CERTIFICATION TEST REPORT

Report Number. : 4790406782-E4V2

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

Model : SM-A236M/DSN, SM-A236M/N

FCC ID : A3LSMA236MN

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:
2022-07-11

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IAS ACCREDITED
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-07-01	Initial issue	Sungeun Lee
V2	2022-07-11	Updated to address TCB's question	Sungeun Lee

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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-A236M/DSN, SM-A236M/N
SERIAL NUMBER:	R3CT506PHRL (CONDUCTED, Original); R3CT506PD1T, R3CT506PDCD (RADIATED, Original); 617c80251d347ece, 617c8028f4347ece (RADIATED, Spot-check);
DATE TESTED:	2022-05-12 ~ 2022-06-29(Original); 2022-06-22 ~ 2022-07-01(Spot-check);

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.

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1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMA236BN DTS BLE (FCC CFR 47 Part 15C). And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The FCC ID: A3LSMA236MN shares the same enclosure and circuit board as FCC ID: A3LSMA236BN. The BLE antennas and surrounding circuitry and layout are identical between these two units.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMA236BN remains representative of FCC ID: A3LSMA236MN. The test data of FCC ID: A3LSMA236BN being submitted for this application to cover BLE features.

1.3. SPOT CHECK VERIFICATION DATA

(Worst case of the radiated band-edge and radiated spurious emissions)

Band	Test Item	Mode	Frequency	Test Limit	Original model	Spot check model	Deviation	Remark
					SM-A236B/DSN Results	SM-A236M/DSN Results		
					FCC ID : A3LSMA236BN	FCC ID : A3LSMA236MN		
DTS BLE 125k	BANDEDGE	125 kbps	2480 MHz	54 dBuV/m	44.94 dBuV/m	42.70 dBuV/m	-2.24 dB	
	RSE	125 kbps	9920 MHz	74 dBuV/m	48.25 dBuV/m	47.80 dBuV/m	-0.45 dB	Noise Floor
DTS BLE 2M	BANDEDGE	2 Mbps	2480 MHz	54 dBuV/m	48.87 dBuV/m	46.48 dBuV/m	-2.39 dB	
	RSE	2 Mbps	9920 MHz	74 dBuV/m	48.22 dBuV/m	48.23 dBuV/m	0.01 dB	Noise Floor

Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical Limits.

1.4. REFERENCE DETAIL

Reference application that contains the reused reference data in the individual test reports:

Equipment Class	Reference FCC ID (Parent)	Application Type	Reference Test report number	Exhibit Type	Variant Test Report Number	Data Re-used
DTS	A3LSMA236BN	Original Grant	4790406778-E3 (802.11b/g/n)	Test Report	4790406782-E3 (802.11b/g/n)	All
			4790406778-E4 Bluetooth LE	Test Report	4790406782-E4 Bluetooth LE	All
DSS	A3LSMA236BN	Original Grant	4790406778-E5 (Bluetooth)	Test Report	4790406782-E5 (Bluetooth)	All
NII	A3LSMA236BN	Original Grant	4790406778-E6 (802.11a/n/ac)	Test Report	4790406782-E6 (802.11a/n/ac)	All
DXX	A3LSMA236BN	Original Grant	4790406778-E7 (NFC)	Test Report	4790406782-E7 (NFC)	All

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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
☒ Chamber 1(3m semi-anechoic chamber)
☒ Chamber 2(3m semi-anechoic chamber)
☒ Chamber 3(3m semi-anechoic chamber)
☐ Chamber 4(3m Full-anechoic chamber)
☐ 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.

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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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

28.9 dBuV/m = 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB

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.

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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.

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	125kbps (37pkt)	Peak	8.634	7.301
		Average	8.293	6.749
	2Mbps (37pkt)	Peak	8.761	7.518
		Average	8.063	6.402

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.

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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 125 kbps(37 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]
1	1Mbps 37pkt	2402	6.227	2	**2Mbps 37pkt**	2402	6.029
		2440	7.490			2440	7.303
		2480	8.230			**2480**	**8.063**
	1Mbps 255pkt	2402	6.196		2Mbps 255pkt	2402	6.010
		2440	7.473			2440	7.284
		2480	8.204			2480	8.038
1 Coded S=8	**125kbps 37pkt**	2402	6.319	1 Coded S=2	500kbps 37pkt	2402	6.252
		2440	7.551			2440	7.513
		2480	**8.293**			2480	8.271
	125kbps 255pkt	2402	6.234		500kbps 255pkt	2402	6.223
		2440	7.496			2440	7.477
		2480	8.231			2480	8.214

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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.

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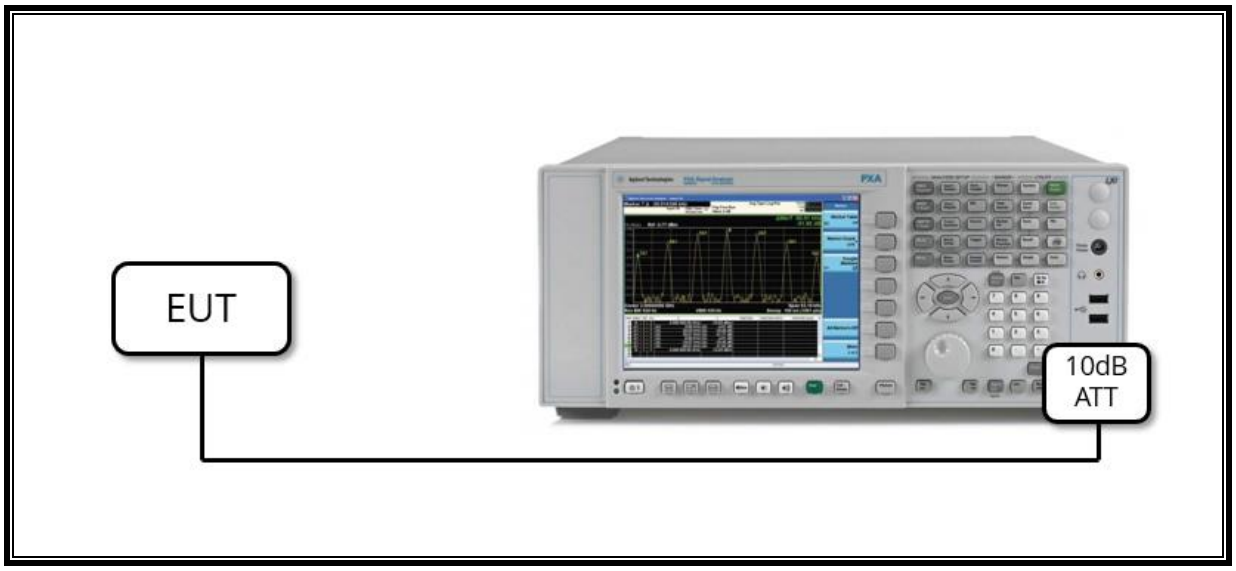
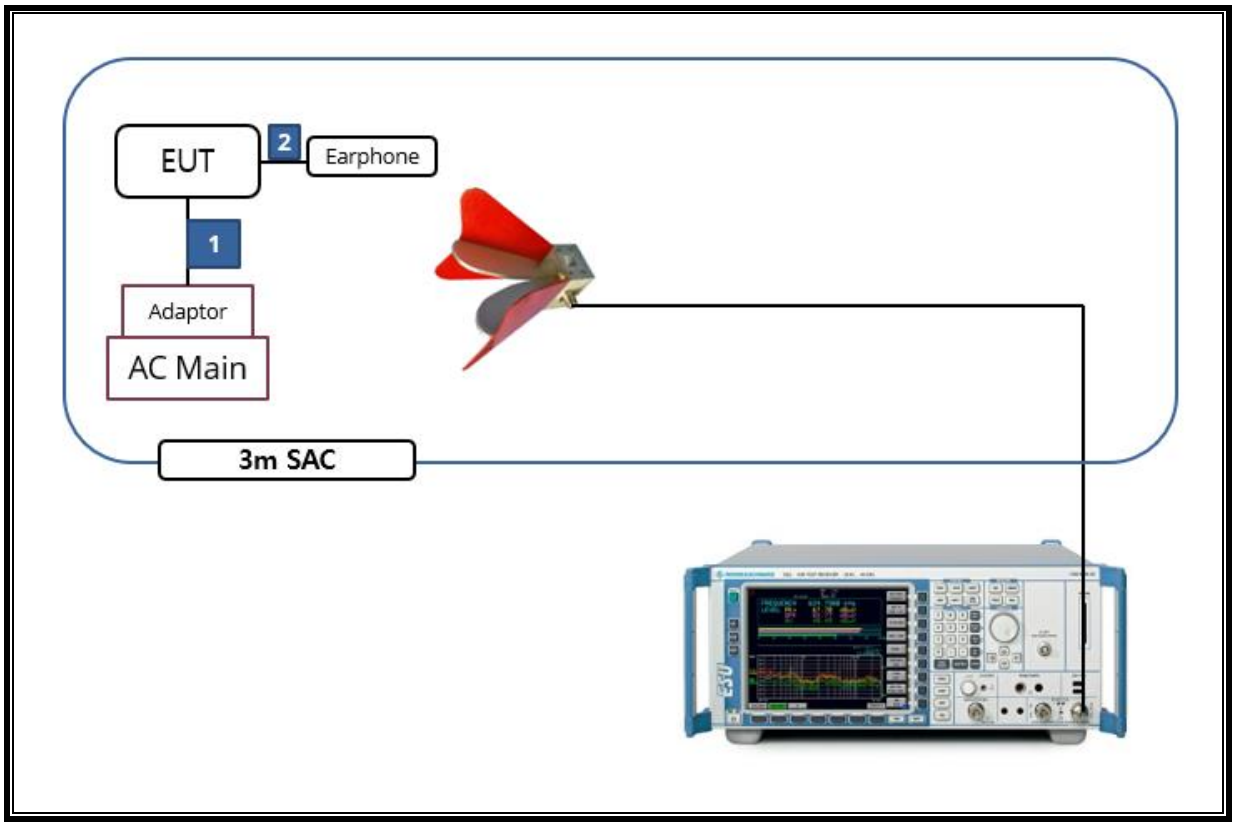
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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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 ≥ 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

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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	PASTERNACK	PE7087-10	A001	2022/08/03
Attenuator	PASTERNACK	PE7087-10	A008	2022/08/03
Attenuator	PASTERNACK	PE7004-10	2	2022/08/02
Attenuator	PASTERNACK	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

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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

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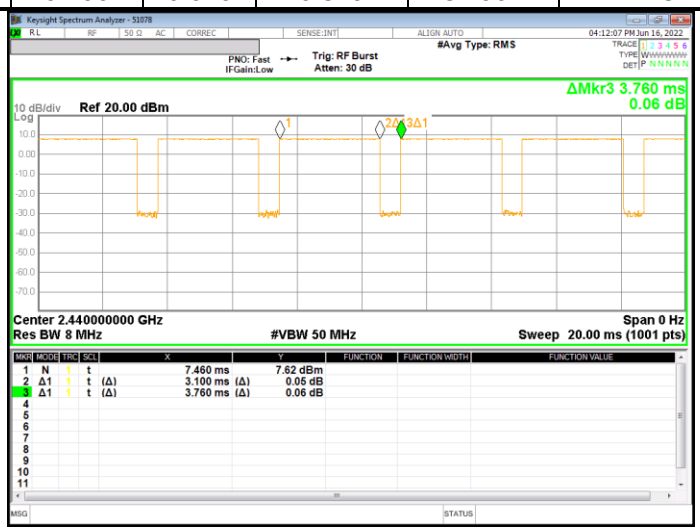
9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

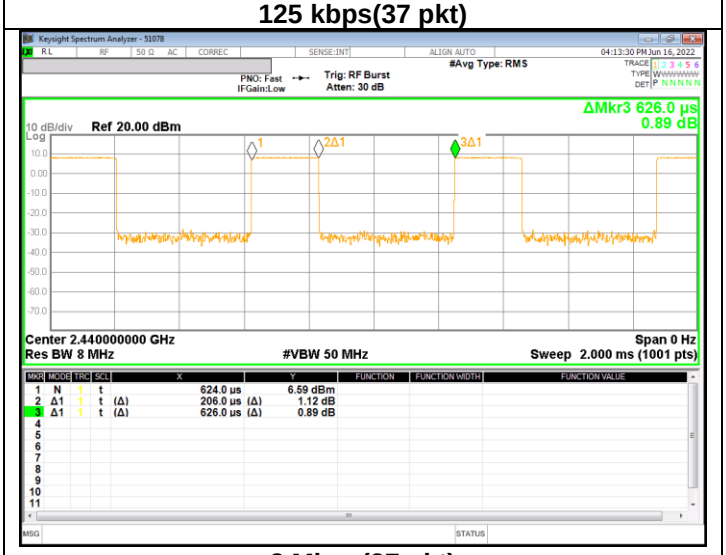
LIMITS

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]
2 400 ~ 2 483.5 MHz Bands						
125 kbps [37pkt]	3.100	3.760	0.824	82.447	0.838	0.323
2 Mbps [37pkt]	0.206	0.626	0.329	32.907	4.827	4.854



125 kbps(37 pkt)



2 Mbps(37 pkt)

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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]
125kbps	**0**	**2 402**	**601.5**	**500.0**
	19	2 440	602.5	500.0
	39	2 480	602.2	500.0
2Mbps	0	2 402	1127.0	500.0
	19	2 440	1129.0	500.0
	39	2 480	1128.0	500.0
Worst			**601.5**	500.0

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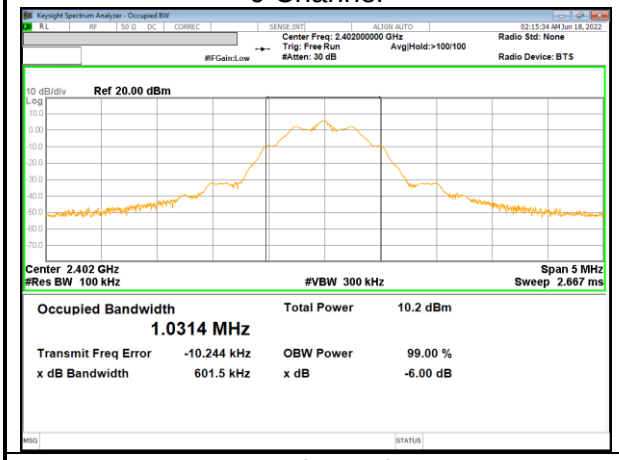
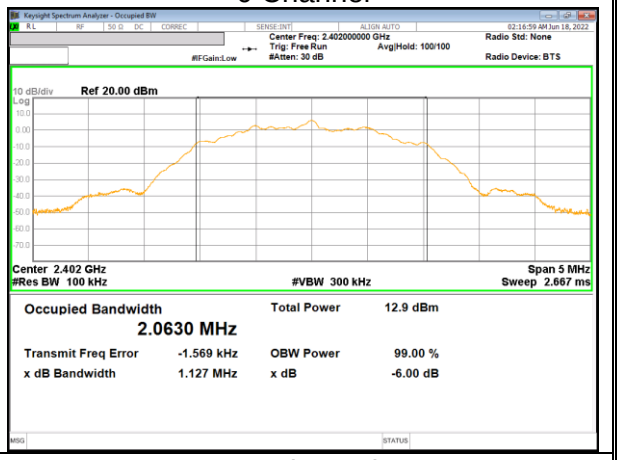
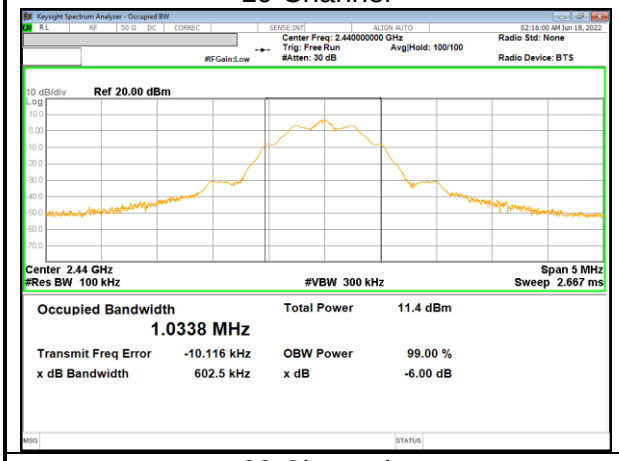
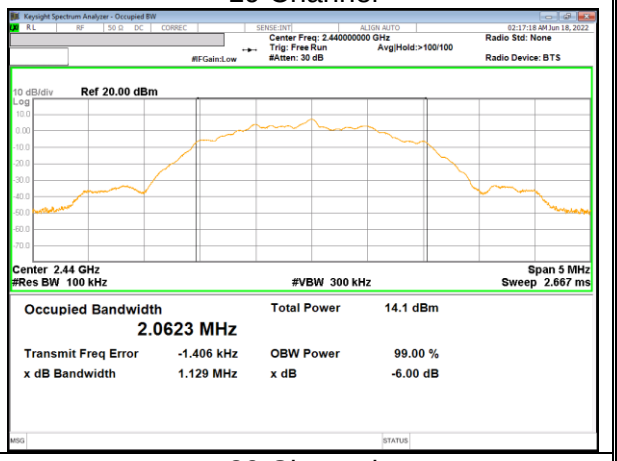
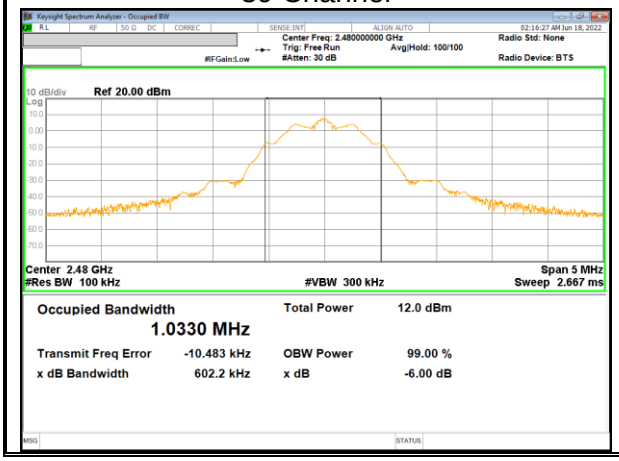
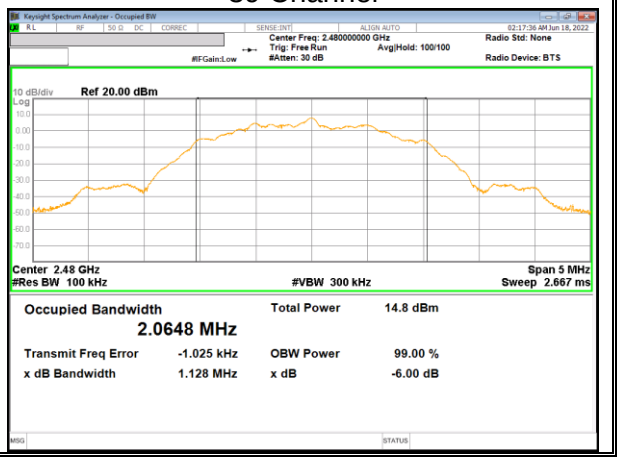
9.2.2. 6 dB BANDWIDTH PLOTS

125 kbps	2 Mbps
0 Channel	0 Channel
	
19 Channel	19 Channel
	
39 Channel	39 Channel
	

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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 ≧ DTS bandwidth).

RESULTS

9.3.1. Test data

Mode	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
125kbps (37 pkt)	0	2 402	6.660	30.000	-23.340
	19	2 440	7.841		-22.159
	39	2 480	8.634		-21.366
2Mbps (37 pkt)	0	2 402	6.768		-23.232
	19	2 440	8.014		-21.986
	39	**2 480**	**8.761**		**-21.239**
Worst			**8.761**		-21.239

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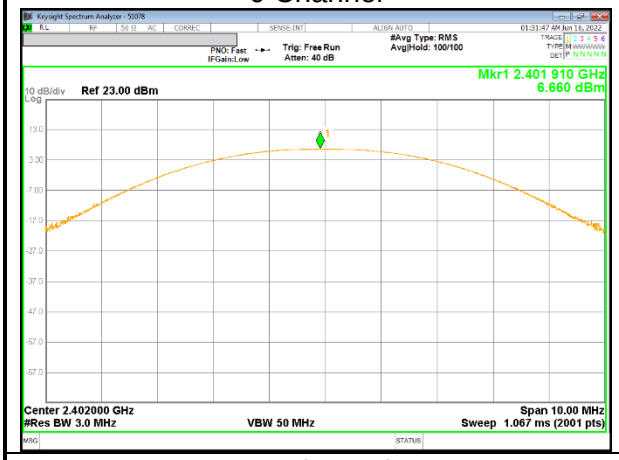
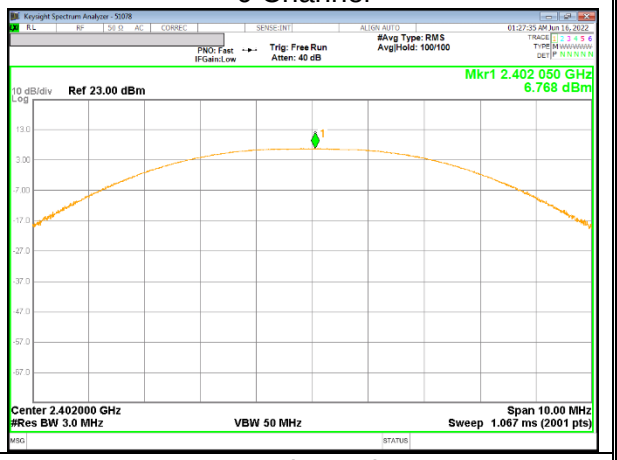
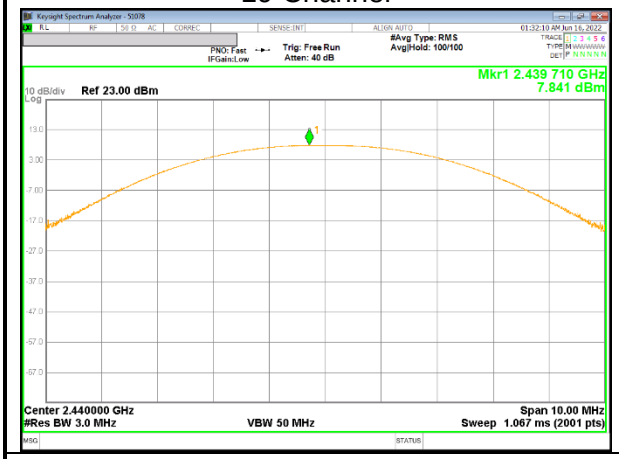
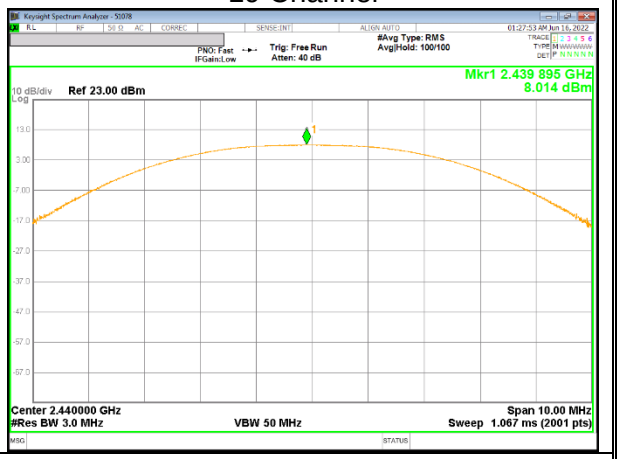
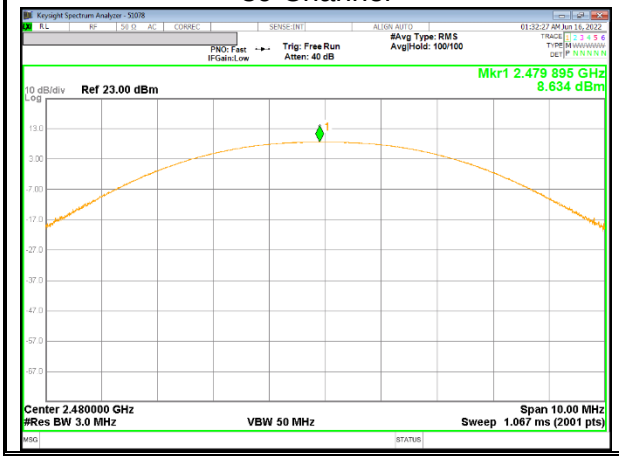
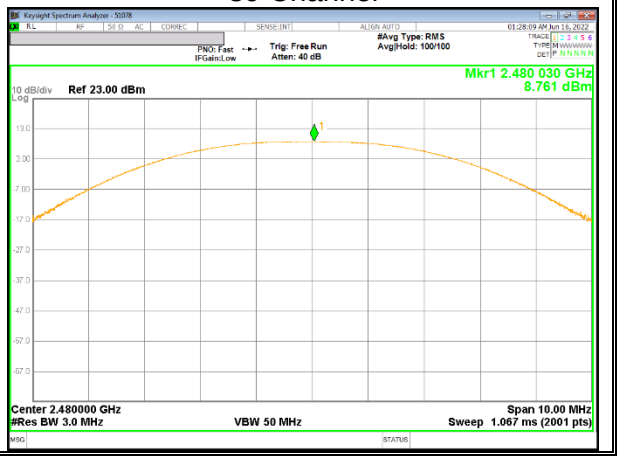
9.3.2. PEAK POWER PLOTS

125 kbps	2 Mbps
0 Channel	0 Channel
	
19 Channel	19 Channel
	
39 Channel	39 Channel
	

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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]
125kbps	0	2 402	6.319	4.285
	19	2 440	7.551	5.690
	39	2 480	8.293	6.749
2Mbps	0	2 402	6.029	4.008
	19	2 440	7.303	5.374
	39	2 480	8.063	6.402

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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]
125kbps (37pkt)	0	2 402	0.039	8.00	-7.961
	19	2 440	1.138		-6.862
	39	**2 480**	**1.870**		**-6.130**
2Mbps (37pkt)	0	2 402	-12.336		-20.336
	19	2 440	-11.118		-19.118
	39	2 480	-10.368		-18.368
Worst			**1.870**		**-6.130**

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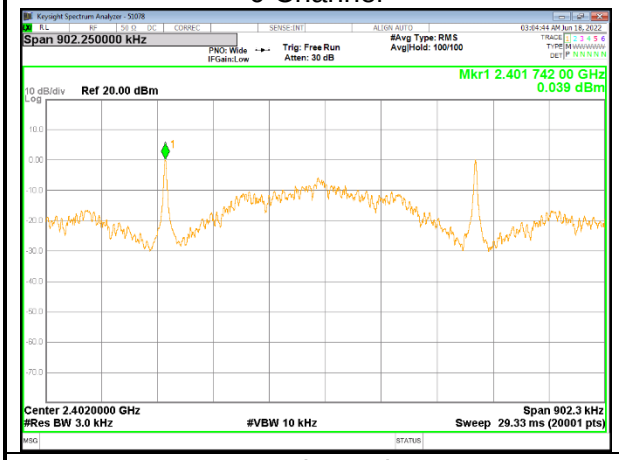
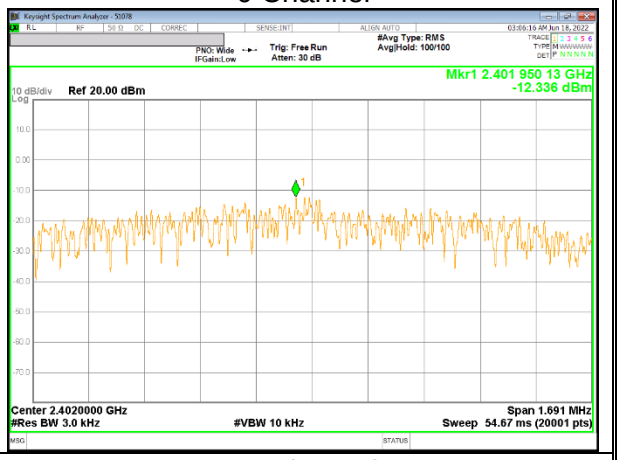
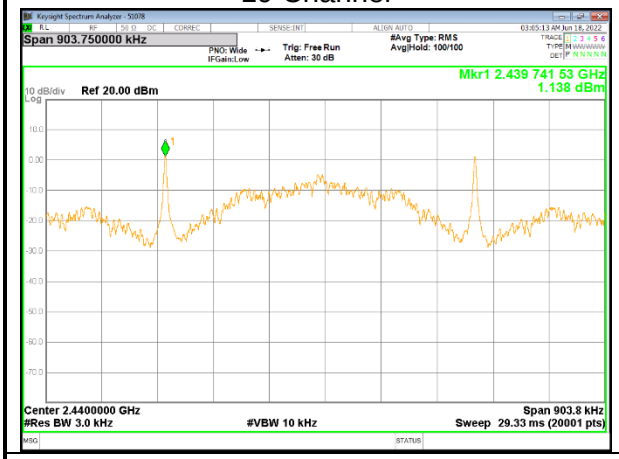
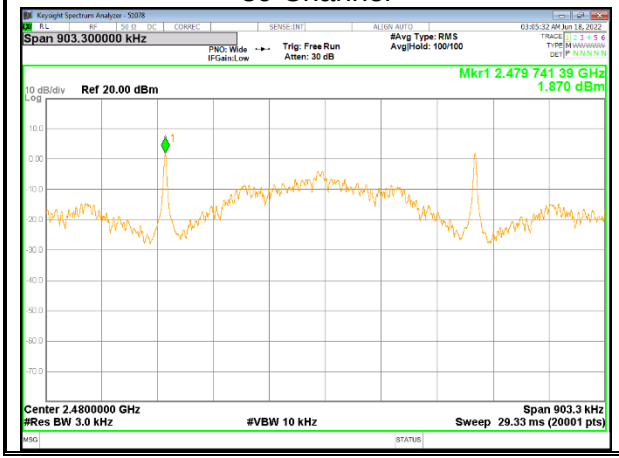
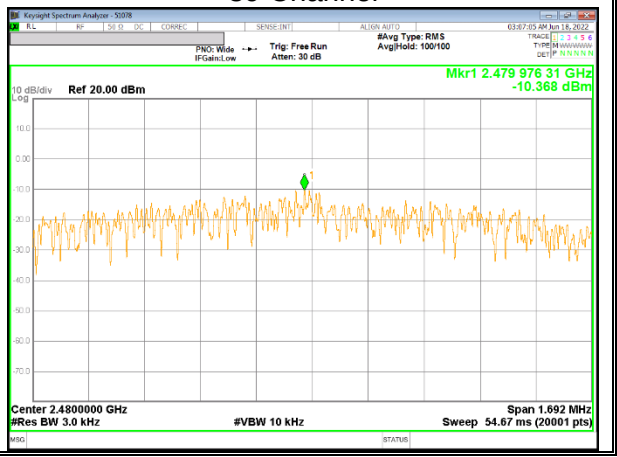
9.5.2. PSD TEST PLOTS

125 **kbps**	**2 Mbps**
0 Channel	0 Channel
	
19 Channel	19 Channel
	
39 Channel	39 Channel
	

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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

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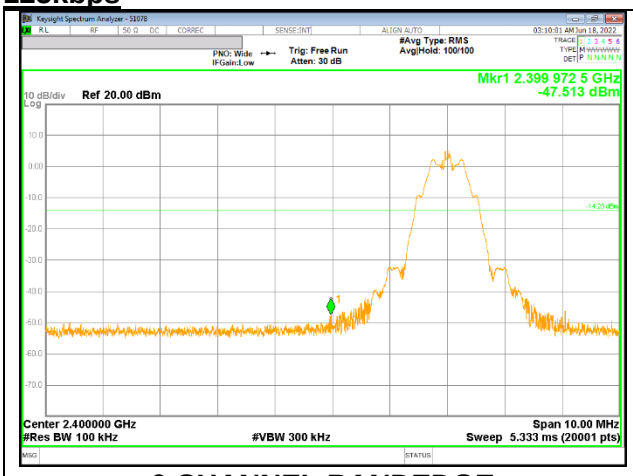
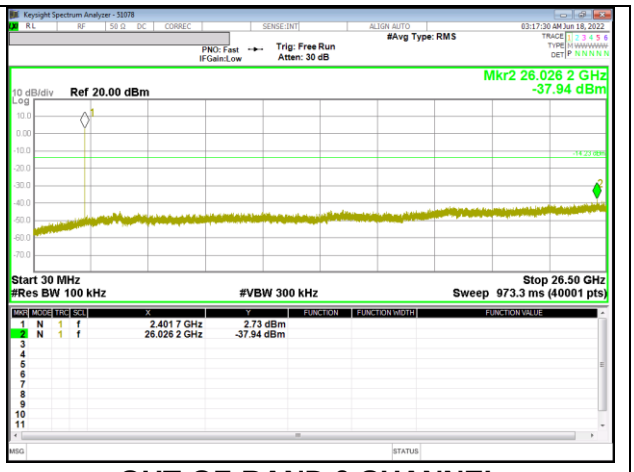
9.6.1. Test plot

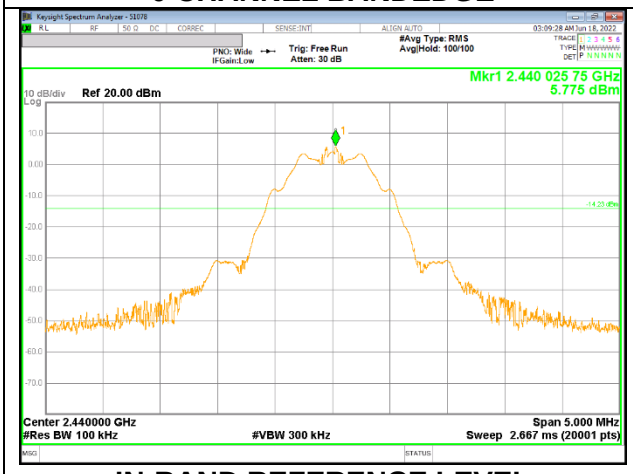
125kbps



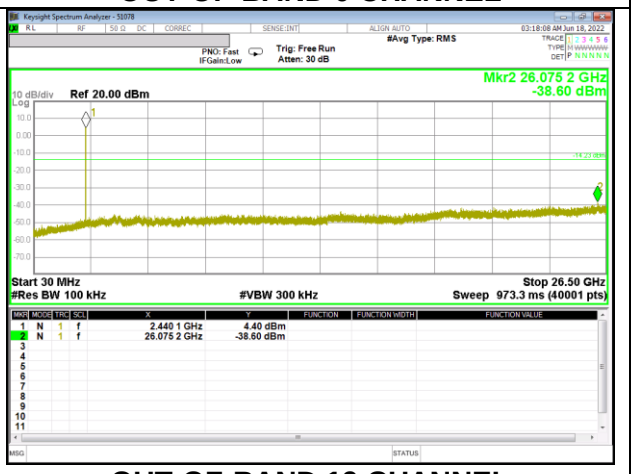
0 CHANNEL BANDEDGE



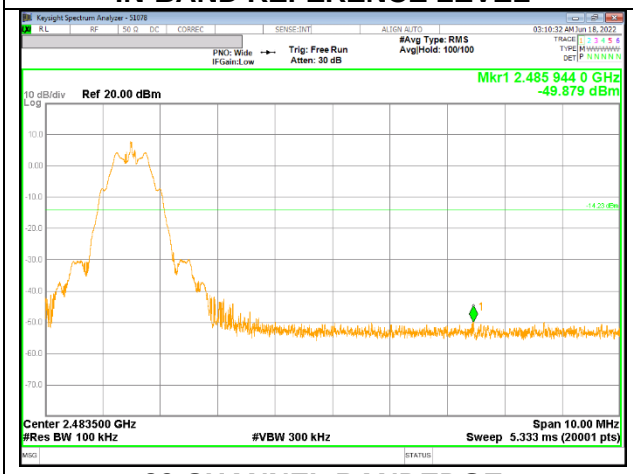
OUT-OF-BAND 0 CHANNEL



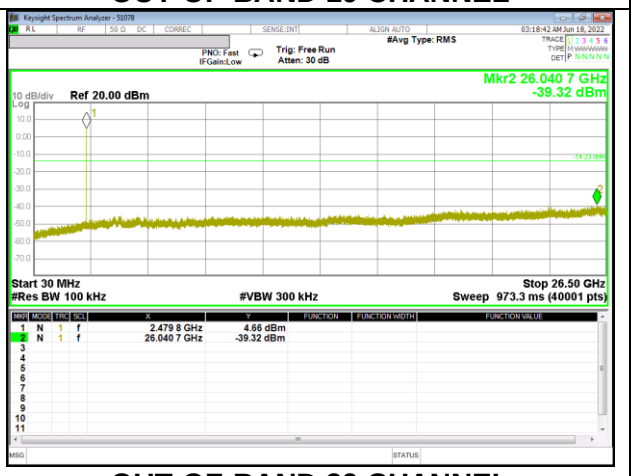
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 19 CHANNEL



39 CHANNEL BANDEDGE



OUT-OF-BAND 39 CHANNEL

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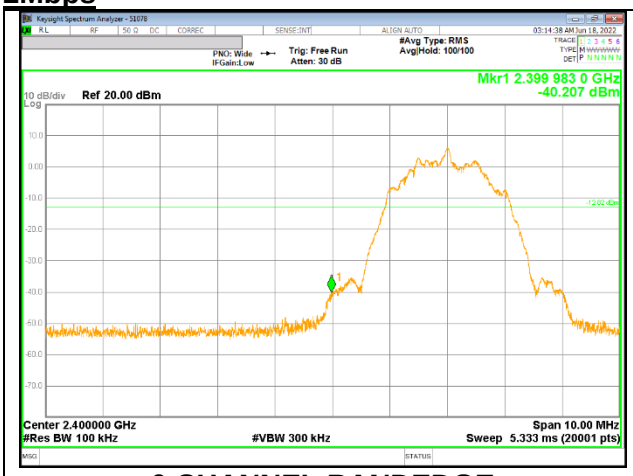
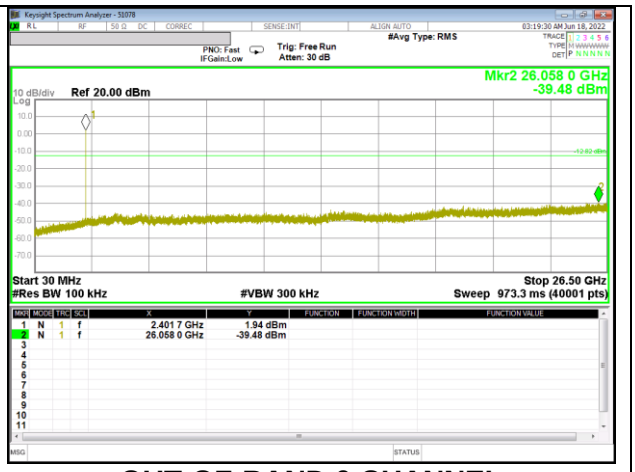
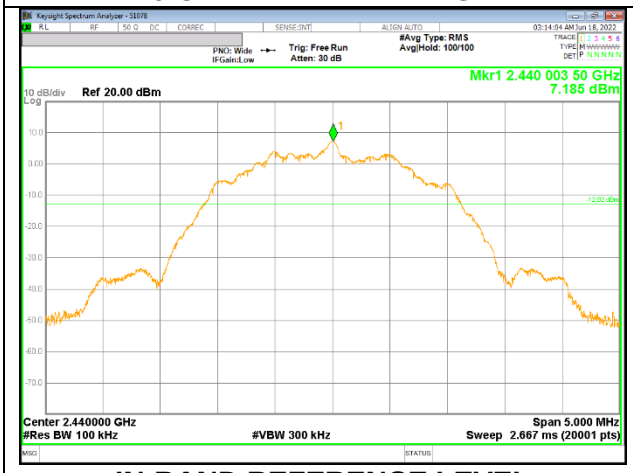
2Mbps



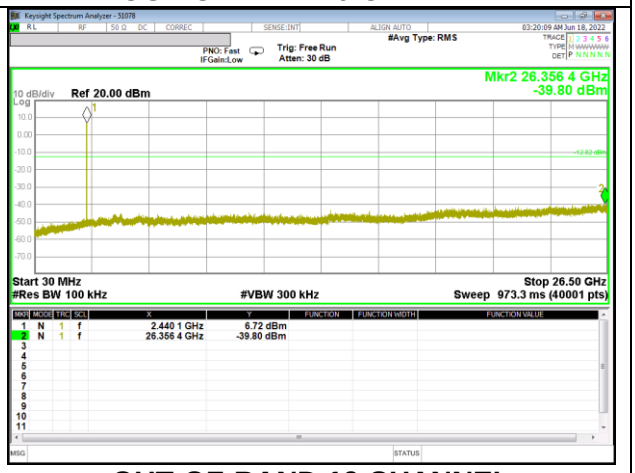
0 CHANNEL BANDEDGE



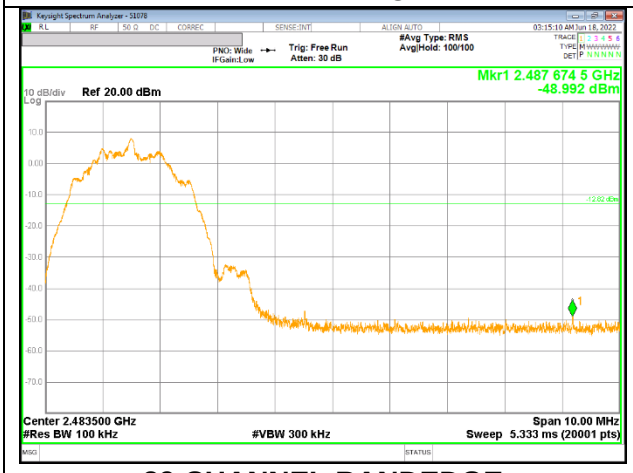
OUT-OF-BAND 0 CHANNEL



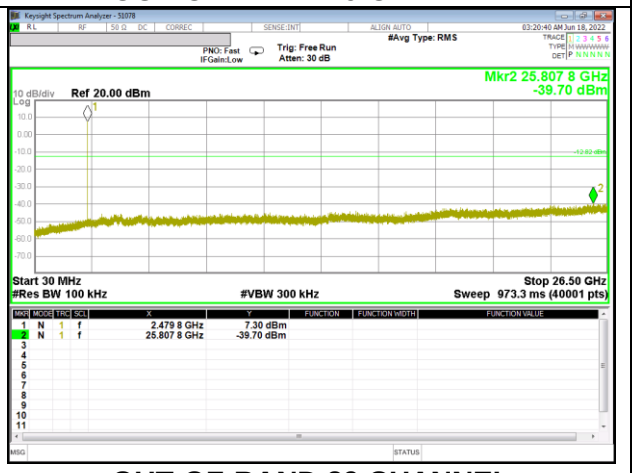
IN-BAND REFERENCE LEVEL



OUT-OF-BAND 19 CHANNEL



39 CHANNEL BANDEDGE



OUT-OF-BAND 39 CHANNEL

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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 (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.

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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 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 125 kbps, DCF = 10log(1/0.824)=0.838 dB (Spectrum Analyzer round it up to 0.84 dB) and for 2 Mbps, DCF = 10log(1/0.329)=4.827 dB (Spectrum Analyzer round it up to 4.83 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.

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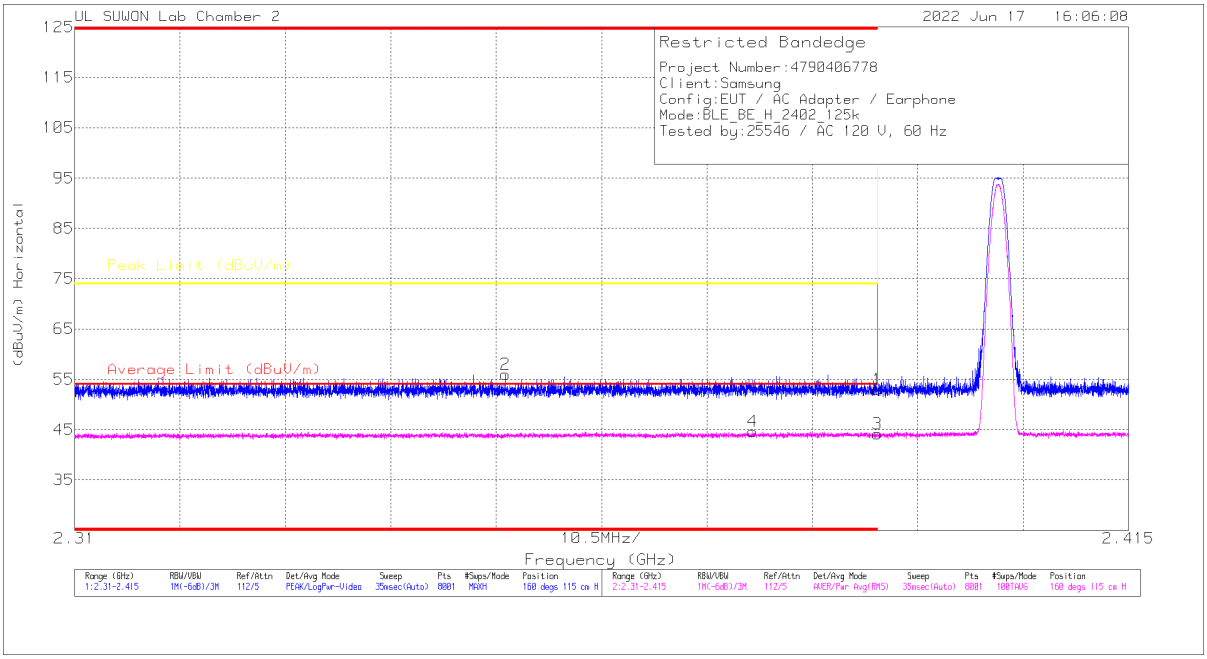
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. 125 kbps

BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	40.85	Pk	31.9	-19.7	0	53.05	-	-	74	-20.95	160	115	H
2	* 2.35291	43.79	Pk	31.8	-19.6	0	55.99	-	-	74	-18.01	160	115	H
3	* 2.39	31.08	RMS	31.9	-19.7	.84	44.12	54	-9.88	-	-	160	115	H
4	* 2.37757	31.53	RMS	31.9	-19.6	.84	44.67	54	-9.33	-	-	160	115	H

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

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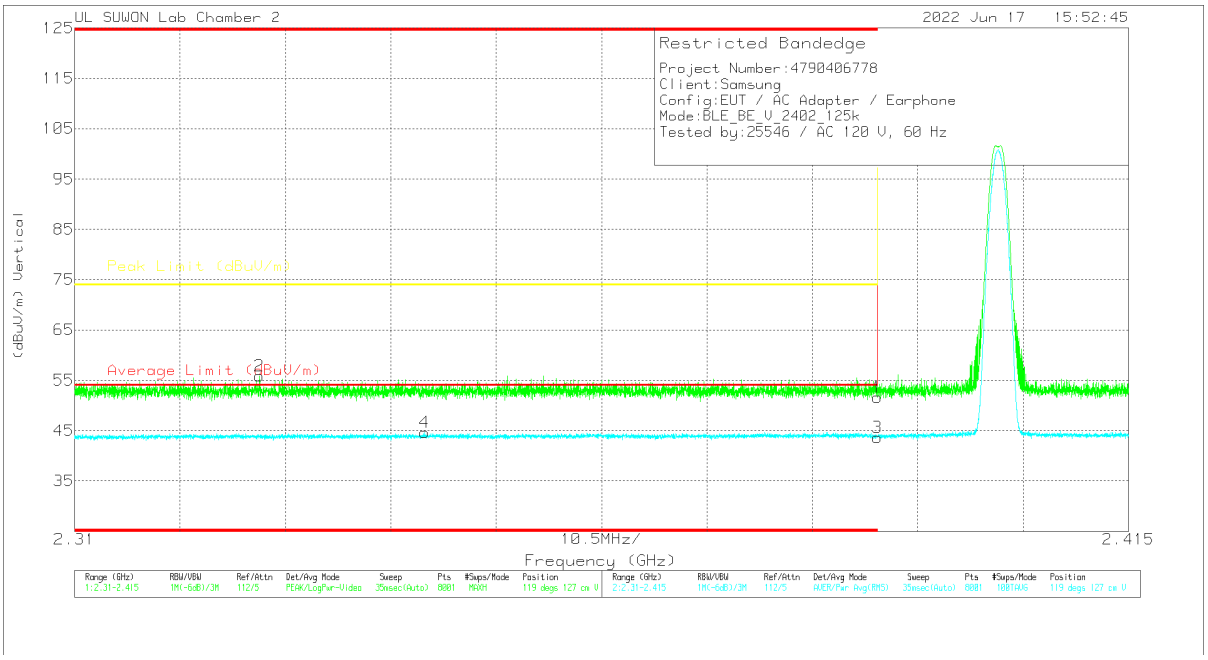
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	39.44	Pk	31.9	-19.7	0	51.64	-	-	74	-22.36	119	127	V
2	* 2.32838	43.67	Pk	31.8	-19.6	0	55.87	-	-	74	-18.13	119	127	V
3	* 2.39	30.57	RMS	31.9	-19.7	.84	43.61	54	-10.39	-	-	119	127	V
4	* 2.34489	31.59	RMS	31.8	-19.6	.84	44.63	54	-9.37	-	-	119	127	V

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

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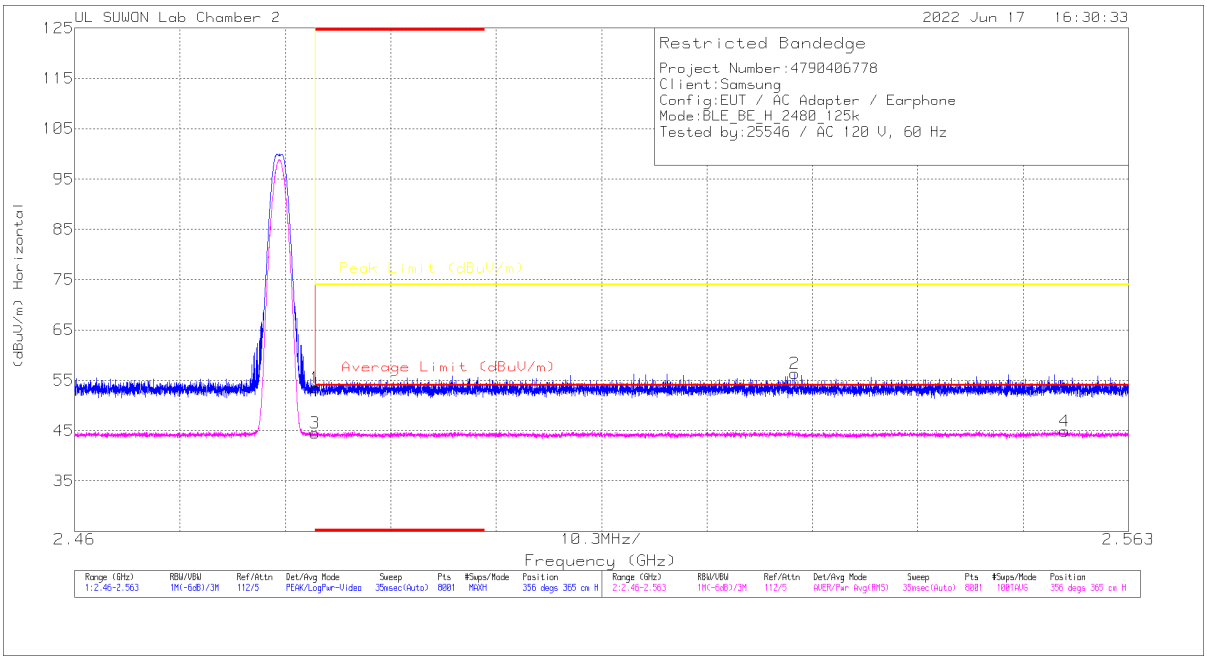
BANDEDGE (39 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	41.05	Pk	32	-19.6	0	53.45	-	-	74	-20.55	356	365	H
2	2.53039	43.67	Pk	32.1	-19.4	0	56.37	-	-	74	-17.63	356	365	H
3	* 2.48351	31.23	RMS	32	-19.6	.84	44.47	54	-9.53	-	-	356	365	H
4	2.55673	31.3	RMS	32.2	-19.4	.84	44.94	54	-9.06	-	-	356	365	H

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

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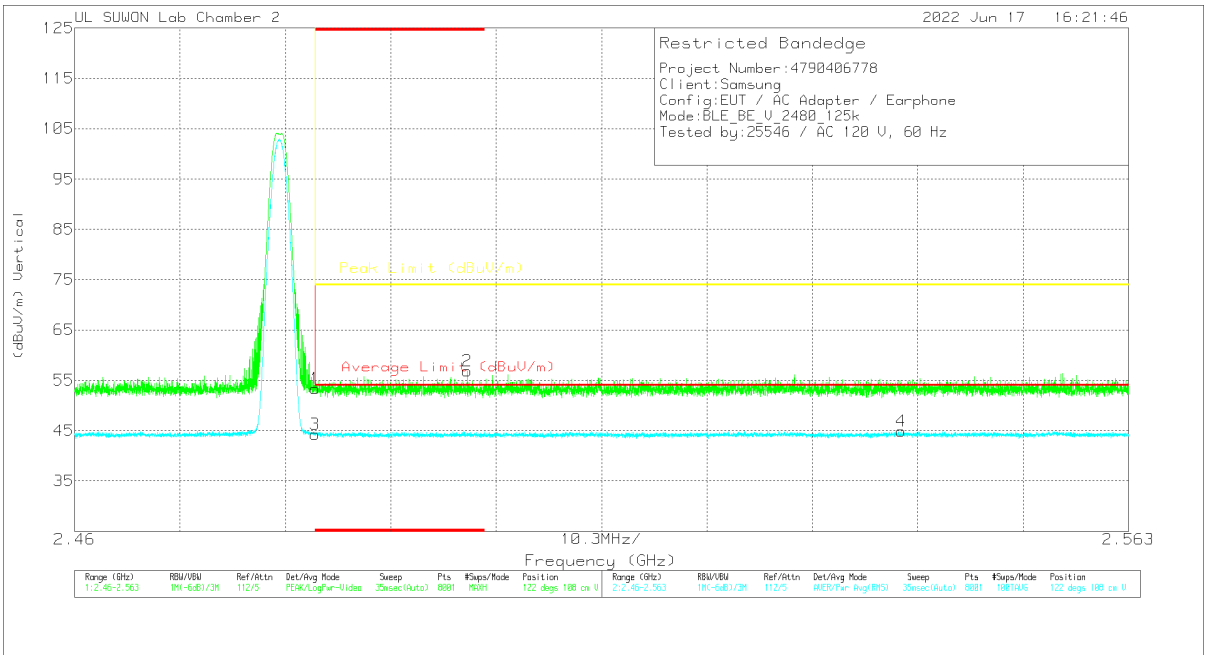
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	40.97	Pk	32	-19.6	0	53.37	-	-	74	-20.63	122	108	V
2	* 2.49839	44.28	Pk	32.1	-19.5	0	56.88	-	-	74	-17.12	122	108	V
3	* 2.48351	31.03	RMS	32	-19.6	.84	44.27	54	-9.73	-	-	122	108	V
4	2.54075	31.39	RMS	32.1	-19.4	.84	44.93	54	-9.07	-	-	122	108	V

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

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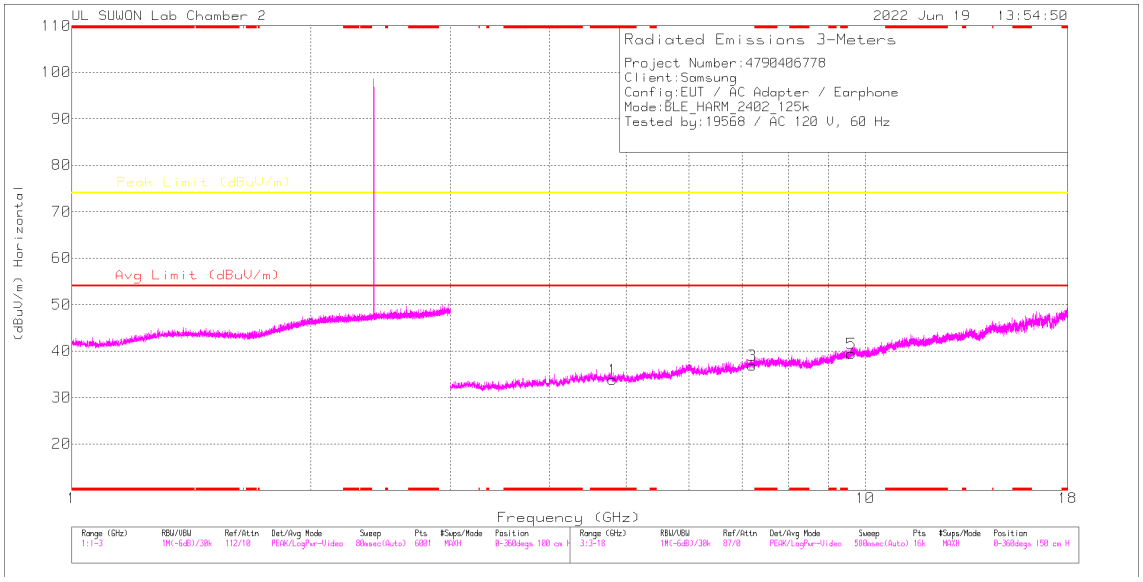
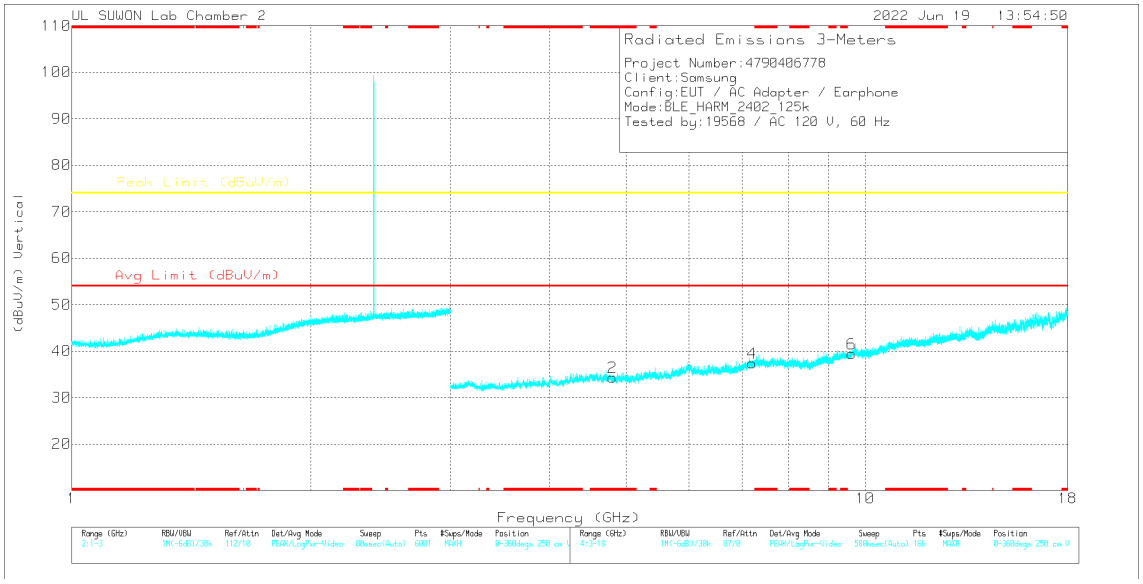
HARMONICS AND SPURIOUS EMISSIONS

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_00168724	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
* 4.81246	37.13	PK2	34.1	-27.7	0	43.53	-	-	74	-30.47	0	100	H
* 4.80019	36.53	PK2	34.1	-27.7	0	42.93	-	-	74	-31.07	0	100	V
7.20427	35.49	PK2	36.2	-25	0	46.69	-	-	74	-27.31	0	100	H
7.2032	34.98	PK2	36.2	-25	0	46.18	-	-	74	-27.82	0	100	V
9.60069	32.72	PK2	37	-21.4	0	48.32	-	-	74	-25.68	0	100	H
9.60907	32.12	PK2	37	-21.3	0	47.82	-	-	74	-26.18	0	100	V

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

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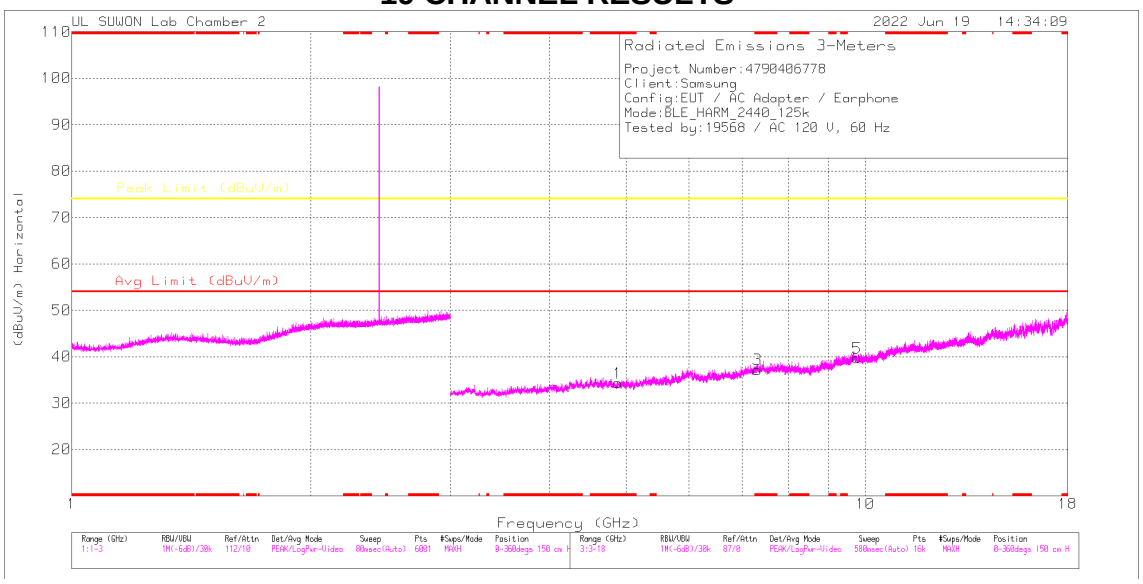
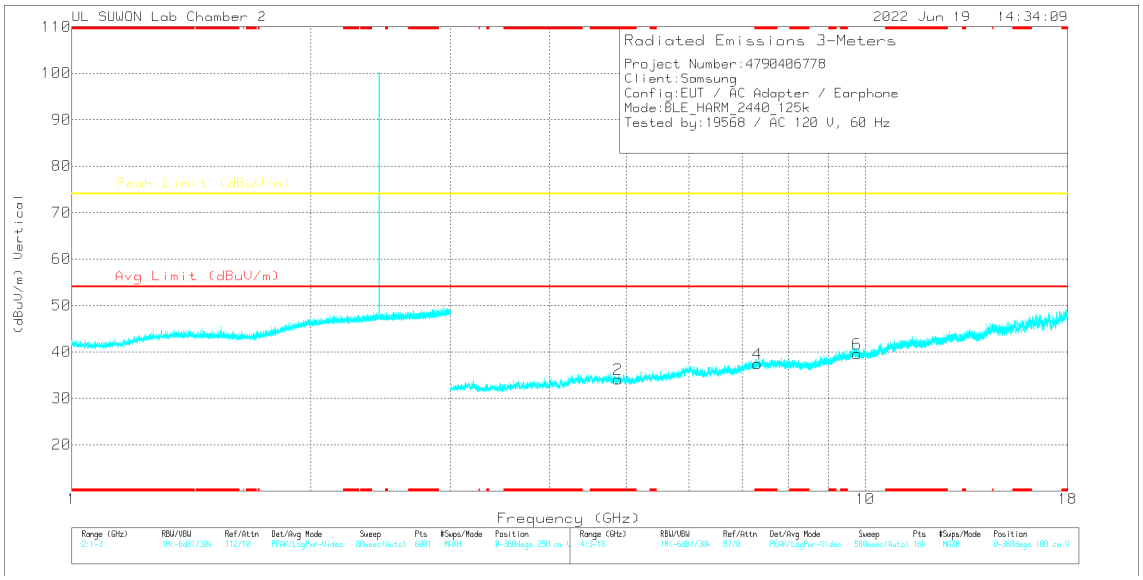
19 CHANNEL RESULTS



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_00168724	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
* 4.8747	37.33	PK2	34.1	-27.7	0	43.73	-	-	74	-30.27	0	100	H
* 4.87057	36.99	PK2	34.1	-27.7	0	43.39	-	-	74	-30.61	0	100	V
* 7.31729	35.11	PK2	36.1	-24.6	0	46.61	-	-	74	-27.39	0	100	H
* 7.31489	34.87	PK2	36.1	-24.6	0	46.37	-	-	74	-27.63	0	100	V
9.76709	32.8	PK2	37.2	-21	0	49	-	-	74	-25	0	100	H
9.76041	32.55	PK2	37.2	-21	0	48.75	-	-	74	-25.25	0	100	V

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

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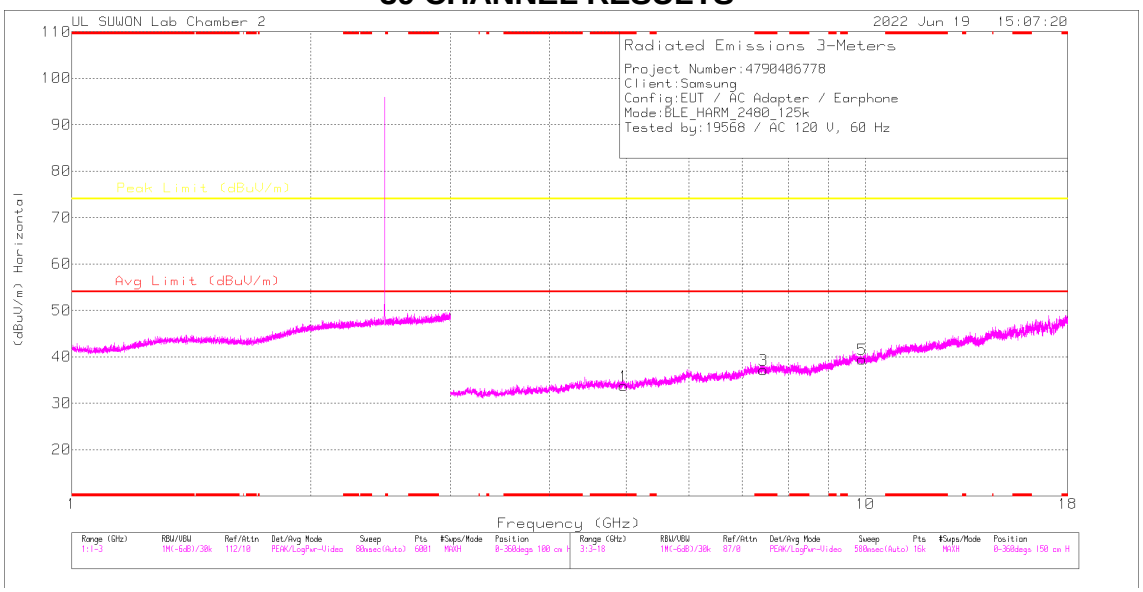
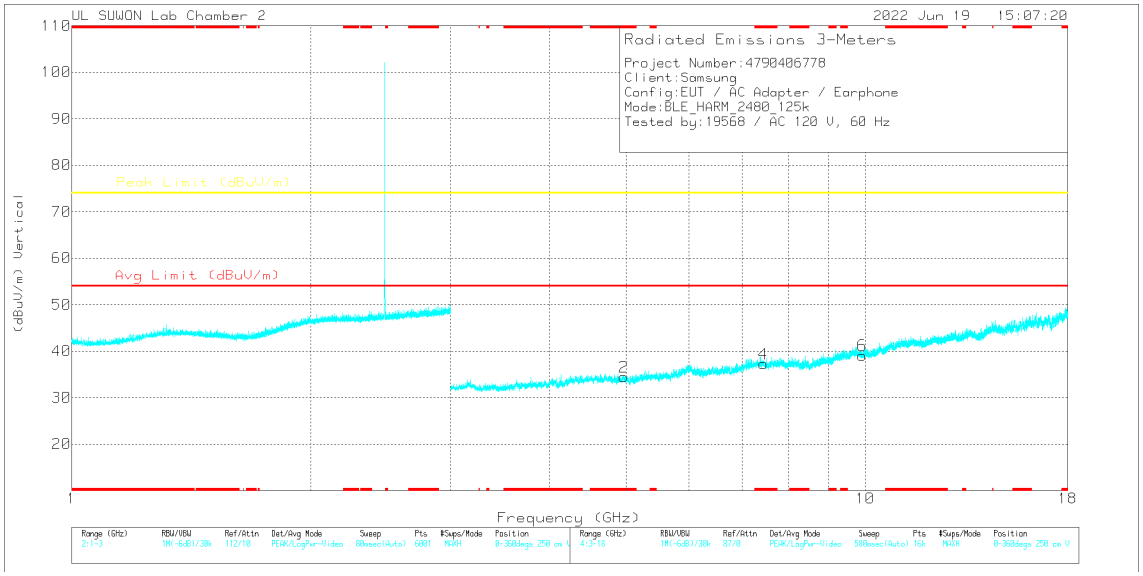
39 CHANNEL RESULTS



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_00168724	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
* 4.95914	36.09	PK2	34.1	-27	0	43.19	-	-	74	-30.81	0	100	H
* 4.96411	36.43	PK2	34.1	-26.9	0	43.63	-	-	74	-30.37	0	100	V
* 7.44363	34.67	PK2	36	-23.7	0	46.97	-	-	74	-27.03	0	100	H
* 7.44415	34.4	PK2	36	-23.7	0	46.7	-	-	74	-27.3	0	100	V
9.91132	31.69	PK2	37.4	-21.1	0	47.99	-	-	74	-26.01	0	100	H
9.91378	31.95	PK2	37.4	-21.1	0	48.25	-	-	74	-25.75	0	100	V

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

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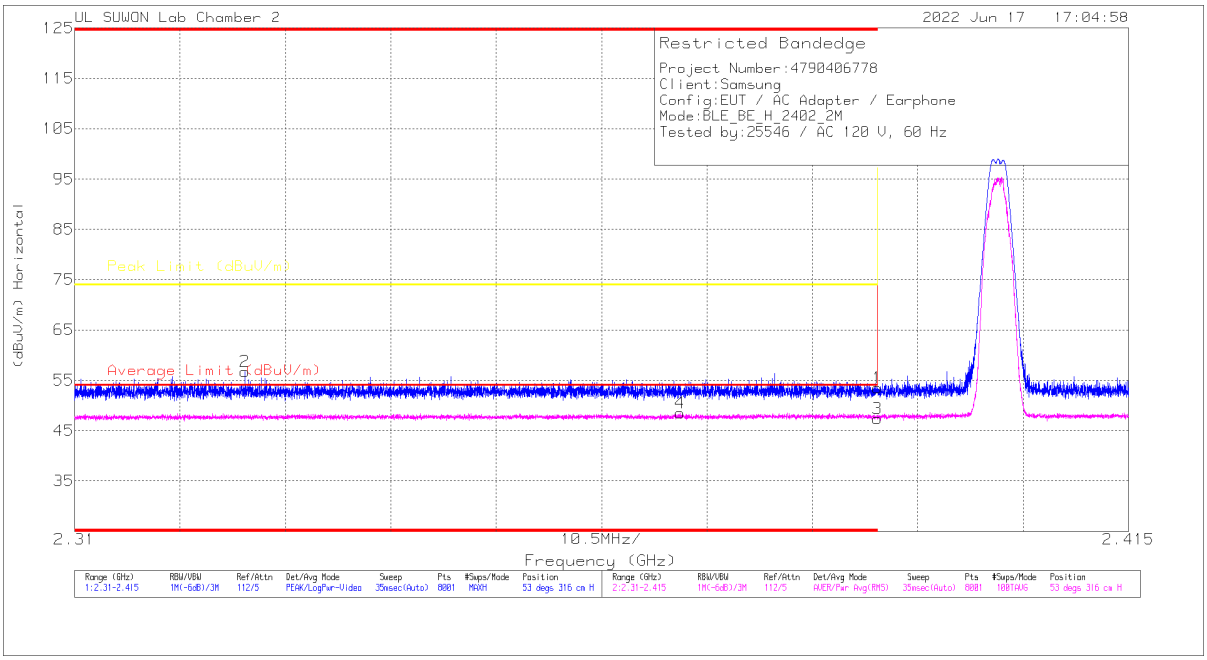
10.2.2. 2 Mbps

BANDEDGE (0 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	41.3	Pk	31.9	-19.7	0	53.5	-	-	74	-20.5	53	316	H
2	* 2.32698	44.55	Pk	31.8	-19.6	0	56.75	-	-	74	-17.25	53	316	H
3	* 2.39	30.41	RMS	31.9	-19.7	4.83	47.44	54	-6.56	-	-	53	316	H
4	* 2.3703	31.48	RMS	31.8	-19.6	4.83	48.51	54	-5.49	-	-	53	316	H

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

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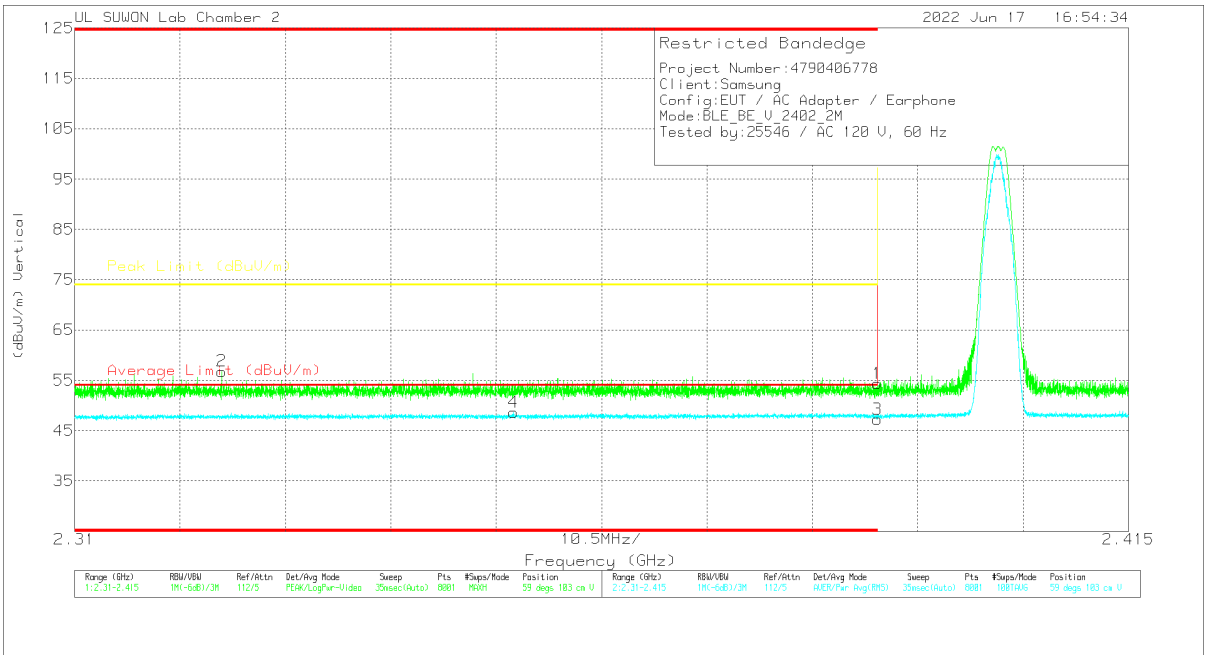
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	42.19	Pk	31.9	-19.7	0	54.39	-	-	74	-19.61	59	103	V
2	* 2.32463	44.6	Pk	31.8	-19.6	0	56.8	-	-	74	-17.2	59	103	V
3	* 2.39	30.21	RMS	31.9	-19.7	4.83	47.24	54	-6.76	-	-	59	103	V
4	* 2.35376	31.62	RMS	31.8	-19.6	4.83	48.65	54	-5.35	-	-	59	103	V

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

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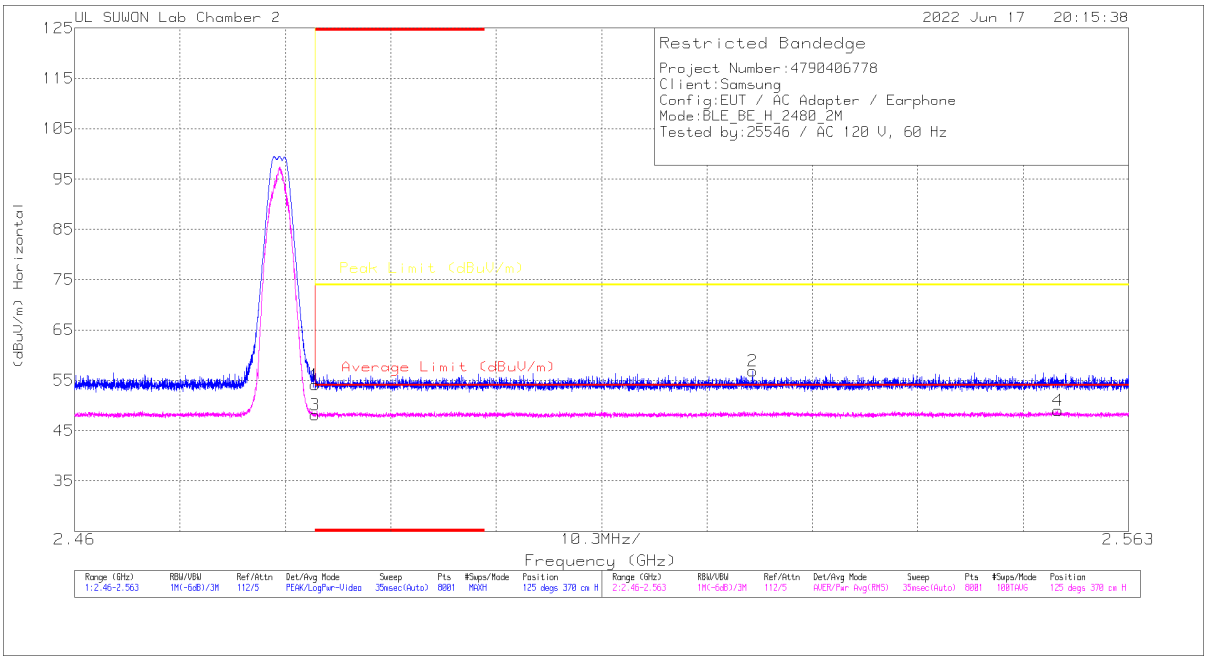
BANDEDGE (39 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	41.77	Pk	32	-19.6	0	54.17	-	-	74	-19.83	125	370	H
2	2.52627	44.12	Pk	32.1	-19.4	0	56.82	-	-	74	-17.18	125	370	H
3	* 2.48351	30.95	RMS	32	-19.6	4.83	48.18	54	-5.82	-	-	125	370	H
4	2.55611	31.24	RMS	32.2	-19.3	4.83	48.97	54	-5.03	-	-	125	370	H

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

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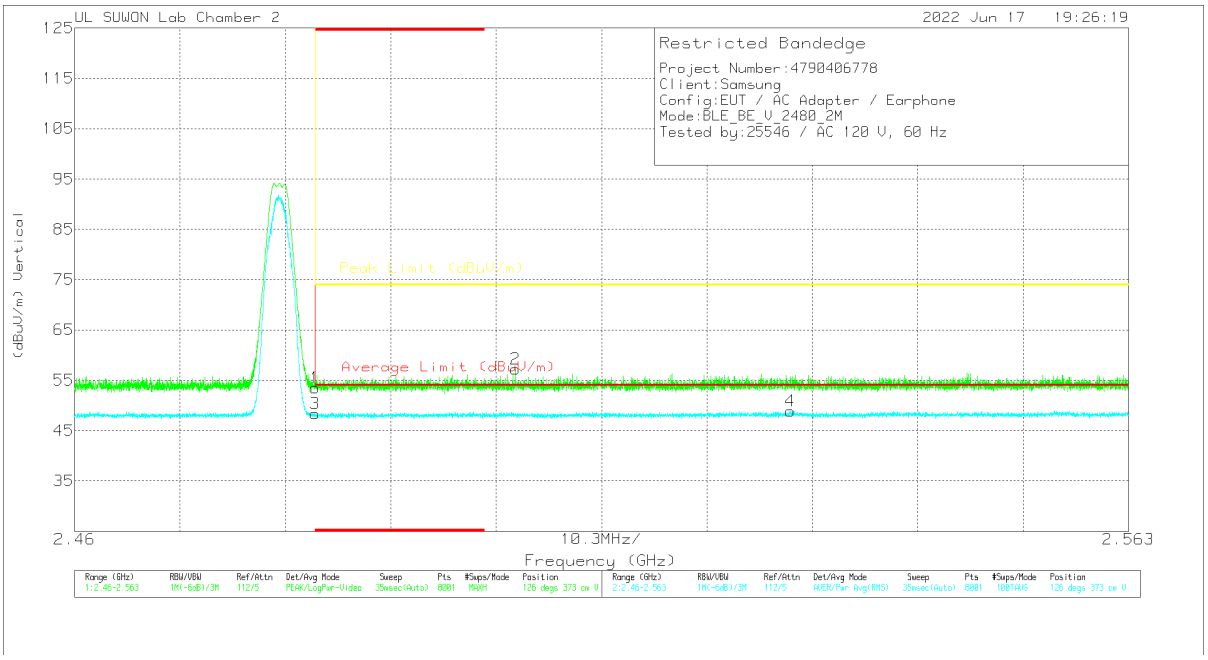
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	41.13	Pk	32	-19.6	0	53.53	-	-	74	-20.47	126	373	V
2	2.50307	44.58	Pk	32.1	-19.5	0	57.18	-	-	74	-16.82	126	373	V
3	* 2.48351	31.12	RMS	32	-19.6	4.83	48.35	54	-5.65	-	-	126	373	V
4	2.52994	31.3	RMS	32.1	-19.3	4.83	48.93	54	-5.07	-	-	126	373	V

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

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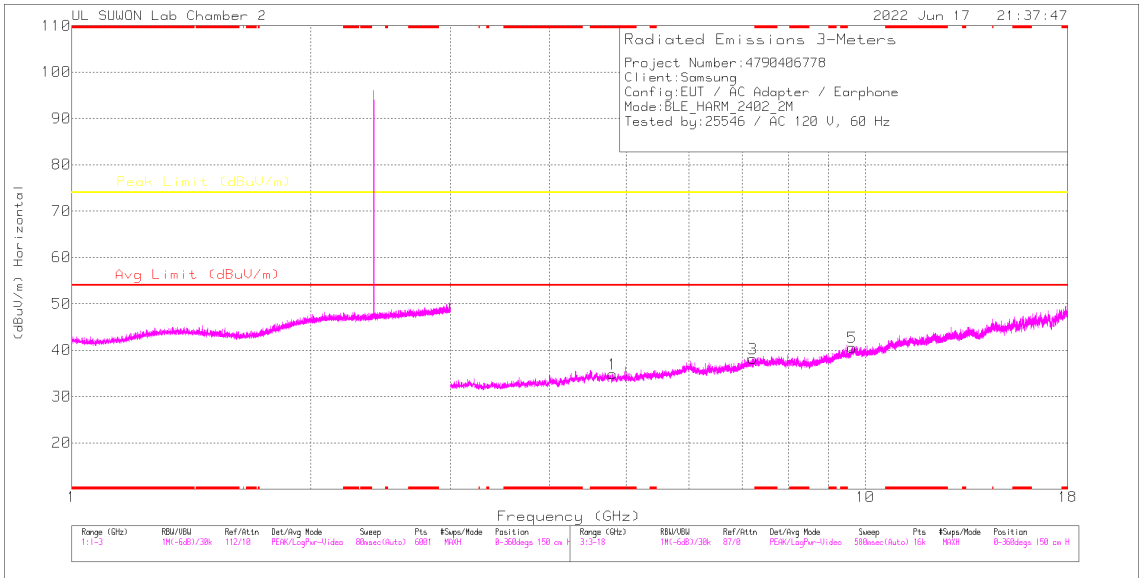
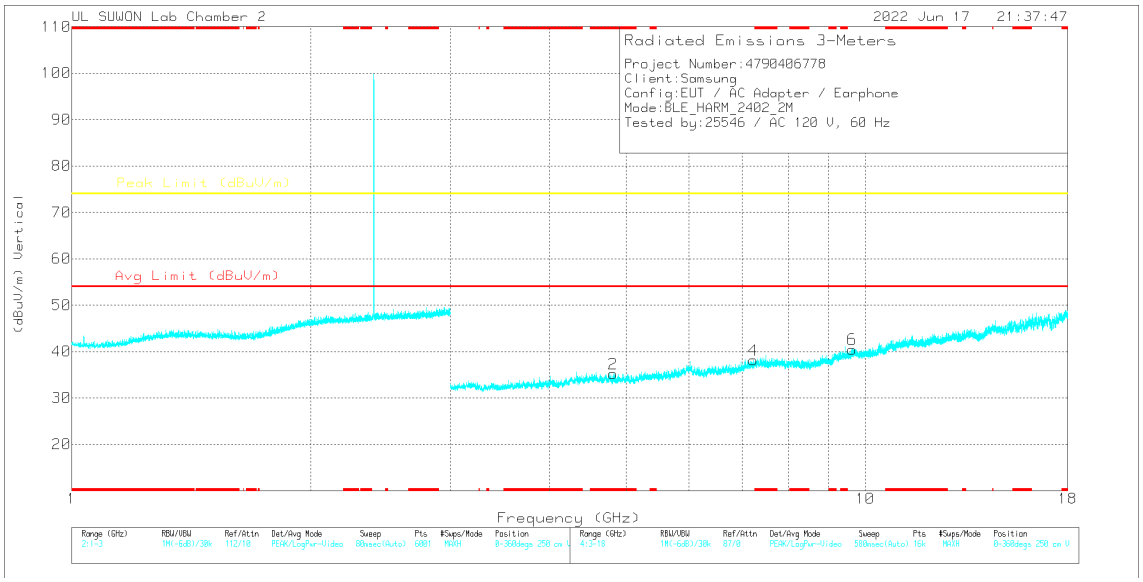
HARMONICS AND SPURIOUS EMISSIONS

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_00168724	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
* 4.79487	36.83	PK2	34.1	-27.6	0	43.33	-	-	74	-30.67	0	100	H
* 4.8196	36.81	PK2	34.1	-27.8	0	43.11	-	-	74	-30.89	0	100	V
7.21396	35.28	PK2	36.2	-25.1	0	46.38	-	-	74	-27.62	0	100	H
7.23991	35.34	PK2	36.2	-25.2	0	46.34	-	-	74	-27.66	0	100	V
9.6324	28.47	PK2	37	-21	0	44.47	-	-	74	-29.53	0	100	H
9.62401	32.9	PK2	37	-21.1	0	48.8	-	-	74	-25.2	0	100	V

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

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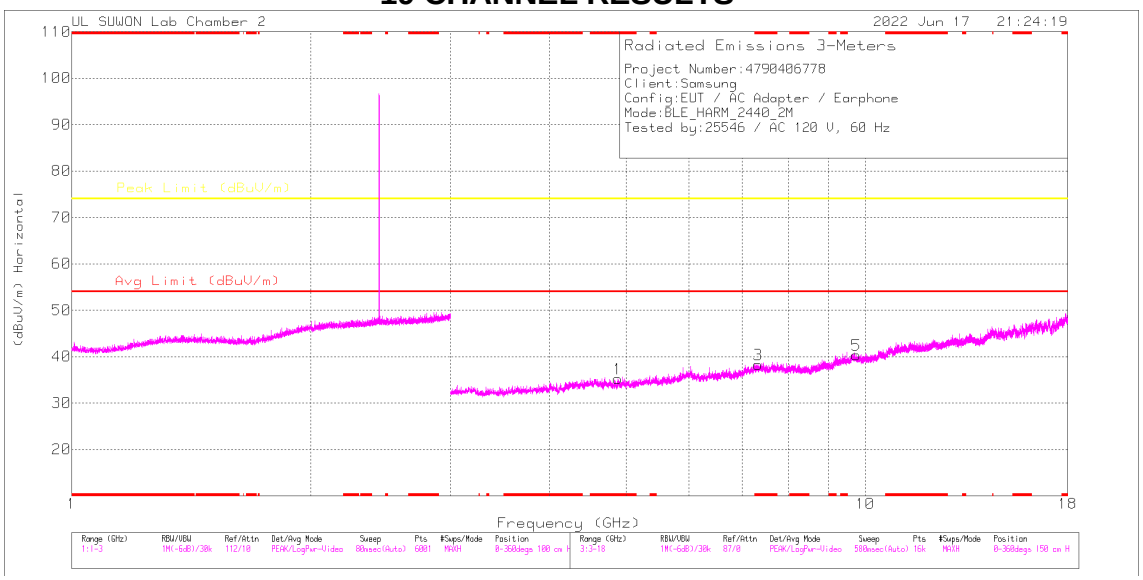
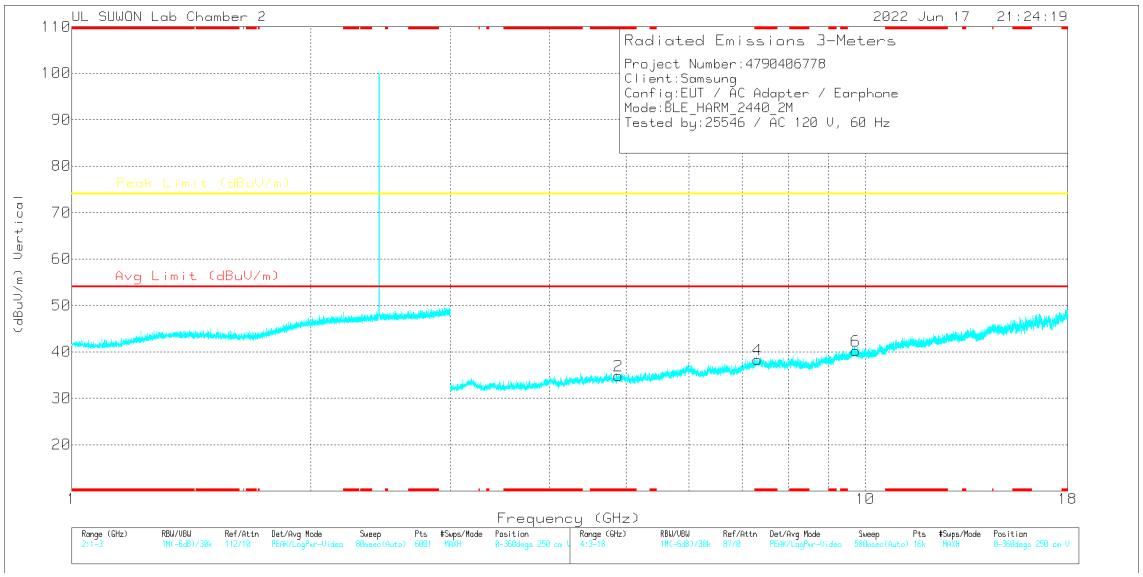
19 CHANNEL RESULTS



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_00168724	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
* 4.86916	36.85	PK2	34.1	-27.8	0	43.15	-	-	74	-30.85	0	100	H
* 4.88146	36.9	PK2	34.1	-27.6	0	43.4	-	-	74	-30.6	0	100	V
* 7.3207	34.88	PK2	36.1	-24.5	0	46.48	-	-	74	-27.52	0	100	H
* 7.3112	34.73	PK2	36.2	-24.6	0	46.33	-	-	74	-27.67	0	100	V
9.75525	33.15	PK2	37.2	-20.9	0	49.45	-	-	74	-24.55	0	100	H
9.74331	32.29	PK2	37.2	-20.9	0	48.59	-	-	74	-25.41	0	100	V

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

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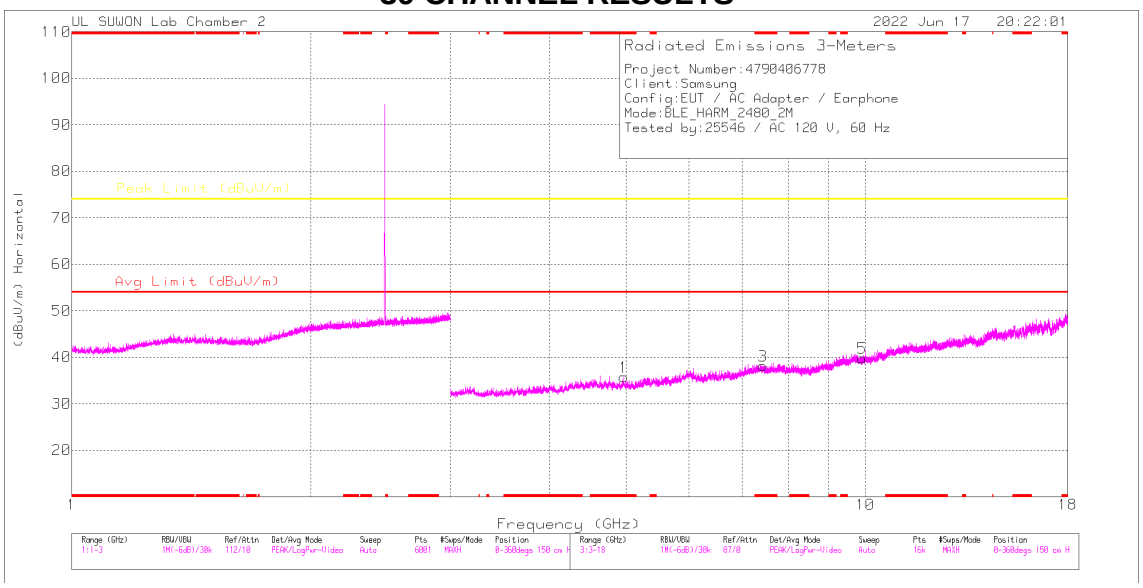
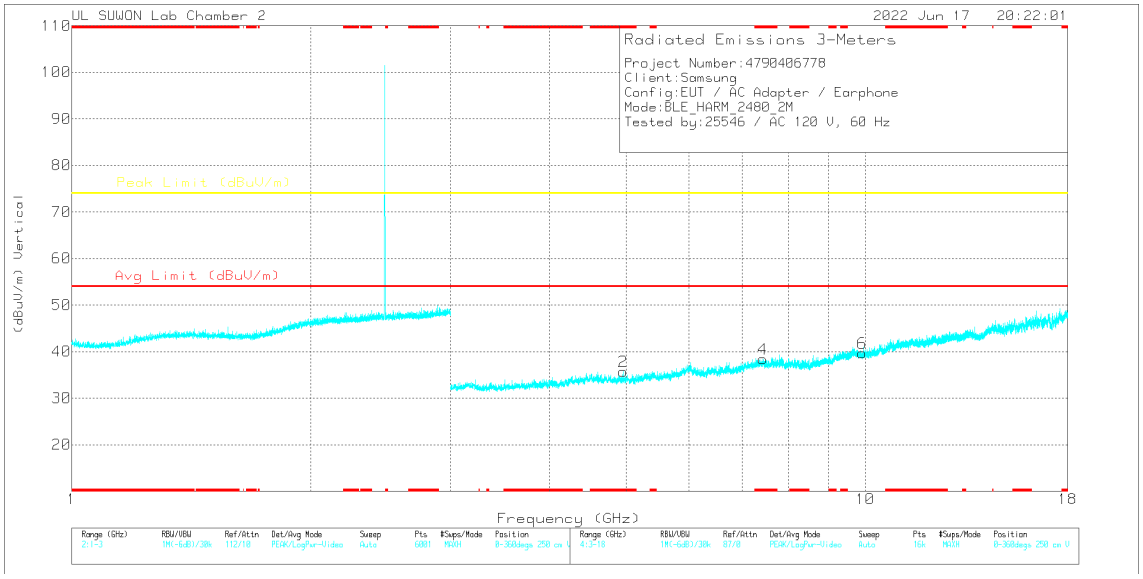
39 CHANNEL RESULTS



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_00168724	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
* 4.96293	36.38	PK2	34.1	-27	0	43.48	-	-	74	-30.52	0	100	H
* 4.95354	36.52	PK2	34.1	-27	0	43.62	-	-	74	-30.38	0	100	V
* 7.42522	35.02	PK2	36.1	-23.6	0	47.52	-	-	74	-26.48	0	100	H
* 7.43189	34.67	PK2	36	-23.7	0	46.97	-	-	74	-27.03	0	100	V
9.92019	25.36	PK2	37.4	-21.1	0	41.66	-	-	74	-32.34	0	100	H
9.91753	31.92	PK2	37.4	-21.1	0	48.22	-	-	74	-25.78	0	100	V

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

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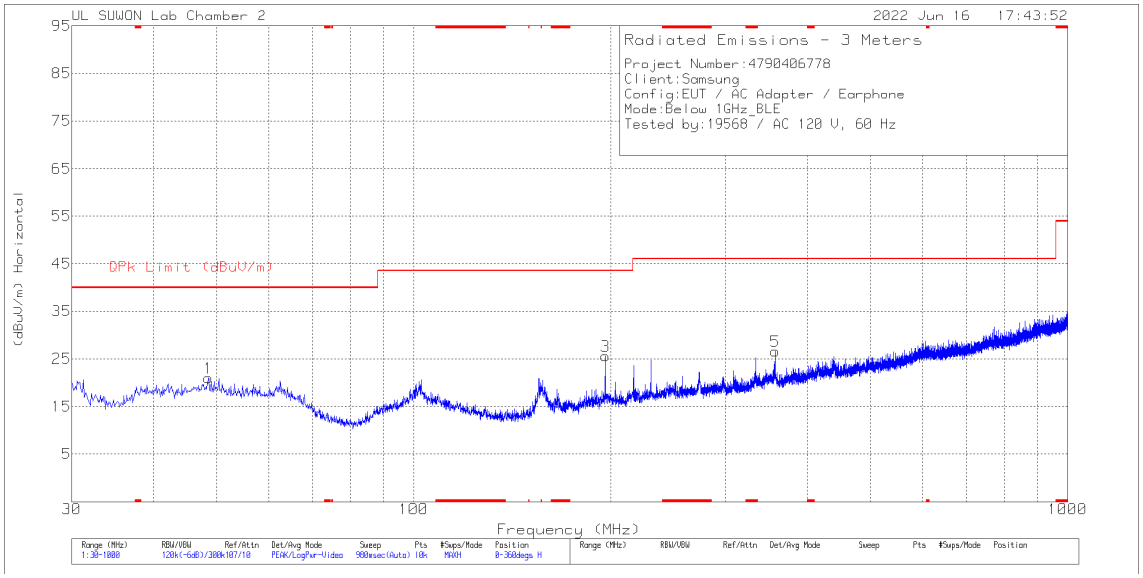
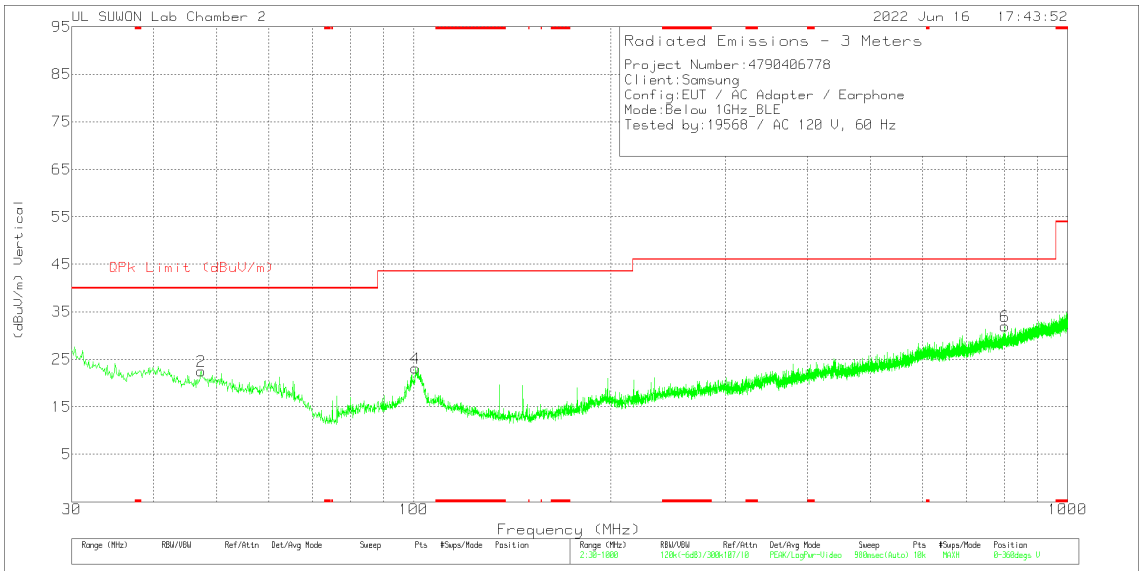
10.3. WORST CASE BELOW 1 GHz

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



HORIZONTAL



VERTICAL

Below 1GHz Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	48.527	32.32	Pk	19.9	-31.2	0	21.02	40	-18.98	0-360	300	H
3	196.258	38.06	Pk	17.4	-29.8	0	25.66	43.52	-17.86	0-360	100	H
5	357.181	34.72	Pk	20.6	-28.7	0	26.62	46.02	-19.4	0-360	100	H
2	47.363	33.93	Pk	19.8	-31.2	0	22.53	40	-17.47	0-360	100	V
4	100.616	36.29	Pk	17.5	-30.7	0	23.09	43.52	-20.43	0-360	100	V
6	802.508	31.82	Pk	26.7	-26.6	0	31.92	46.02	-14.1	0-360	200	V

Pk - Peak detector

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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 C63.10.

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

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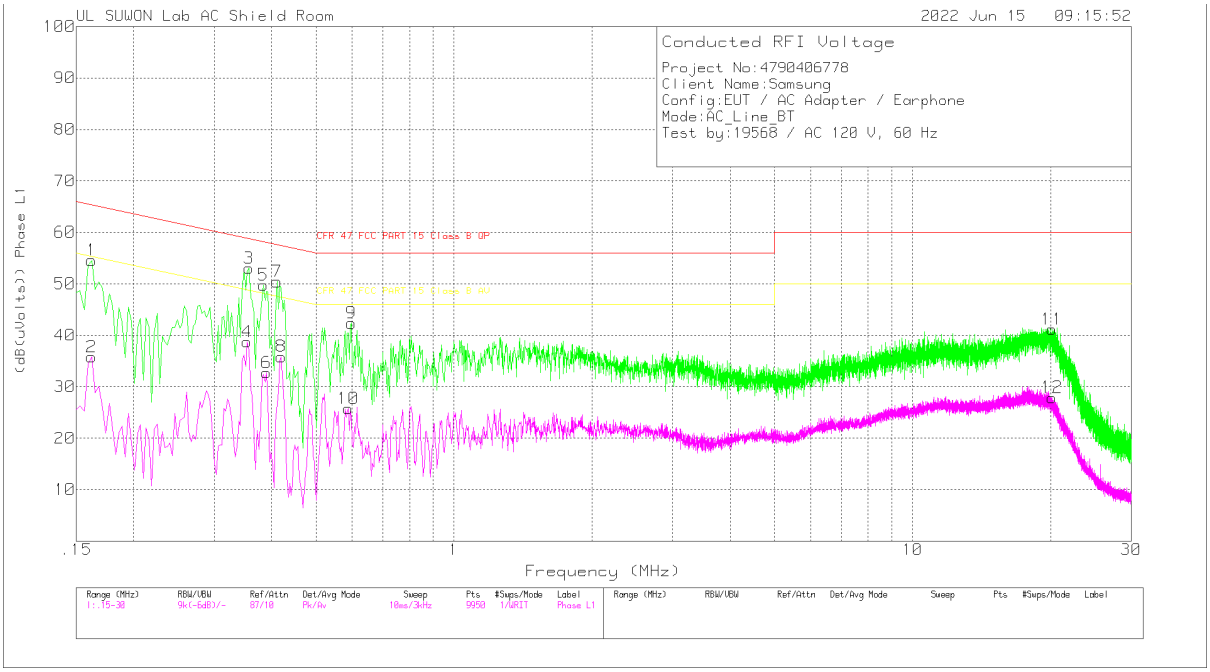
11.1. AC Power Line

LINE 1 RESULTS



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.162	44.57	Pk	9.9	.1	54.57	65.36	-10.79	-	-
2	.162	25.78	Av	9.9	.1	35.78	-	-	55.36	-19.58
3	.357	43.02	Pk	9.8	.2	53.02	58.8	-5.78	-	-
4	.354	28.73	Av	9.8	.2	38.73	-	-	48.87	-10.14
5	.384	39.75	Pk	9.8	.2	49.75	58.19	-8.44	-	-
6	.39	22.72	Av	9.8	.2	32.72	-	-	48.06	-15.34
7	.411	40.43	Pk	9.8	.2	50.43	57.63	-7.2	-	-
8	.42	25.85	Av	9.8	.2	35.85	-	-	47.45	-11.6
9	.597	32.35	Pk	9.8	.2	42.35	56	-13.65	-	-
10	.588	15.75	Av	9.8	.2	25.75	-	-	46	-20.25
11	20.154	30.56	Pk	10.2	.4	41.16	60	-18.84	-	-
12	20.154	17.3	Av	10.2	.4	27.9	-	-	50	-22.1

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]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.16215	42.58	Qp	9.9	.1	52.58	65.35	-12.77	-	-
.35625	40.59	Qp	9.8	.2	50.59	58.82	-8.23	-	-
.38475	37.38	Qp	9.8	.2	47.38	58.18	-10.8	-	-
.41175	33.23	Qp	9.8	.2	43.23	57.61	-14.38	-	-

Qp - Quasi-Peak detector

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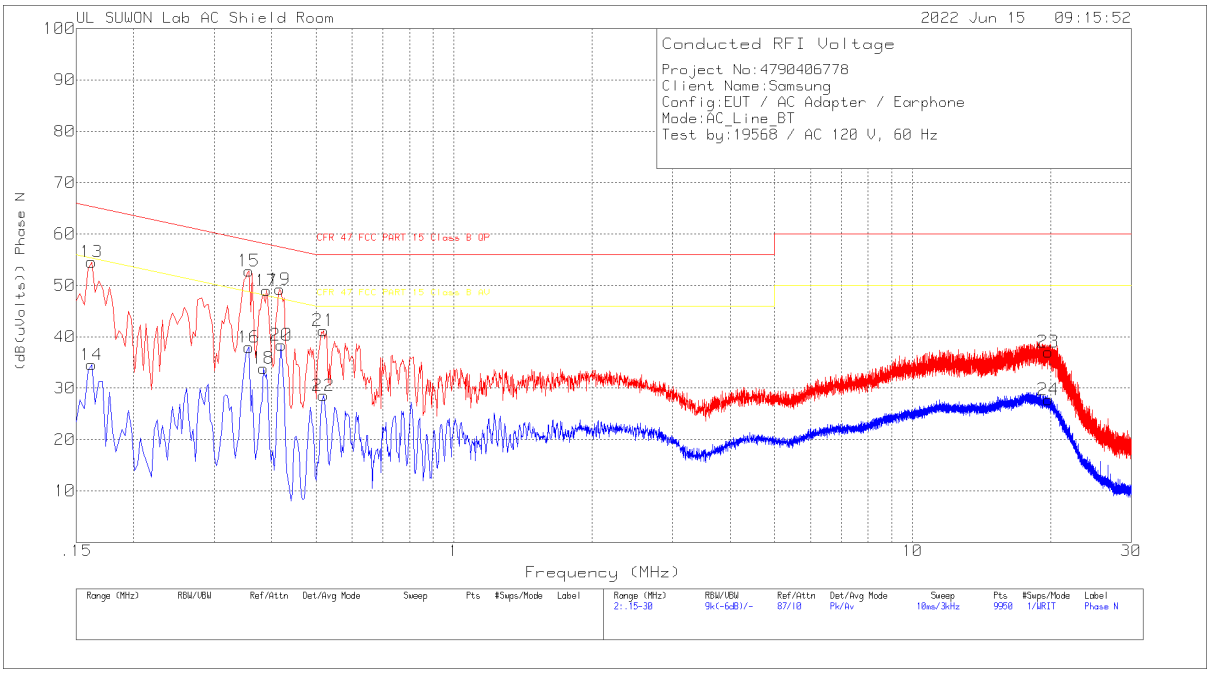
LINE 2 RESULTS



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	.162	44.57	Pk	9.9	.1	54.57	65.36	-10.79	-	-
14	.162	24.55	Av	9.9	.1	34.55	-	-	55.36	-20.81
15	.357	42.81	Pk	9.8	.2	52.81	58.8	-5.99	-	-
16	.357	27.95	Av	9.8	.2	37.95	-	-	48.8	-10.85
17	.39	38.98	Pk	9.8	.2	48.98	58.06	-9.08	-	-
18	.384	23.87	Av	9.8	.2	33.87	-	-	48.19	-14.32
19	.417	39.25	Pk	9.8	.2	49.25	57.51	-8.26	-	-
20	.42	28.37	Av	9.8	.2	38.37	-	-	47.45	-9.08
21	.519	31.11	Pk	9.9	.2	41.21	56	-14.79	-	-
22	.519	18.46	Av	9.9	.2	28.56	-	-	46	-17.44
23	19.776	26.46	Pk	10.2	.4	37.06	60	-22.94	-	-
24	19.776	17.14	Av	10.2	.4	27.74	-	-	50	-22.26

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)
.16125	41.92	Qp	9.9	.1	51.92	65.4	-13.48	-	-
.35625	40.32	Qp	9.8	.2	50.32	58.82	-8.5	-	-
.38475	36.78	Qp	9.8	.2	46.78	58.18	-11.4	-	-
.41775	36.4	Qp	9.8	.2	46.4	57.49	-11.09	-	-

Qp - Quasi-Peak detector

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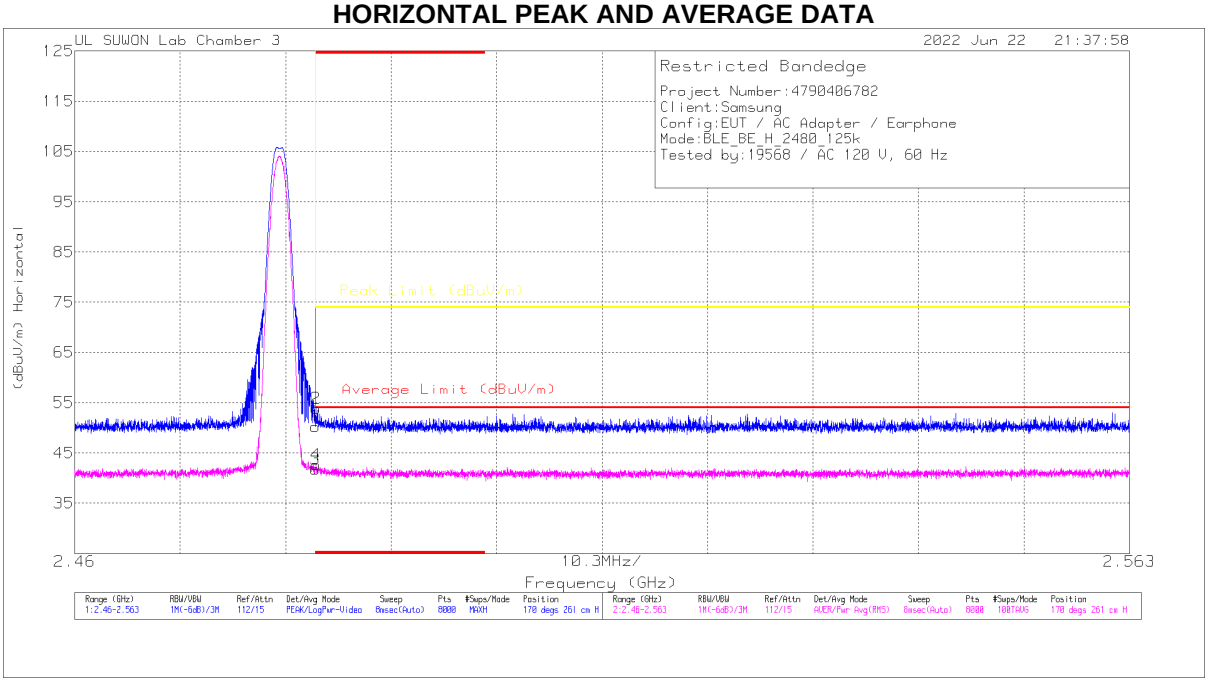
12. SPOT-CHECK TEST RESULT

BANDEDGE (WORST CASE: 125 kbps / 2480 MHz)

HORIZONTAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	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	* 2.4835	42.12	Pk	32.9	-24.7	0	50.32	-	-	74	-23.68	170	261	H
2	* 2.48355	45.63	Pk	32.9	-24.7	0	53.83	-	-	74	-20.17	170	261	H
3	* 2.4835	32.75	RMS	32.9	-24.7	.82	41.77	54	-12.23	-	-	170	261	H
4	* 2.48354	33.68	RMS	32.9	-24.7	.82	42.7	54	-11.3	-	-	170	261	H

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

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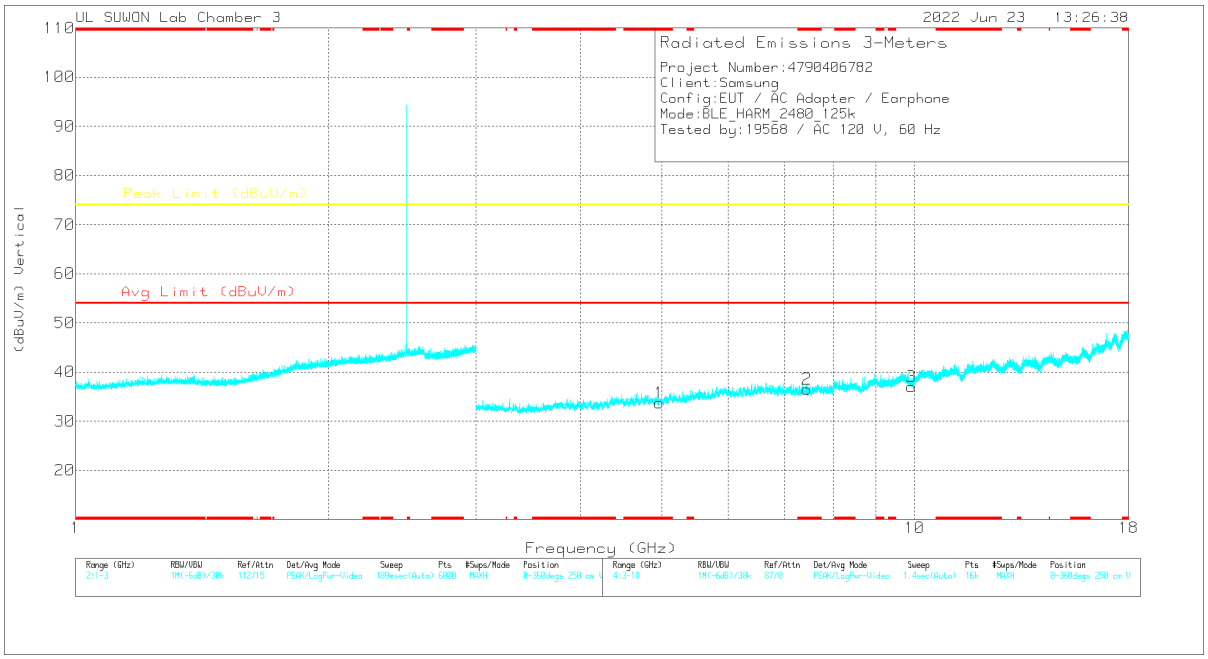
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 125 kbps / 2480 MHz)

2480 MHz VERTICAL



Note: Emission was scanned up to 40GHz; 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_00218957	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
* 4.96385	40.23	PK2	34.7	-30.3	0	44.63	-	-	74	-29.37	360	100	V
* 7.43424	35.66	PK2	36	-24.8	0	46.86	-	-	74	-27.14	360	100	V
9.9272	31.5	PK2	37.8	-21.5	0	47.8	-	-	74	-26.2	360	100	V

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

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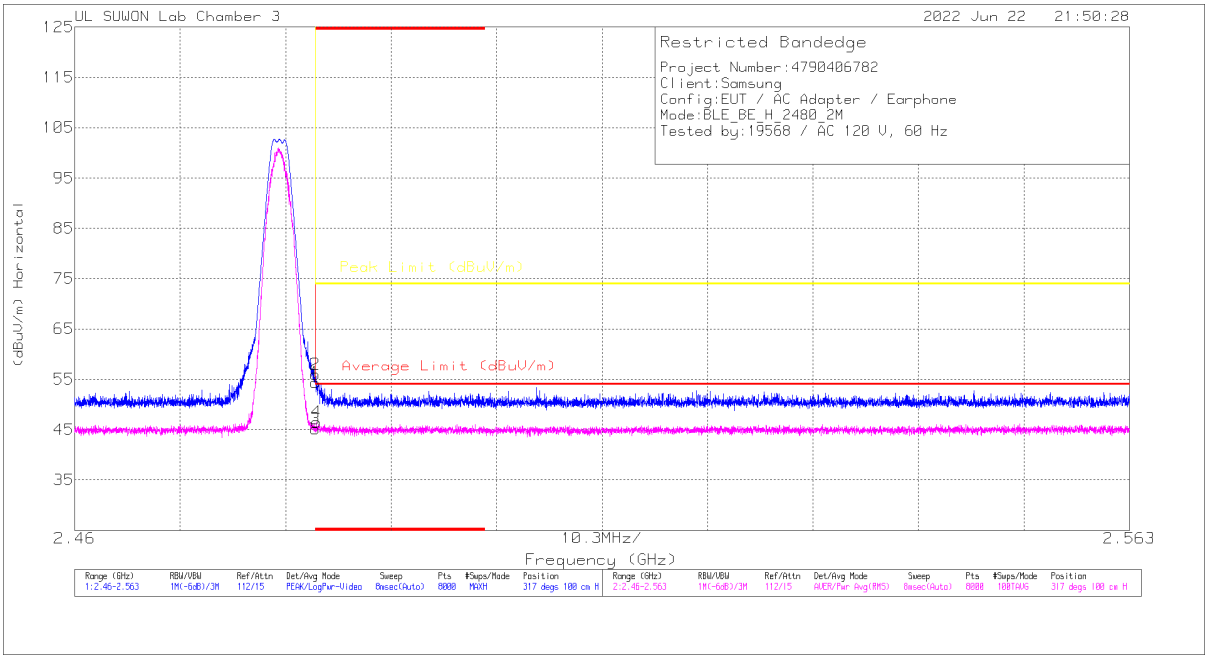
BANDEDGE (WORST CASE: 2 Mbps / 2480 MHz)

HORIZONTAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	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	* 2.4835	46.2	Pk	32.9	-24.7	0	54.4	-	-	74	-19.6	317	100	H
2	* 2.48351	47.74	Pk	32.9	-24.7	0	55.94	-	-	74	-18.06	317	100	H
3	* 2.4835	32.14	RMS	32.9	-24.7	4.85	45.19	54	-8.81	-	-	317	100	H
4	* 2.48362	33.43	RMS	32.9	-24.7	4.85	46.48	54	-7.52	-	-	317	100	H

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

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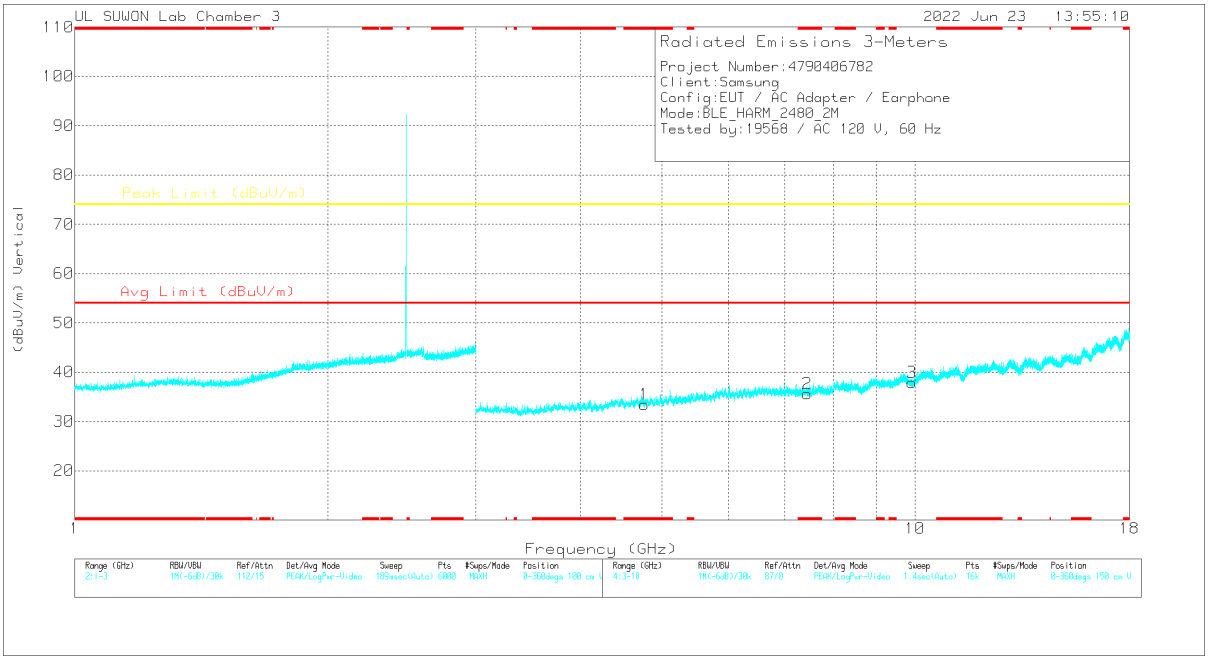
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 2 Mbps / 2480 MHz)

2480 MHz VERTICAL



Note: Emission was scanned up to 40GHz; 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_00218957	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
* 4.75985	39.16	PK2	34.6	-29.8	0	43.96	-	-	74	-30.04	360	100	V
* 7.4431	35.09	PK2	36	-24.8	0	46.29	-	-	74	-27.71	360	100	V
9.91958	32.03	PK2	37.7	-21.5	0	48.23	-	-	74	-25.77	360	100	V

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

END OF TEST REPORT

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