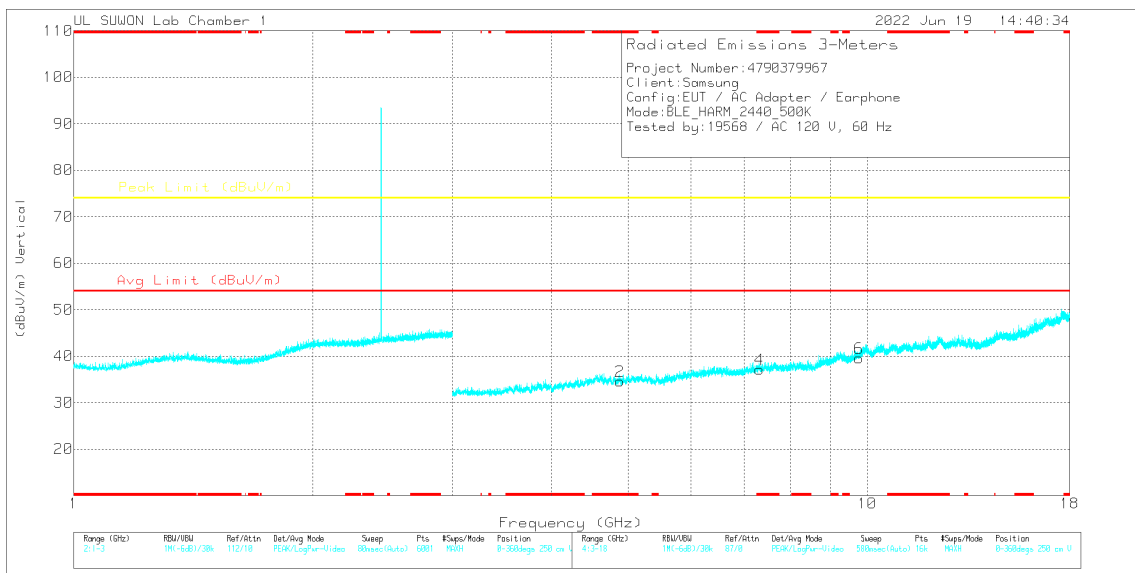
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak



### 19 CHANNEL RESULTS



### HORIZONTAL



### VERTICAL

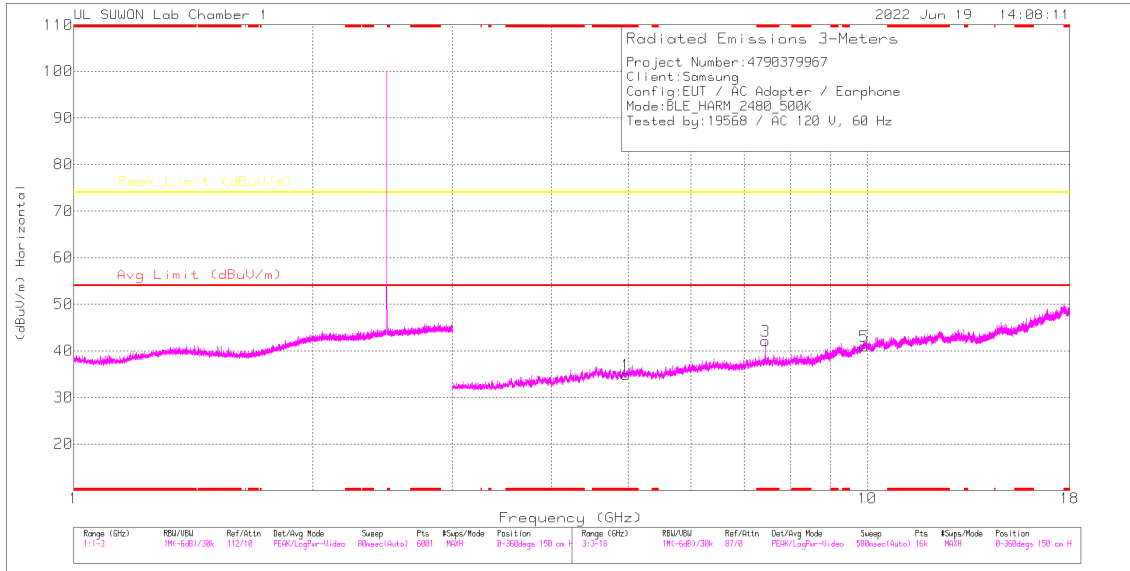
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

### Radiated Emissions

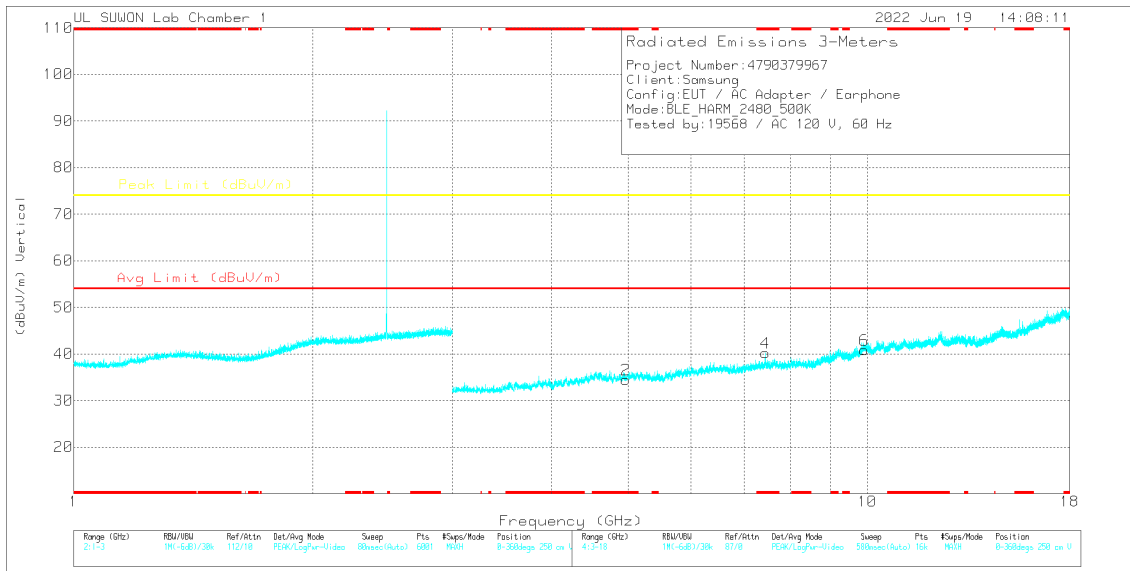
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.87851	41.4	PK2	34.1	-31.3	0	44.2	-	-	74	-29.8	360	100	H
* 4.87874	41.59	PK2	34.1	-31.3	0	44.39	-	-	74	-29.61	360	100	V
* 7.32022	38.7	PK2	35.8	-27.2	0	47.3	-	-	74	-26.7	360	100	H
* 7.3204	38.38	PK2	35.8	-27.2	0	46.98	-	-	74	-27.02	360	100	V
9.76085	35.43	PK2	37.4	-23.7	0	49.13	-	-	74	-24.87	360	100	H
9.75983	35.07	PK2	37.4	-23.6	0	48.87	-	-	74	-25.13	360	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak

### 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

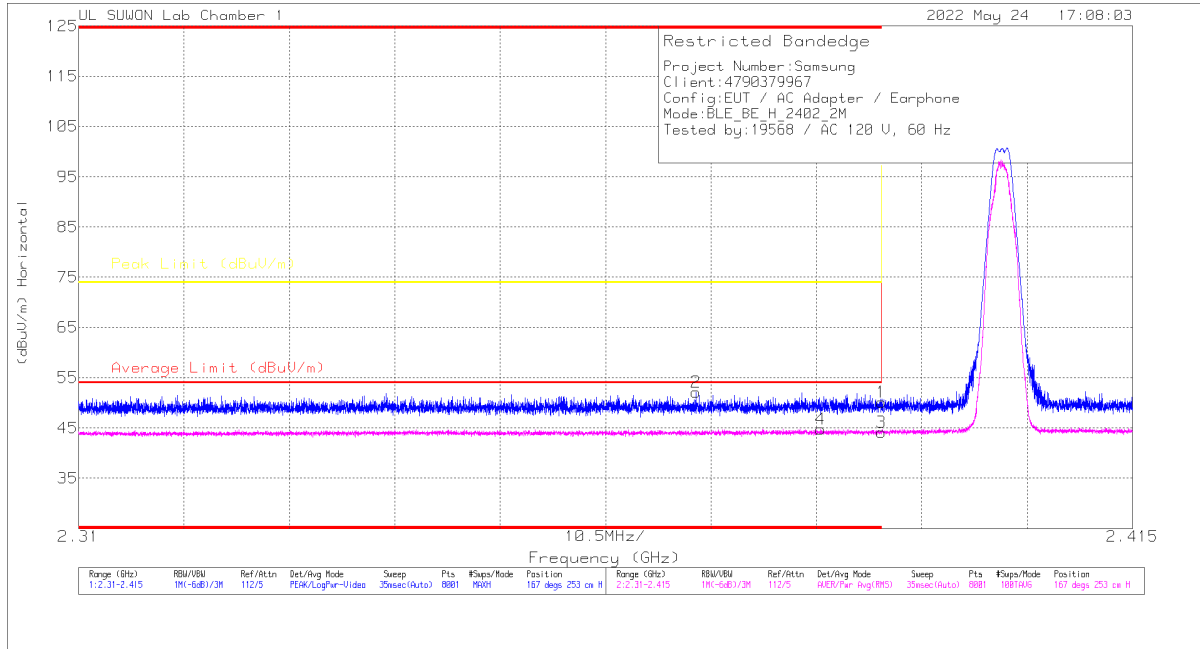
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016671 7	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.96294	41.45	PK2	34.1	-31.3	0	44.25	-	-	74	-29.75	0	100	H
* 4.96259	41.59	PK2	34.1	-31.3	0	44.39	-	-	74	-29.61	0	100	V
* 7.4405	40.21	PK2	35.8	-26.7	0	49.31	-	-	74	-24.69	332	125	H
* 7.4407	30.38	MAv1	35.8	-26.7	.4	39.88	54	-14.12	-	-	332	125	H
* 7.43932	40.79	PK2	35.8	-26.6	0	49.99	-	-	74	-24.01	190	104	V
* 7.43926	30.38	MAv1	35.8	-26.6	.4	39.98	54	-14.02	-	-	190	104	V
9.91877	34.16	PK2	37.7	-21.6	0	50.26	-	-	74	-23.74	0	100	H
9.91963	34.02	PK2	37.7	-21.6	0	50.12	-	-	74	-23.88	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak  
 MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.2. 2 Mbps

BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT

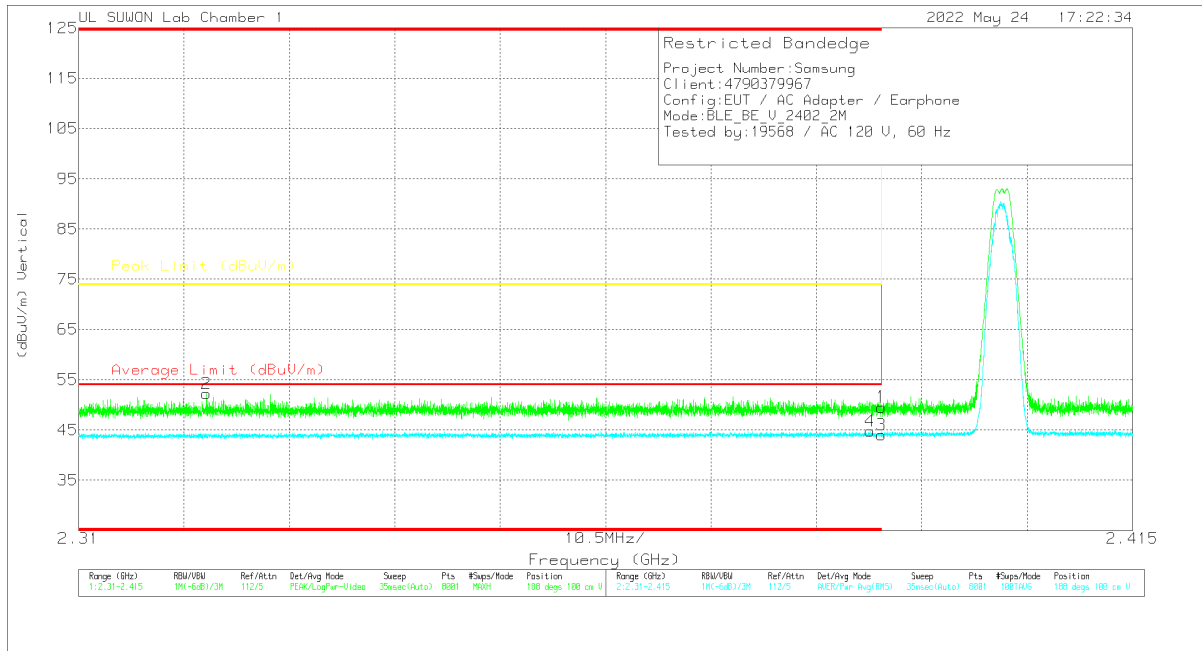


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	DC Corr (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	43.58	Pk	31.8	-25.2	0	50.18	-	-	74	-23.82	167	253	H
2	* 2.3715	45.71	Pk	31.7	-25.3	0	52.11	-	-	74	-21.89	167	253	H
3	* 2.39	32.7	RMS	31.8	-25.2	4.86	44.16	54	-9.84	-	-	167	253	H
4	* 2.38391	33.42	RMS	31.8	-25.3	4.86	44.78	54	-9.22	-	-	167	253	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK - Peak detector  
 RMS - RMS detection

### VERTICAL RESULT



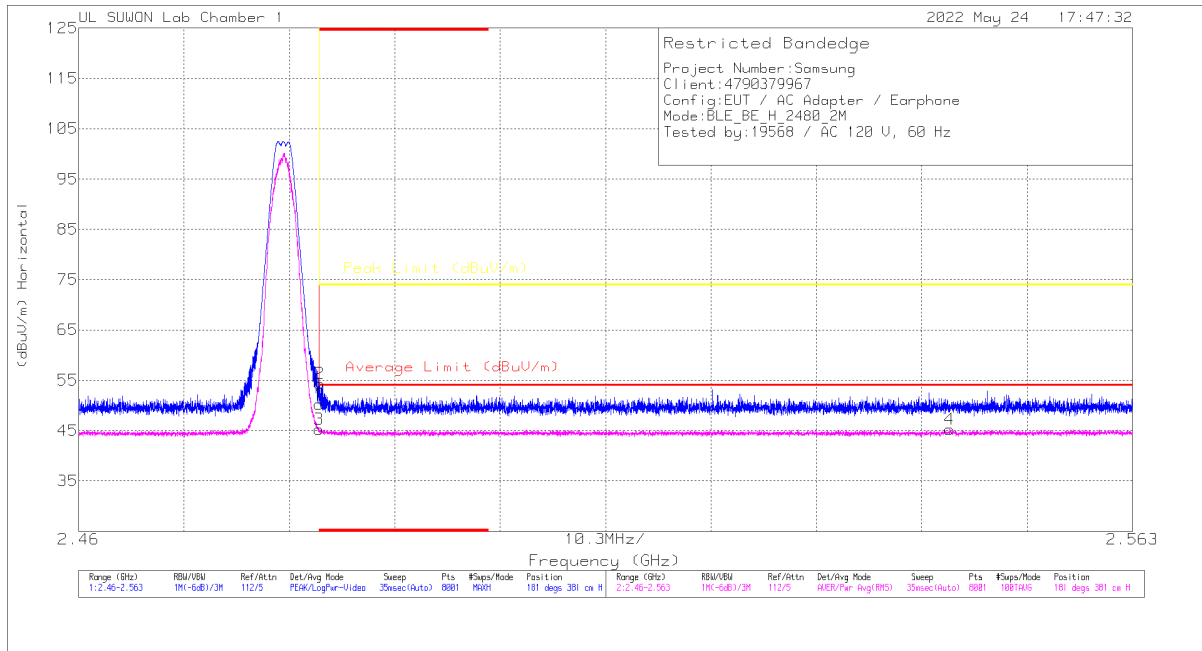
#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	DC Cor (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	42.97	Pk	31.8	-25.2	0	49.57	-	-	74	-24.43	188	100	V
2	* 2.3274	46.03	Pk	31.6	-25.4	0	52.23	-	-	74	-21.77	188	100	V
3	* 2.39	32.59	RMS	31.8	-25.2	-4.86	44.05	54	-9.95	-	-	188	100	V
4	* 2.38883	33.26	RMS	31.8	-25.2	-4.86	44.72	54	-9.28	-	-	188	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK - Peak detector  
 RMS - RMS detection

**BANDEDGE (39 CHANNEL)**

**HORIZONTAL RESULT**

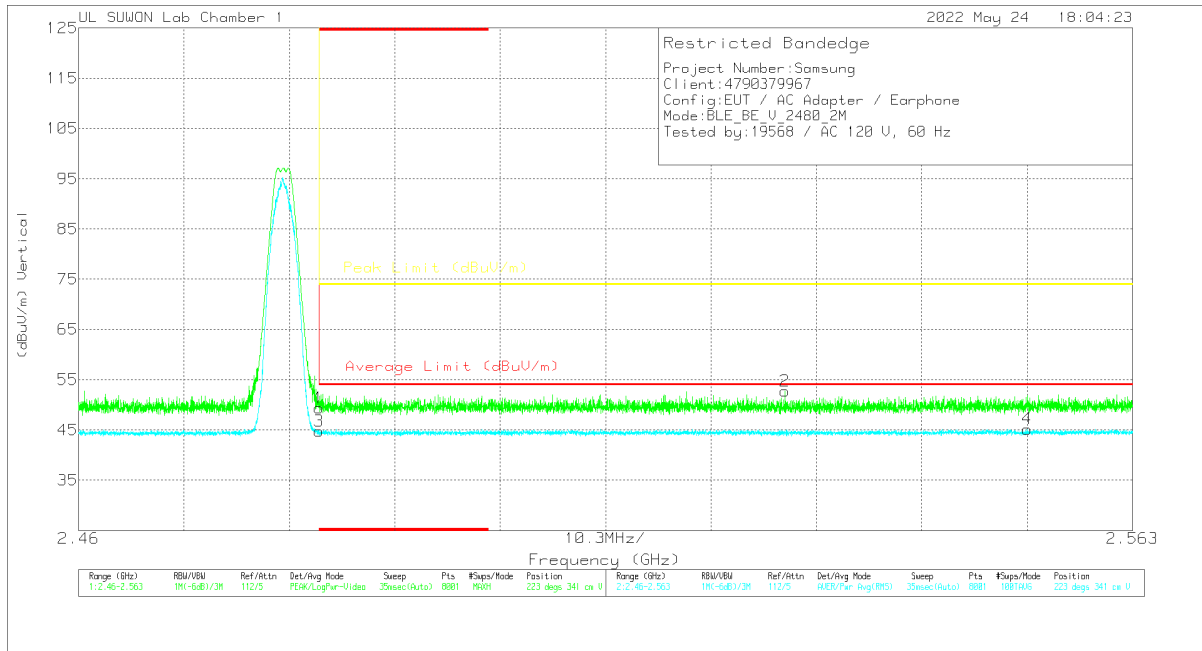


**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	DC Corr (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	43.31	Pk	32	-25	0	50.31	-	-	74	-23.69	181	381	H
2	* 2.48355	47.42	Pk	32	-25	0	54.42	-	-	74	-19.58	181	381	H
3	* 2.48351	33.41	RMS	32	-25	4.86	45.27	54	-8.73	-	-	181	381	H
4	2.54514	33.17	RMS	32	-24.8	4.86	45.23	54	-8.77	-	-	181	381	H

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

### VERTICAL RESULT



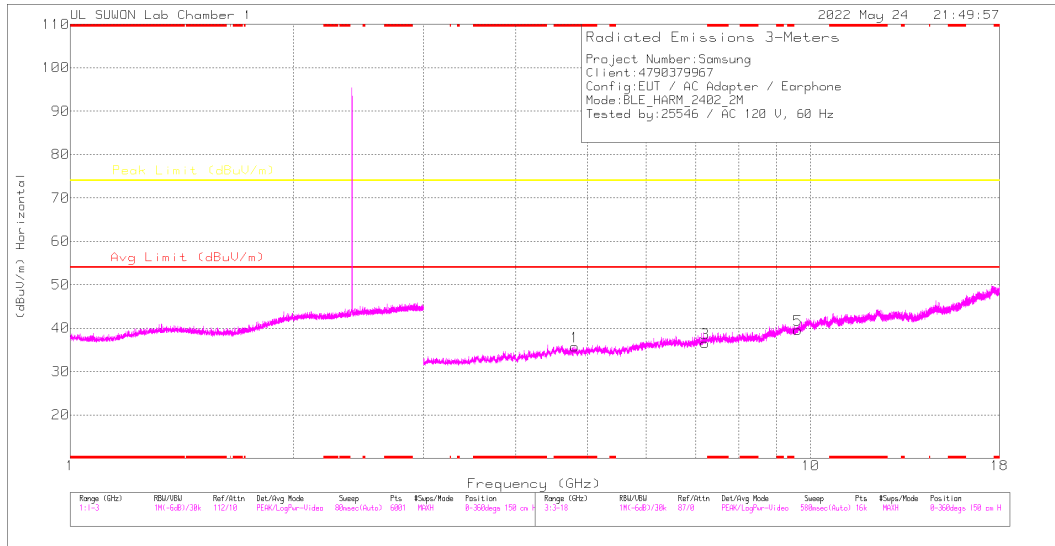
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	DC Corr (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	42.36	Pk	32	-25	0	49.36	-	-	74	-24.64	223	341	V
2	2.52902	45.7	Pk	32	-24.9	0	52.8	-	-	74	-21.2	223	341	V
3	* 2.48351	32.9	RMS	32	-25	-4.86	44.76	54	-9.24	-	-	223	341	V
4	2.55271	33.15	RMS	32.1	-24.9	-4.86	45.21	54	-8.79	-	-	223	341	V

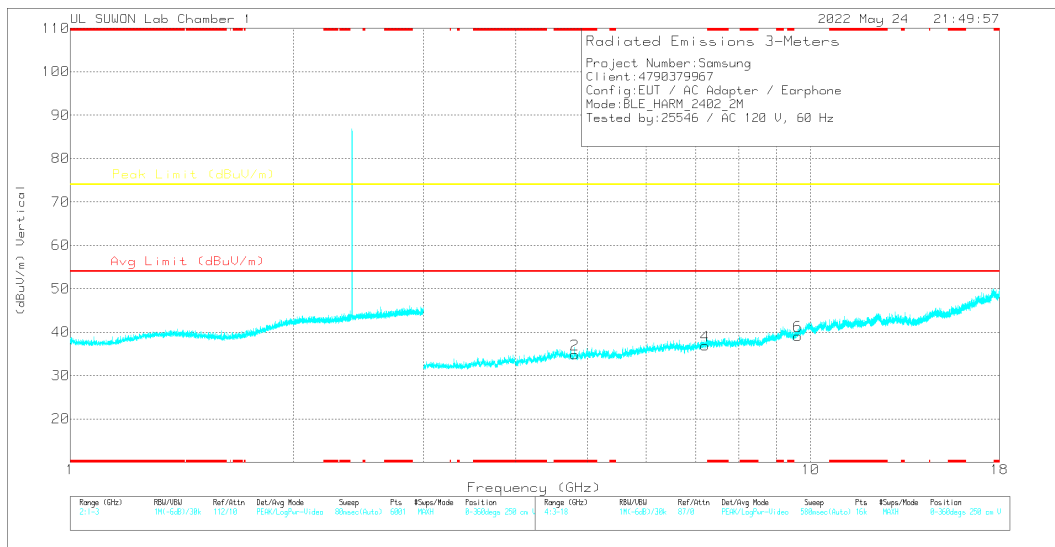
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK - Peak detector  
 RMS - RMS detection

# HARMONICS AND SPURIOUS EMISSIONS

## 0 CHANNEL RESULTS



## HORIZONTAL



## VERTICAL

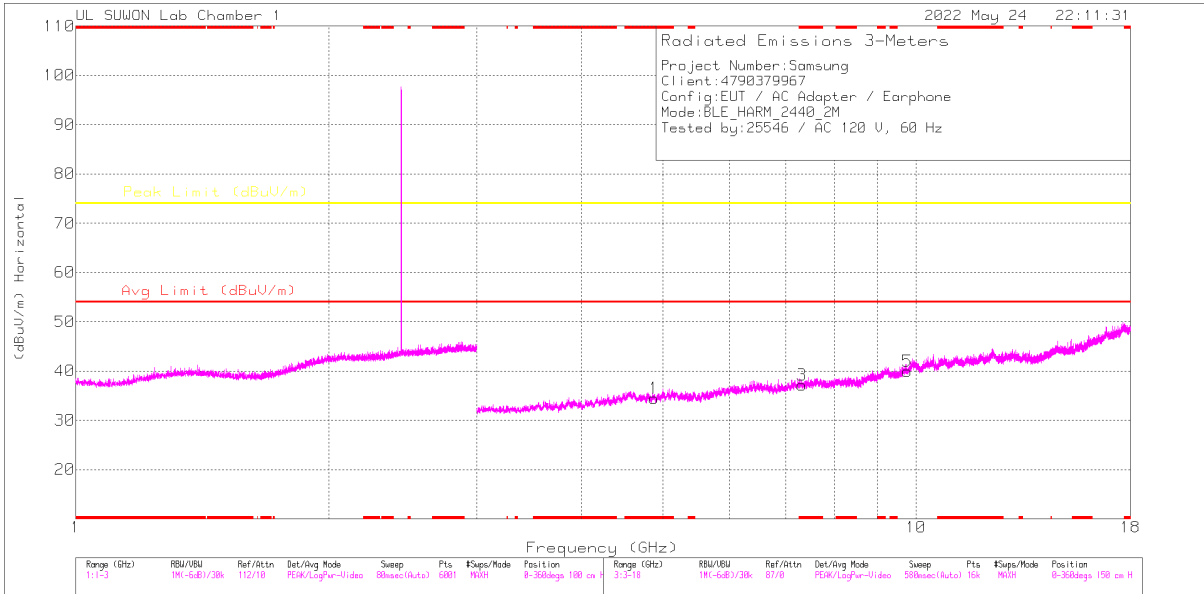
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

### Radiated Emissions

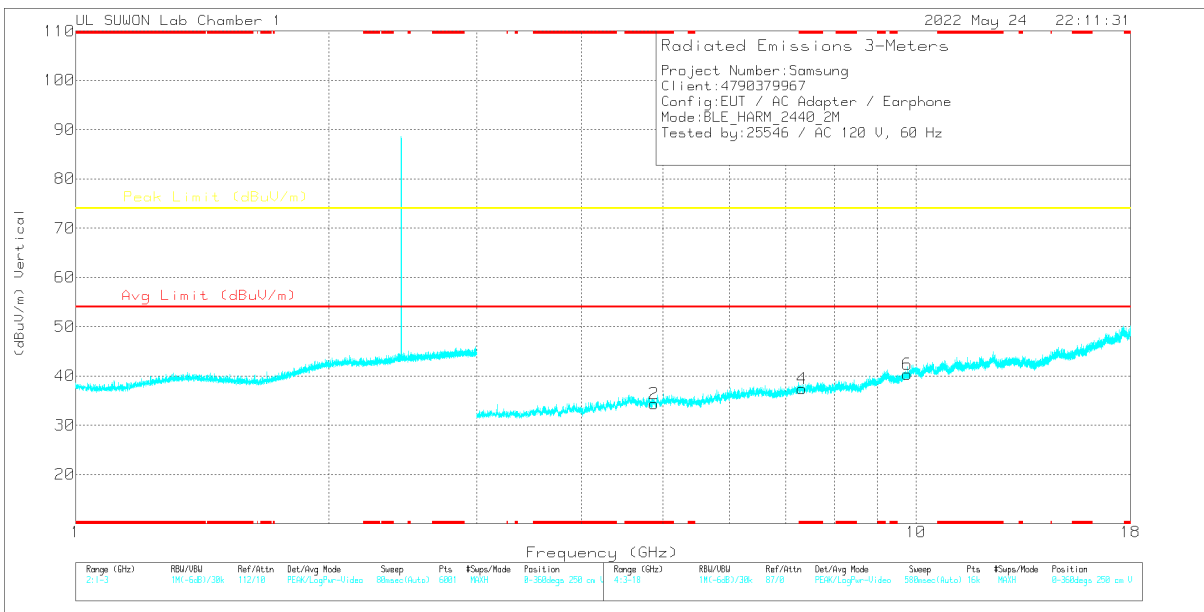
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.8064	41.65	PK2	34.1	-31.1	44.65	-	-	74	-29.35	0	100	H
* 4.80298	41.67	PK2	34.1	-31.1	44.67	-	-	74	-29.33	0	100	V
7.20827	37.71	PK2	35.9	-27.5	46.11	-	-	74	-27.89	0	100	H
7.20456	37.85	PK2	35.9	-27.6	46.15	-	-	74	-27.85	0	100	V
9.60946	34.96	PK2	37.1	-23.1	48.96	-	-	74	-25.04	0	100	H
9.60709	35.02	PK2	37.1	-23	49.12	-	-	74	-24.88	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak

### 19 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.

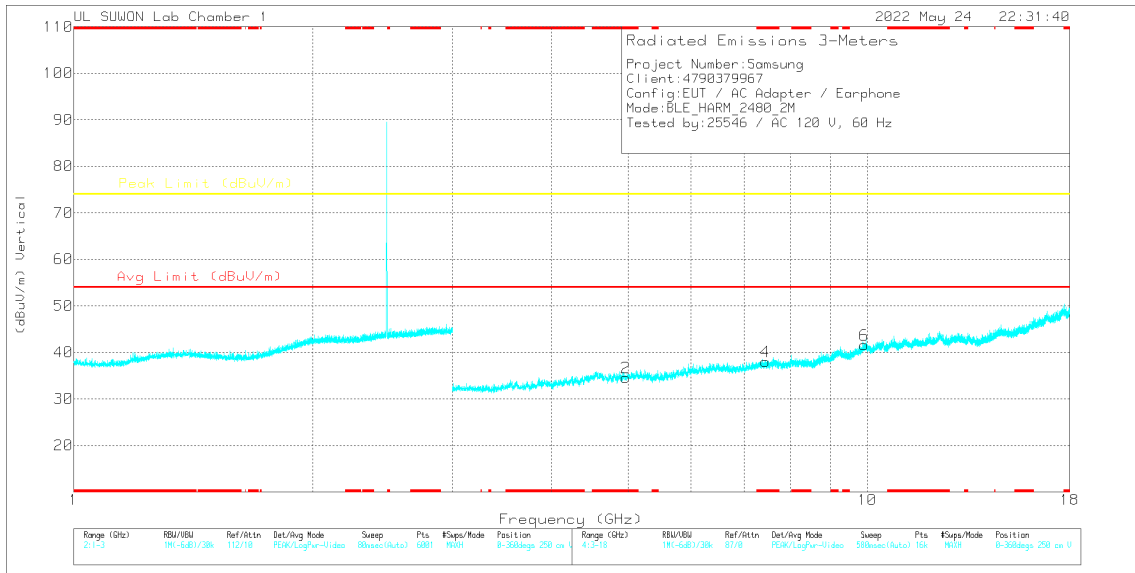
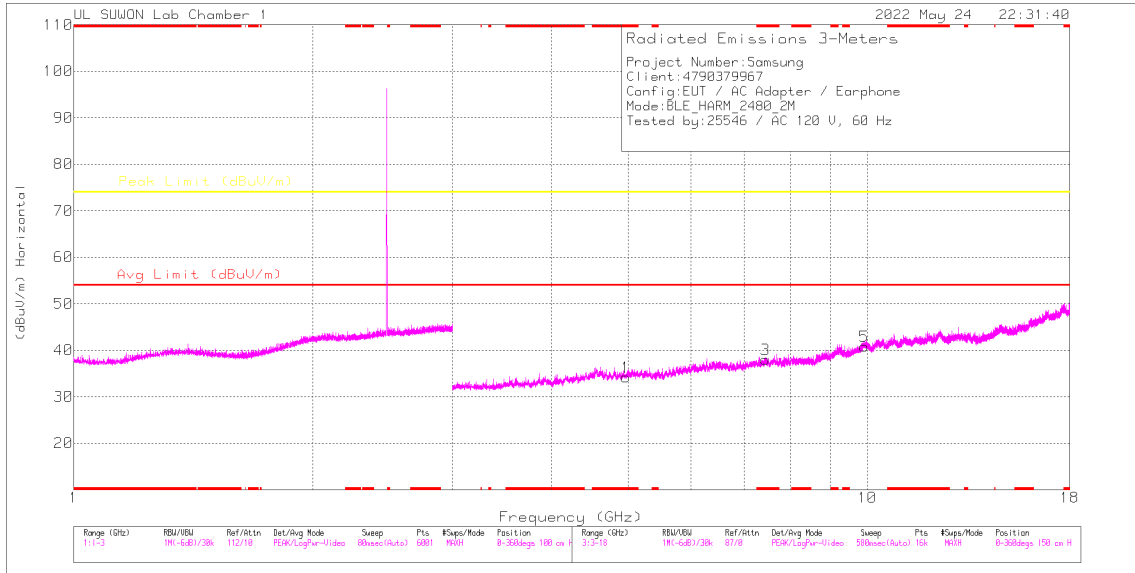
### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	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
* 4.8806	41.75	PK2	34.1	-31.3	44.55	-	-	74	-29.45	0	100	H
* 4.88138	41.23	PK2	34.1	-31.3	44.03	-	-	74	-29.97	0	100	V
* 7.3213	38.52	PK2	35.8	-27.2	47.12	-	-	74	-26.88	0	100	H
* 7.32101	37.6	PK2	35.8	-27.2	46.2	-	-	74	-27.8	0	100	V
9.75997	34.95	PK2	37.4	-23.6	48.75	-	-	74	-25.25	0	100	H
9.76119	35.31	PK2	37.4	-23.6	49.11	-	-	74	-24.89	0	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak



### 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.

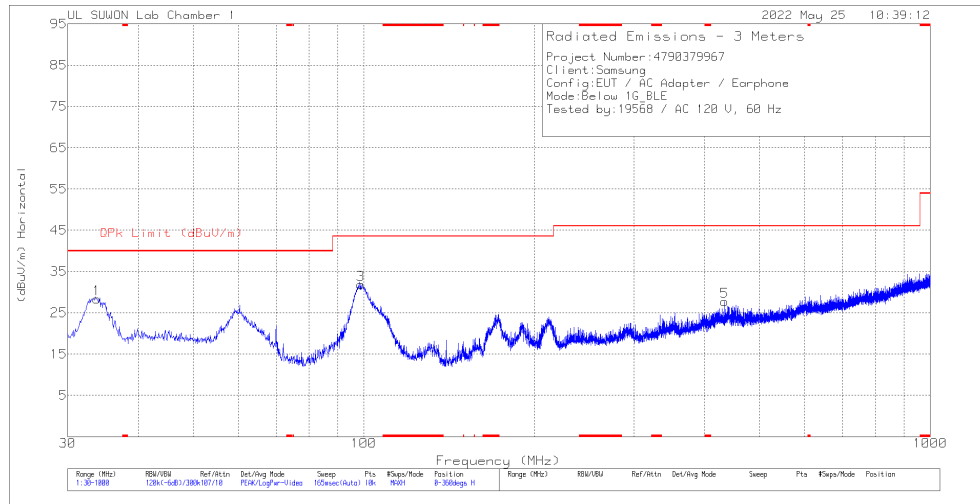
#### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	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
* 4.96173	41.41	PK2	34.1	-31.3	44.21	-	-	74	-29.79	0	100	H
* 4.95838	41.26	PK2	34.1	-31.3	44.06	-	-	74	-29.94	0	100	V
* 7.4398	38.59	PK2	35.8	-26.7	47.69	-	-	74	-26.31	0	100	H
* 7.43882	37.65	PK2	35.8	-26.6	46.85	-	-	74	-27.15	0	100	V
9.91863	34.24	PK2	37.7	-21.6	50.34	-	-	74	-23.66	0	100	H
9.92075	34.24	PK2	37.7	-21.6	50.34	-	-	74	-23.66	0	100	V

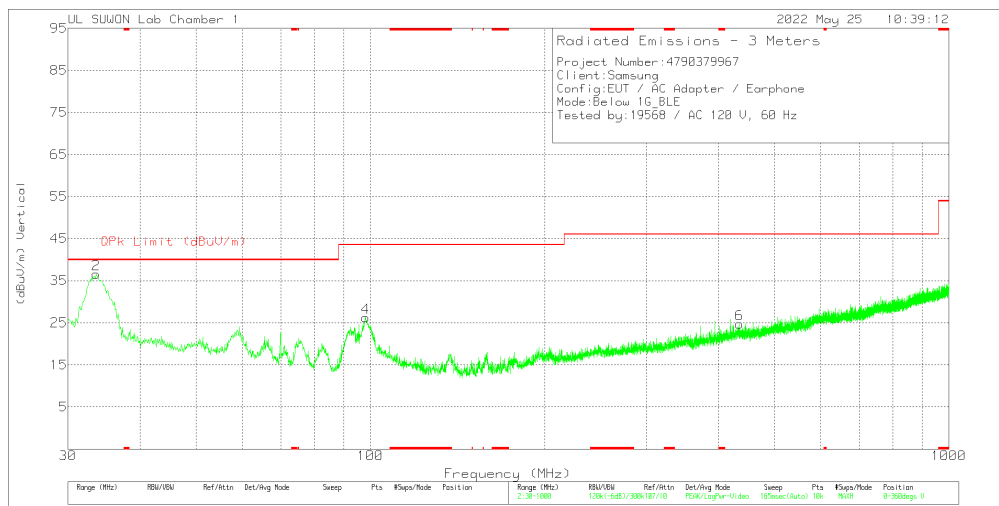
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 PK2 - KDB558074 Method: Maximum Peak

### 10.3. WORST CASE BELOW 1 GHz

#### SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



**HORIZONTAL**



**VERTICAL**

#### Below 1GHz Data

##### Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	33.783	43.24	Pk	16.1	-31	0	28.34	40	-11.66	0-360	200	H
3	98.676	44.76	Pk	17.4	-30.3	0	31.86	43.52	-11.66	0-360	200	H
5	433.714	33.5	Pk	22.1	-27.9	0	27.7	46.02	-18.32	0-360	100	H
2	33.589	51.79	Pk	16	-31.2	0	36.59	40	-3.41	0-360	100	V
4	98.094	39.26	Pk	17.3	-30.3	0	26.26	43.52	-17.26	0-360	100	V
6	434.296	30.55	Pk	22.1	-27.9	0	24.75	46.02	-21.27	0-360	200	V

Pk - Peak detector

##### Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
33.589	46.61	Qp	16	-31.2	.4	31.81	40	-8.19	42	100	V

Qp - Quasi-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 <sup>*</sup>	56 to 46 <sup>*</sup>
0.5-5	56	46
5-30	60	50

<sup>\*</sup> Decreases with the logarithm of the frequency.

### TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

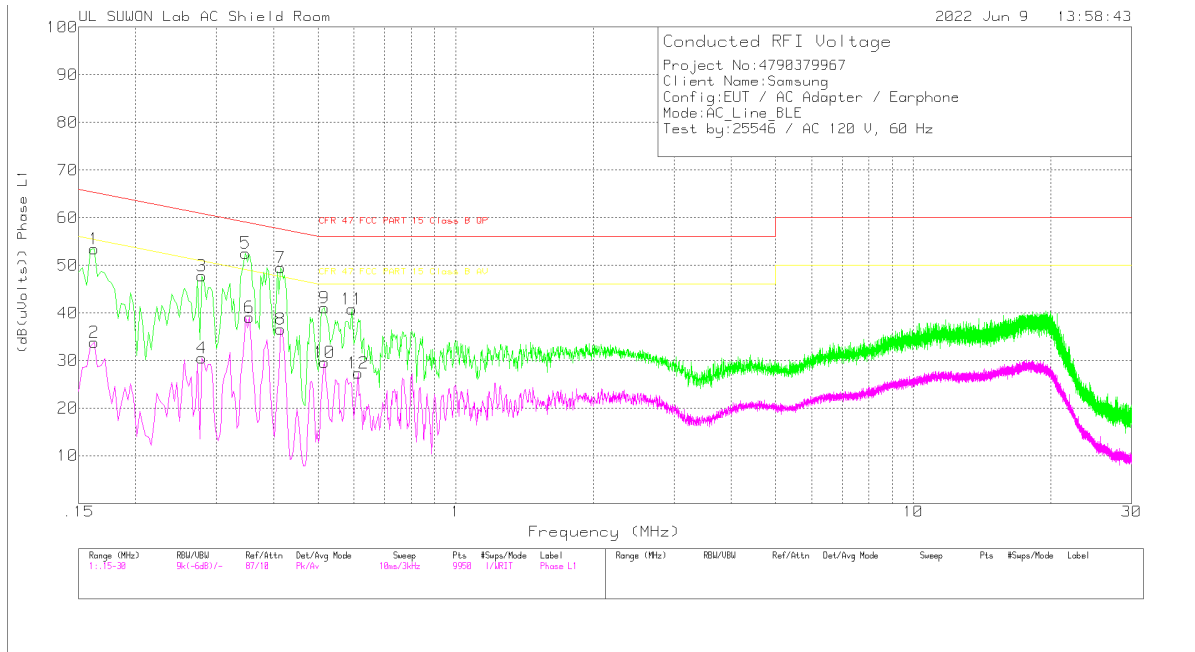
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

### 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_With 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	.162	43.48	Pk	9.9	.1	53.48	65.36	-11.88	-	-
2	.162	23.77	Av	9.9	.1	33.77	-	-	55.36	-21.59
3	.279	37.91	Pk	9.7	.2	47.81	60.85	-13.04	-	-
4	.279	20.56	Av	9.7	.2	30.46	-	-	50.85	-20.39
5	.348	42.57	Pk	9.8	.2	52.57	59.01	-6.44	-	-
6	.354	29.12	Av	9.8	.2	39.12	-	-	48.87	-9.75
7	.414	39.51	Pk	9.8	.2	49.51	57.57	-8.06	-	-
8	.414	26.58	Av	9.8	.2	36.58	-	-	47.57	-10.99
9	.516	30.91	Pk	9.9	.2	41.01	56	-14.99	-	-
10	.516	19.54	Av	9.9	.2	29.64	-	-	46	-16.36
11	.594	30.79	Pk	9.8	.2	40.79	56	-15.21	-	-
12	.612	17.37	Av	9.8	.2	27.37	-	-	46	-18.63

Pk - Peak detector

Av - Average detection

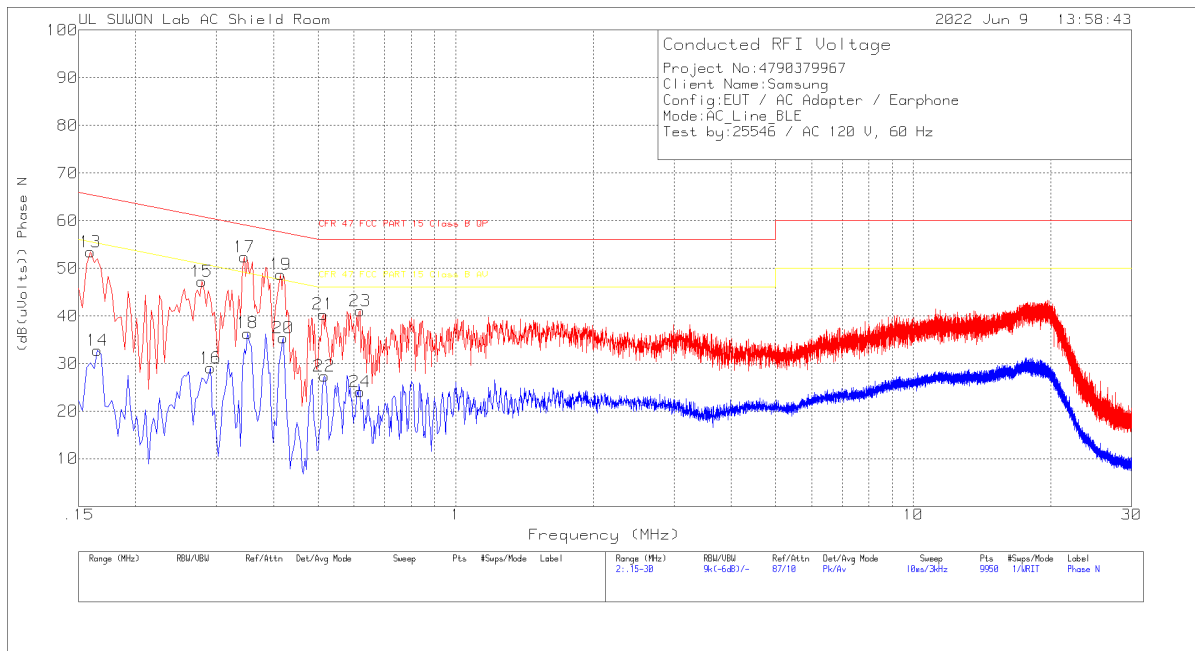
### Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With 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)
.34875	32.69	Qp	9.8	.2	42.69	58.99	-16.3	-	-
.41325	35.87	Qp	9.8	.2	45.87	57.58	-11.71	-	-

Qp - Quasi-Peak detector

### LINE 2 RESULTS



#### Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With 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	.159	43.47	Pk	9.8	.1	53.37	65.52	-12.15	-	-
14	.165	22.77	Av	9.9	.1	32.77	-	-	55.21	-22.44
15	.279	37.33	Pk	9.7	.2	47.23	60.85	-13.62	-	-
16	.291	19.16	Av	9.7	.2	29.06	-	-	50.5	-21.44
17	.345	42.35	Pk	9.8	.2	52.35	59.08	-6.73	-	-
18	.351	26.38	Av	9.8	.2	36.38	-	-	48.94	-12.56
19	.414	38.64	Pk	9.8	.2	48.64	57.57	-8.93	-	-
20	.42	25.34	Av	9.8	.2	35.34	-	-	47.45	-12.11
21	.513	30.23	Pk	9.9	.2	40.33	56	-15.67	-	-
22	.516	17.32	Av	9.9	.2	27.42	-	-	46	-18.58
23	.618	31.03	Pk	9.8	.2	41.03	56	-14.97	-	-
24	.618	14.09	Av	9.8	.2	24.09	-	-	46	-21.91

Pk - Peak detector

Av - Average detection

#### Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With 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)
.34575	29.82	Qp	9.8	.2	39.82	59.06	-19.24	-	-
.41325	35.26	Qp	9.8	.2	45.26	57.58	-12.32	-	-

Qp - Quasi-Peak detector

## END OF TEST REPORT