CERTIFICATION TEST REPORT

Report Number. : 4790558569-E1V1

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-A236V
FCC ID	:	A3LSMA236V
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 B

Date Of Issue:
2022-11-11

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

ACCREDITED
Testing Laboratory
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-11-11	Initial issue	Yeonhee Lim

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TABLE OF CONTENTS

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15B(04)
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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-A236V
SERIAL NUMBER:	664a124c26347ece, 664a124d17347ece (RADIATED)
DATE TESTED:	2022-11-07 ~ 2022-11-10;

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15B	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:

Yeonhee Lim
Suwon Lab Engineer
UL Korea, Ltd.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. ANSI C63.4-2014

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.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

Corrected Reading (dBuV) = Meter Reading (dBuV) + External Cable (dB) + Cableloss (dB)
46.62 dBuV + 9.8 dB + 0.1 dB = 56.52 dBuV

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

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

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2021.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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 WWAN operational mode.

5.2. TEST MODE

Mode	Description
GSM850	Communicating with Call simulator(CMW500)
WCDMA BAND 5	Communicating with Call simulator(CMW500)
LTE BAND 5	Communicating with Call simulator(CMW500)
LTE BAND 12	Communicating with Call simulator(CMW500)
LTE BAND 13	Communicating with Call simulator(CMW500)

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5.3. WORST-CASE ORIENTATION AND MODE

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X,Y and Z, it was determined that below orientation was worst-case orientation for each band.

i. Worst Axis Condition

Band	Worst Case		
	X	Y	Z
GSM 850	O	-	-
WCDMA B5	-	-	O
LTE B5	-	-	O
LTE B12	O	-	-
LTE B13	-	-	O

WCDMA Band5
WCDMA Band 5(Rx Frequncy range: 871.4-891.6 MHz) is covered by GSM 850(Rx Frequency range: 869-894 MHz) due to same frequency range and maximum tune-up limit is higher than WCDMA Band5. Therefore, only Mid channel was checked.

5G NR Band n5
5G NR BAND n5 (Rx Frequncy range: 869-894 MHz) is covered by GSM 850(Rx Frequency range: 869-894 MHz) due to same frequency range and maximum tune-up limit is higher than 5G NR BAND n5.

CONDUCTED EMISSION
Conducted emission testing was GSM 850, WCDMA B5, LTE B5, LTE B12, B13, B26. It was determined that the GSM 850 was the worst-case. therefore conducted emission testing reported GSM 850.

Note : The EUT is continuously communicated with the call box during the tests. Also attached with travel adapter for the worst case condition.

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5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacture	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37N3MAH988DK3	N/A
Data Cable	SAMSUNG	EP-DN980	GH39-02115A BWE	N/A
Earphone	SAMSUNG	GH59-15055A	EHS64AVFWE	N/A

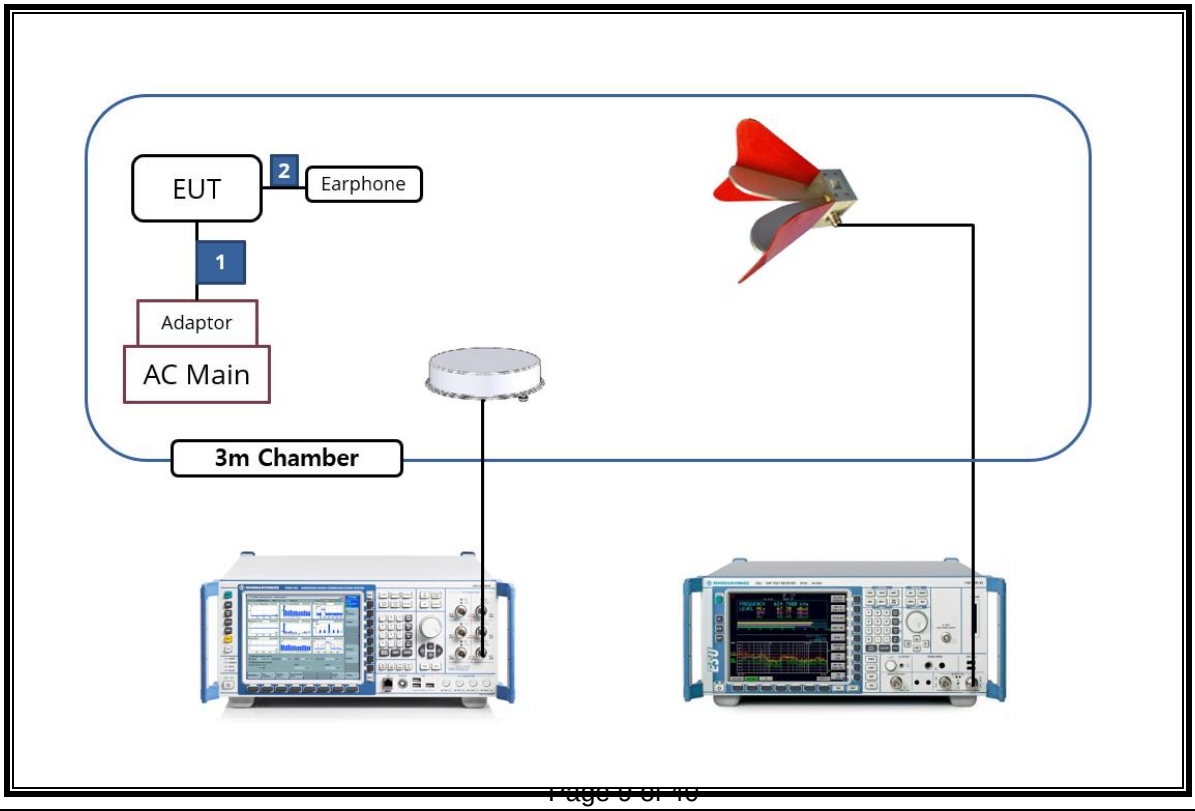
I/O CABLE

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 continuously communicated with the call box during the tests.

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. 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, Tuned Dipole 400~1000 MHz	ETS	3121D DB4	00164753	2023-02-08
Preamplifier	ETS	3116C-PA	00168841	2023-08-04
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2024-08-15
Communications Test Set	R&S	CMW500	169796	2023-01-07
Preamplifier, 1000 MHz	Sonoma	310N	341282	2023-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2023-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2023-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2023-08-01
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2023-08-01
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2023-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2023-07-29
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	80108-0004	N/A
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	110367-0003	N/A
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	2023-08-01
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	2023-08-01
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	2023-08-01
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	2023-08-01
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	2023-08-01
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	2023-08-01
Attenuator	PASTERNACK	PE7087-10	A009	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A001	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A008	2023-08-03
Attenuator	PASTERNACK	PE7004-10	2	2023-08-01
Attenuator	PASTERNACK	PE7395-10	A011	2023-08-03
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2023-08-01
LISN	R&S	ENV-216	101836	2023-08-04
LISN	R&S	ENV-216	101837	2023-08-04
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4-2014

LIMIT

§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dBµV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

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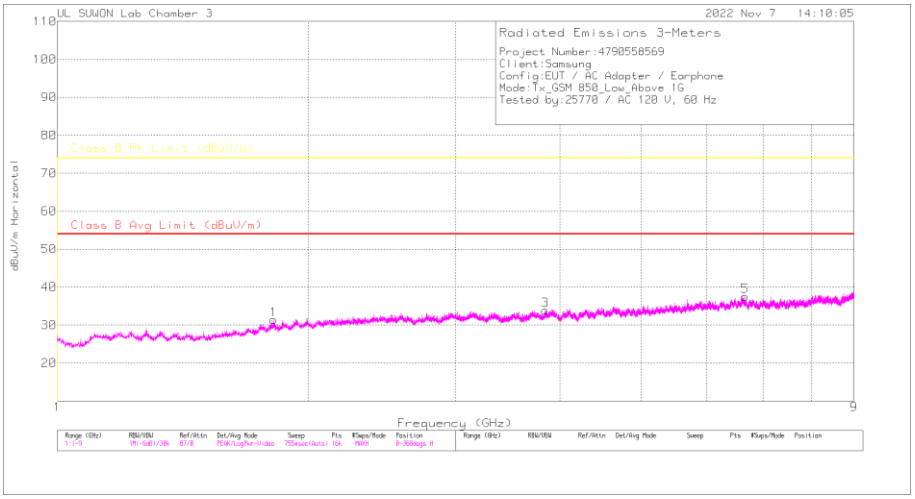
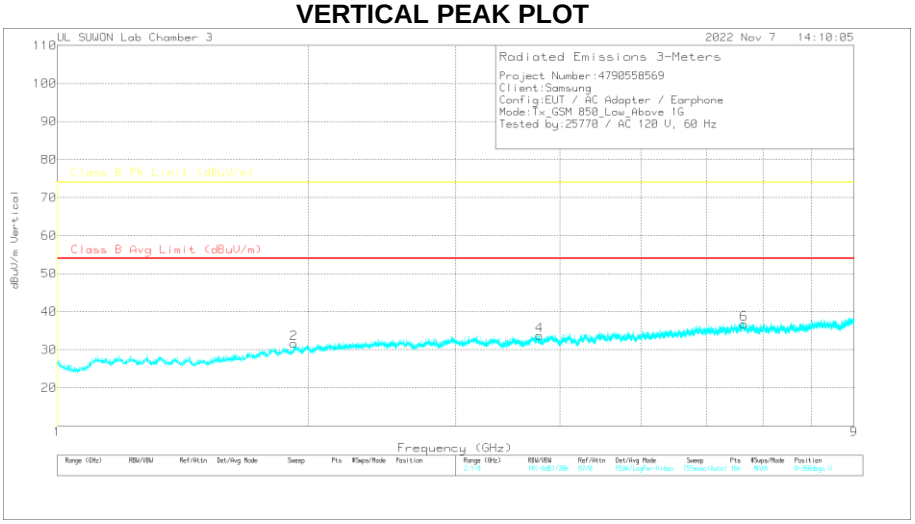
7.1.1. Above 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

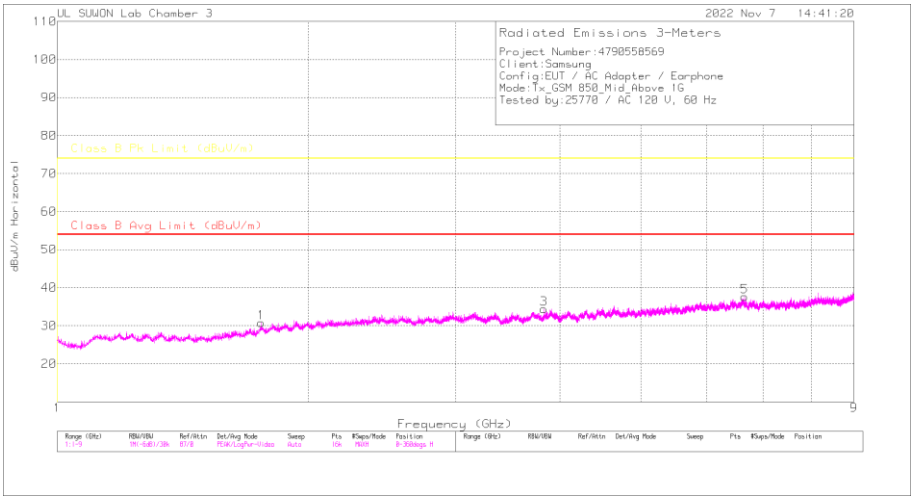
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.8155	32.3	Pk	31	-35.1	.7	28.9	-	-	74	-45.1	0	100	H
1.8155	20.88	Ca	31	-35.1	.7	17.48	54	-36.52	-	-	0	100	H
3.8435	29.72	Pk	33.9	-32.3	.5	31.82	-	-	74	-42.18	0	100	H
3.8435	18.09	Ca	33.9	-32.3	.5	20.19	54	-33.81	-	-	0	100	H
6.6645	24.67	Pk	36.5	-27.3	.5	34.37	-	-	74	-39.63	0	100	H
6.6645	13.68	Ca	36.5	-27.3	.5	23.38	54	-30.62	-	-	0	100	H
1.9215	32.28	Pk	31.5	-34.8	.6	29.58	-	-	74	-44.42	0	100	V
1.9215	20.24	Ca	31.5	-34.8	.6	17.54	54	-36.46	-	-	0	100	V
3.781	30.6	Pk	33.9	-32.5	.6	32.6	-	-	74	-41.4	0	100	V
3.781	18.01	Ca	33.9	-32.5	.6	20.01	54	-33.99	-	-	0	100	V
6.6505	26.03	Pk	36.5	-27.3	.5	35.73	-	-	74	-38.27	0	100	V
6.6505	13.61	Ca	36.5	-27.3	.5	23.31	54	-30.69	-	-	0	100	V

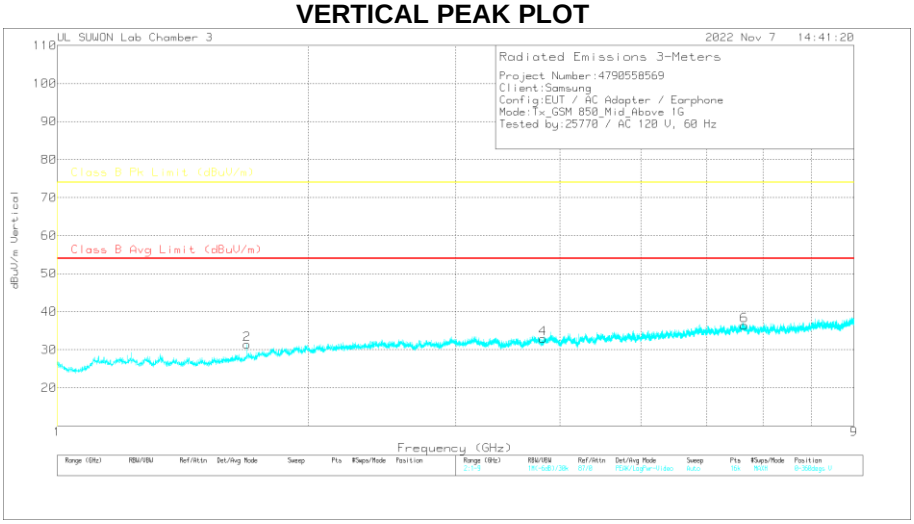
Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.756	32.34	Pk	30.5	-35.1	.7	28.44	-	-	74	-45.56	0	100	H
1.756	20.82	Ca	30.5	-35.1	.7	16.92	54	-37.08	-	-	0	100	H
3.8255	28.54	Pk	33.9	-32.4	.6	30.64	-	-	74	-43.36	0	100	H
3.8255	17.66	Ca	33.9	-32.4	.6	19.76	54	-34.24	-	-	0	100	H
6.655	24.37	Pk	36.5	-27.3	.5	34.07	-	-	74	-39.93	0	100	H
6.655	13.6	Ca	36.5	-27.3	.5	23.3	54	-30.7	-	-	0	100	H
1.6875	31.7	Pk	29.9	-35.2	.7	27.1	-	-	74	-46.9	0	100	V
1.6875	20.79	Ca	29.9	-35.2	.7	16.19	54	-37.81	-	-	0	100	V
3.8145	28.77	Pk	33.9	-32.5	.6	30.77	-	-	74	-43.23	0	100	V
3.8145	17.41	Ca	33.9	-32.5	.6	19.41	54	-34.59	-	-	0	100	V
6.652	24.63	Pk	36.5	-27.3	.5	34.33	-	-	74	-39.67	0	100	V
6.652	13.53	Ca	36.5	-27.3	.5	23.23	54	-30.77	-	-	0	100	V

Pk - Peak detector
Ca - CISPR average detection

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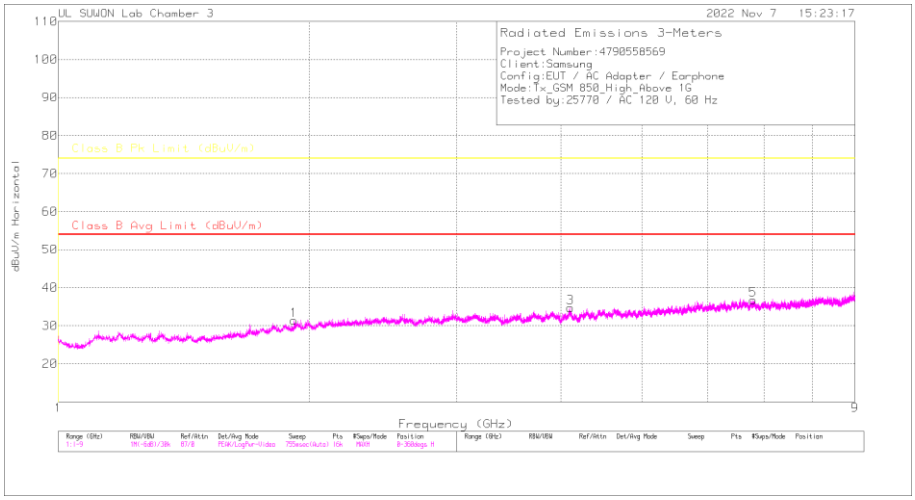
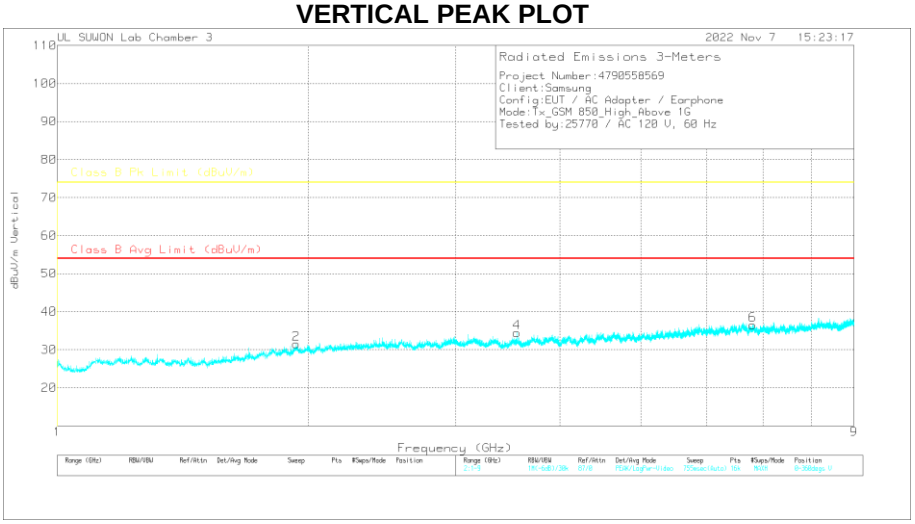
HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

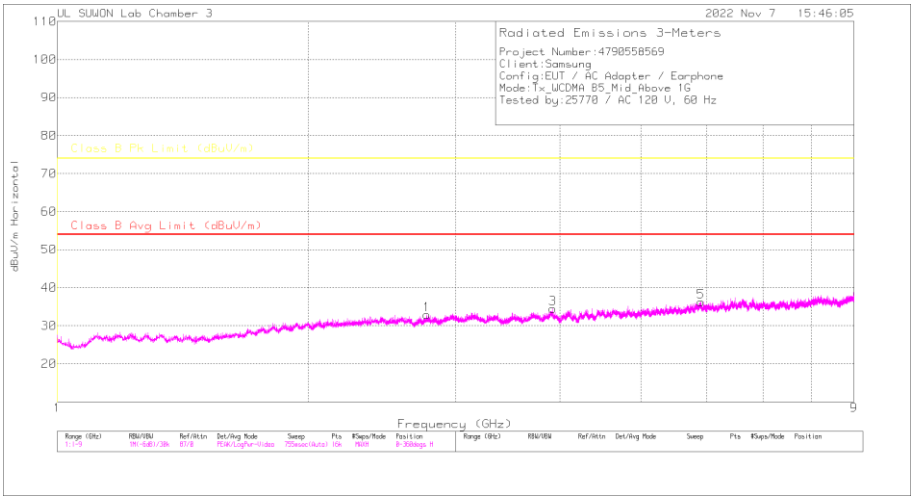
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.9165	31.11	Pk	31.5	-34.8	.6	28.41	-	-	74	-45.59	360	100	H
1.9165	19.79	Ca	31.5	-34.8	.6	17.09	54	-36.91	-	-	360	100	H
4.1045	30.56	Pk	33.9	-31.7	.5	33.26	-	-	74	-40.74	360	100	H
4.1045	18	Ca	33.9	-31.7	.5	20.7	54	-33.3	-	-	360	100	H
6.793	24.92	Pk	36.3	-27	.5	34.72	-	-	74	-39.28	360	100	H
6.793	13.28	Ca	36.3	-27	.5	23.08	54	-30.92	-	-	360	100	H
1.9335	32.5	Pk	31.5	-34.8	.6	29.8	-	-	74	-44.2	360	100	V
1.9335	20.57	Ca	31.5	-34.8	.6	17.87	54	-36.13	-	-	360	100	V
3.5515	30.44	Pk	33.4	-33.1	.6	31.34	-	-	74	-42.66	360	100	V
3.5515	18.7	Ca	33.4	-33.1	.6	19.6	54	-34.4	-	-	360	100	V
6.802	25.04	Pk	36.3	-27	.5	34.84	-	-	74	-39.16	360	100	V
6.802	13.47	Ca	36.3	-27	.5	23.27	54	-30.73	-	-	360	100	V

Pk - Peak detector
Ca - CISPR average detection

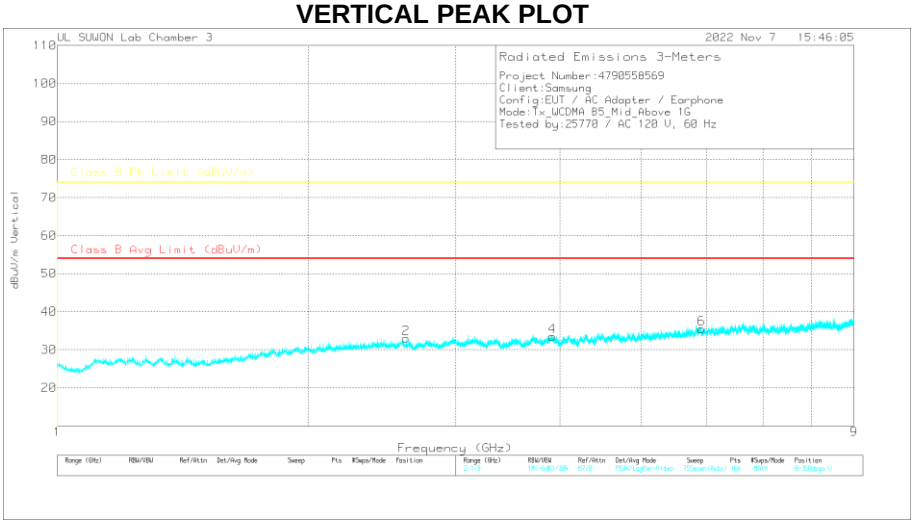
7.1.2. Above 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

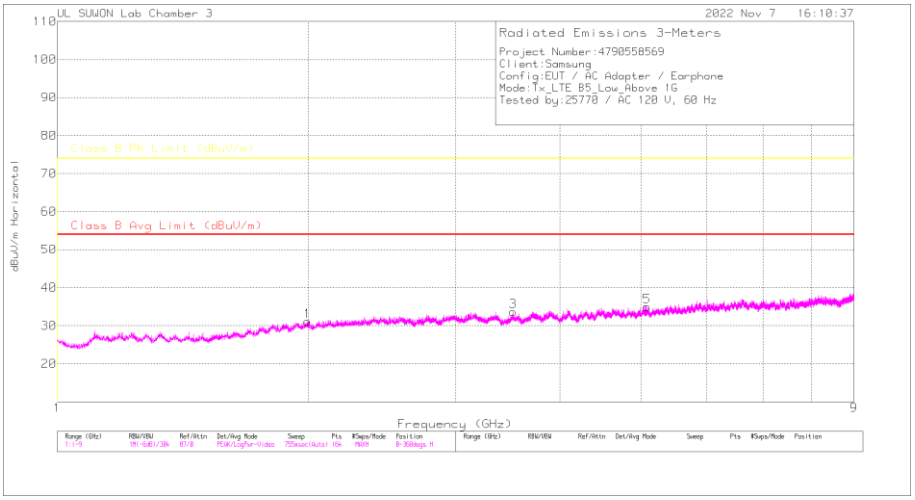
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.7725	30.93	Pk	32.8	-34.1	.7	30.33	-	-	74	-43.67	0	100	H
2.7725	19.78	Ca	32.8	-34.1	.7	19.18	54	-34.82	-	-	0	100	H
3.9205	29.13	Pk	33.9	-32.1	.5	31.43	-	-	74	-42.57	0	100	H
3.9205	18	Ca	33.9	-32.1	.5	20.3	54	-33.7	-	-	0	100	H
5.9045	26.32	Pk	36	-29.1	.5	33.72	-	-	74	-40.28	0	100	H
5.9045	15.13	Ca	36	-29.1	.5	22.53	54	-31.47	-	-	0	100	H
2.617	31.97	Pk	32.8	-34.3	.7	31.17	-	-	74	-42.83	0	100	V
2.617	19.58	Ca	32.8	-34.3	.7	18.78	54	-35.22	-	-	0	100	V
3.9195	29.37	Pk	33.9	-32.1	.5	31.67	-	-	74	-42.33	0	100	V
3.9195	18.03	Ca	33.9	-32.1	.5	20.33	54	-33.67	-	-	0	100	V
5.911	25.97	Pk	36	-29.1	.5	33.37	-	-	74	-40.63	0	100	V
5.911	14.93	Ca	36	-29.1	.5	22.33	54	-31.67	-	-	0	100	V

Pk - Peak detector
Ca - CISPR average detection

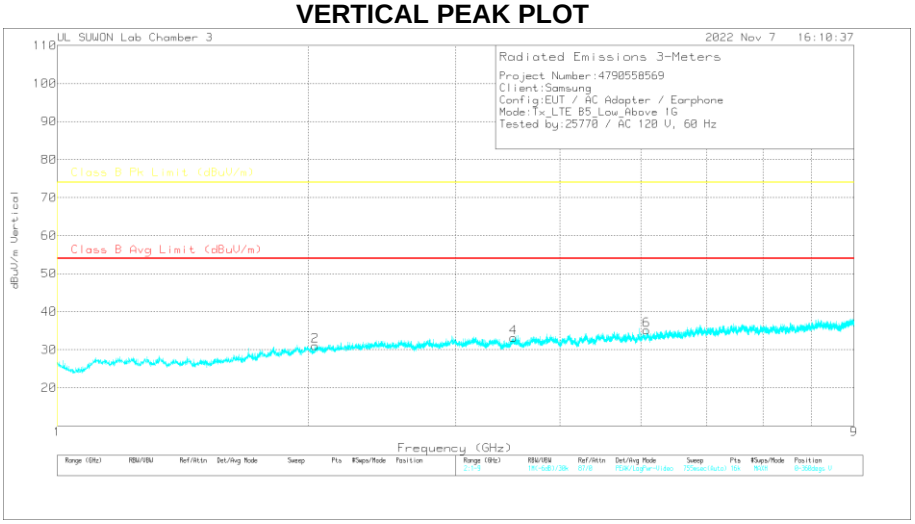
7.1.3. Above 1 GHz in the LTE Band 5

LOW CHANNEL(874.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

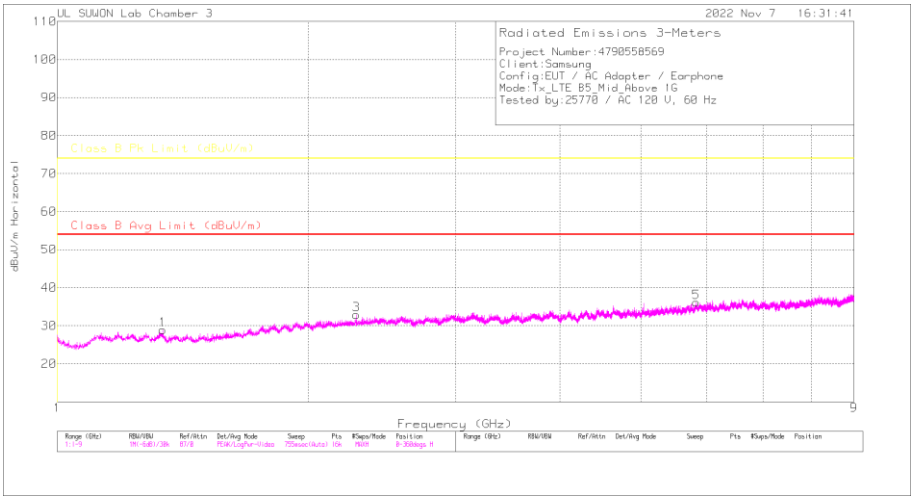
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.995	31.47	Pk	31.7	-34.8	.6	28.97	-	-	74	-45.03	0	100	H
1.995	20.45	Ca	31.7	-34.8	.6	17.95	54	-36.05	-	-	0	100	H
3.517	30.13	Pk	33.3	-33	.6	31.03	-	-	74	-42.97	0	100	H
3.517	18.86	Ca	33.3	-33	.6	19.76	54	-34.24	-	-	0	100	H
5.0875	27.56	Pk	34.8	-30.2	.5	32.66	-	-	74	-41.34	0	100	H
5.0875	16.08	Ca	34.8	-30.2	.5	21.18	54	-32.82	-	-	0	100	H
2.038	30.59	Pk	31.9	-34.9	.6	28.19	-	-	74	-45.81	0	100	V
2.038	19.86	Ca	31.9	-34.9	.6	17.46	54	-36.54	-	-	0	100	V
3.518	29.81	Pk	33.3	-33	.6	30.71	-	-	74	-43.29	0	100	V
3.518	18.88	Ca	33.3	-33	.6	19.78	54	-34.22	-	-	0	100	V
5.083	28.25	Pk	34.8	-30.2	.5	33.35	-	-	74	-40.65	0	100	V
5.083	16	Ca	34.8	-30.2	.5	21.1	54	-32.9	-	-	0	100	V

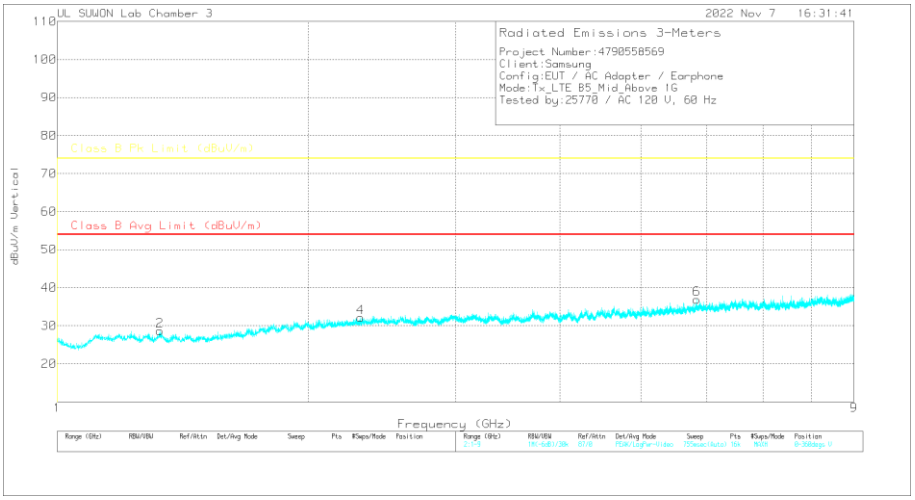
Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(881.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

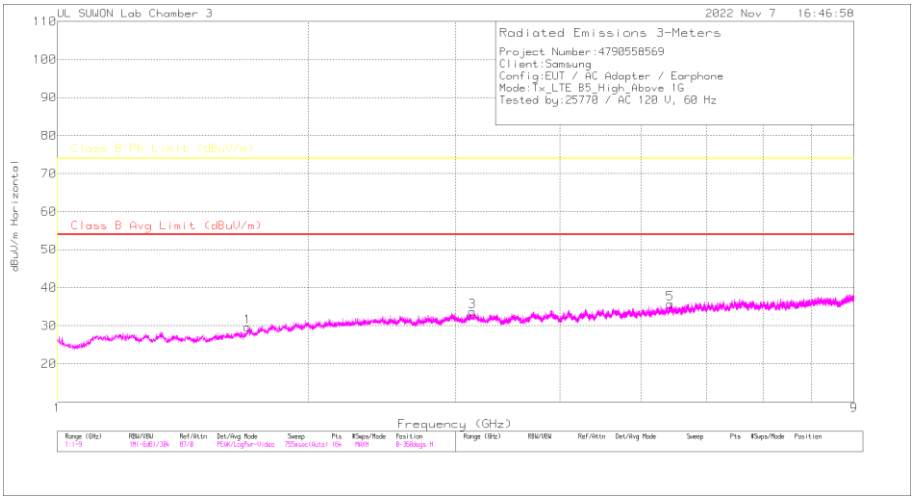
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.338	32.29	Pk	28.6	-35.8	.7	25.79	-	-	74	-48.21	0	100	H
1.338	21.34	Ca	28.6	-35.8	.7	14.84	54	-39.16	-	-	0	100	H
2.281	30.86	Pk	32.3	-34.3	.7	29.56	-	-	74	-44.44	0	100	H
2.281	19.76	Ca	32.3	-34.3	.7	18.46	54	-35.54	-	-	0	100	H
5.8285	26.45	Pk	35.9	-29	.5	33.85	-	-	74	-40.15	0	100	H
5.8285	15.35	Ca	35.9	-29	.5	22.75	54	-31.25	-	-	0	100	H
1.327	33.55	Pk	28.7	-35.8	.7	27.15	-	-	74	-46.85	0	100	V
1.327	21.45	Ca	28.7	-35.8	.7	15.05	54	-38.95	-	-	0	100	V
2.308	30.33	Pk	32.4	-34.3	.7	29.13	-	-	74	-44.87	0	100	V
2.308	19.59	Ca	32.4	-34.3	.7	18.39	54	-35.61	-	-	0	100	V
5.837	25.96	Pk	35.9	-29	.5	33.36	-	-	74	-40.64	0	100	V
5.837	15.22	Ca	35.9	-29	.5	22.62	54	-31.38	-	-	0	100	V

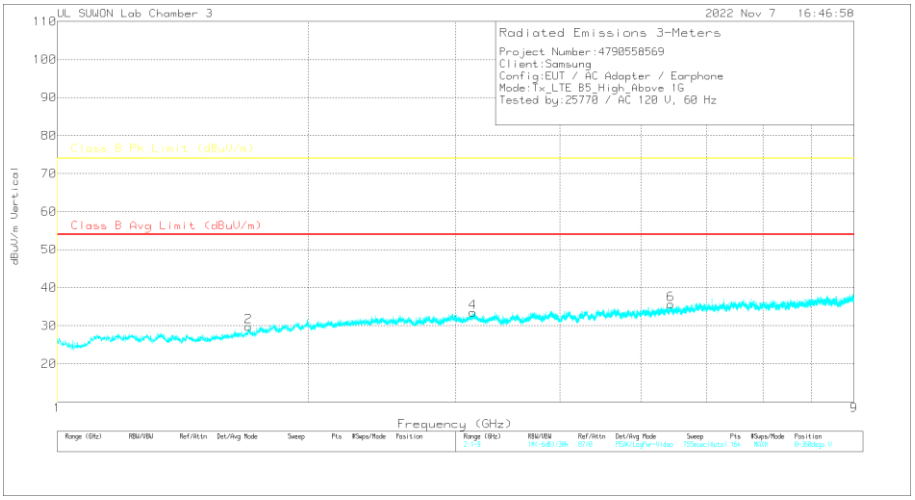
Pk - Peak detector
Ca - CISPR average detection

HIGH CHANNEL(889.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

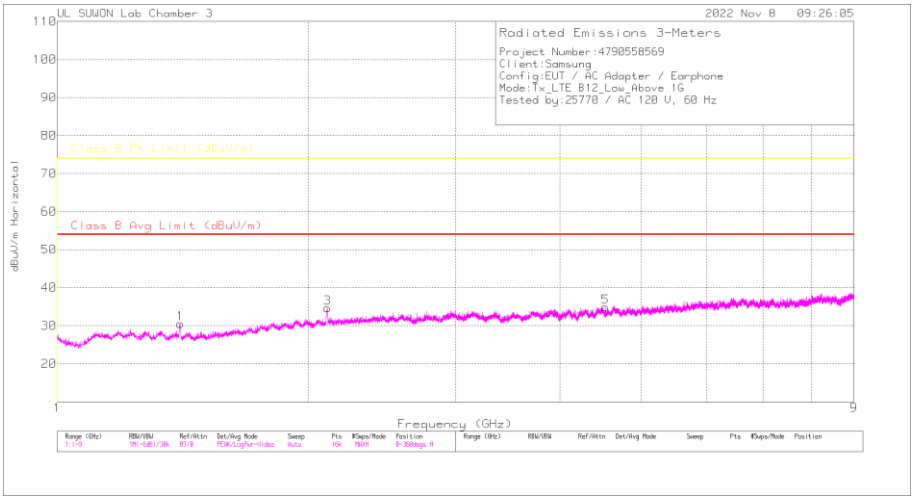
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.691	31.92	Pk	29.9	-35.2	.7	27.32	-	-	74	-46.68	0	100	H
1.691	20.51	Ca	29.9	-35.2	.7	15.91	54	-38.09	-	-	0	100	H
3.141	30.25	Pk	33.4	-33.4	.7	30.95	-	-	74	-43.05	0	100	H
3.141	19.25	Ca	33.4	-33.4	.7	19.95	54	-34.05	-	-	0	100	H
5.423	27.79	Pk	35.2	-29.9	.5	33.59	-	-	74	-40.41	0	100	H
5.423	16.15	Ca	35.2	-29.9	.5	21.95	54	-32.05	-	-	0	100	H
1.695	32.05	Pk	29.9	-35.2	.7	27.45	-	-	74	-46.55	0	100	V
1.695	20.67	Ca	29.9	-35.2	.7	16.07	54	-37.93	-	-	0	100	V
3.1475	31.41	Pk	33.4	-33.4	.7	32.11	-	-	74	-41.89	0	100	V
3.1475	19.32	Ca	33.4	-33.4	.7	20.02	54	-33.98	-	-	0	100	V
5.4265	28.6	Pk	35.3	-30	.5	34.4	-	-	74	-39.6	0	100	V
5.4265	16.18	Ca	35.3	-30	.5	21.98	54	-32.02	-	-	0	100	V

Pk - Peak detector
Ca - CISPR average detection

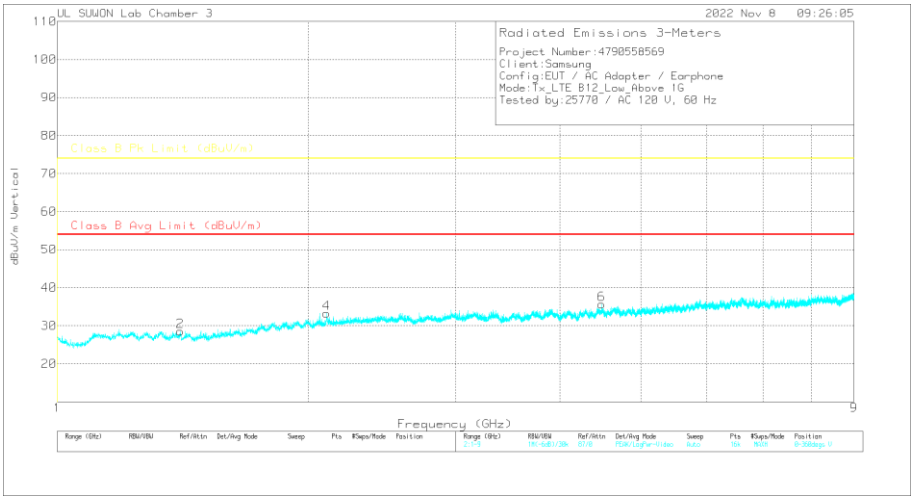
7.1.4. Above 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

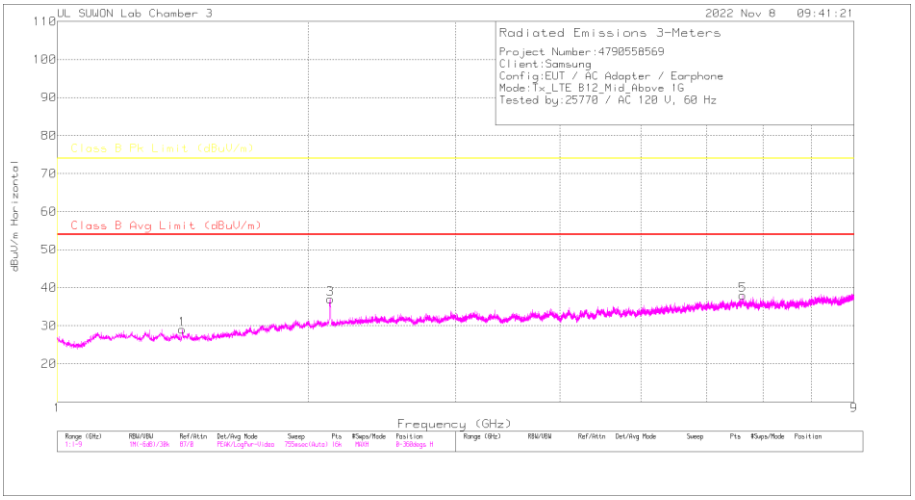
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.404	43.94	Pk	28.4	-35.7	.7	37.34	-	-	74	-36.66	0	100	H
1.404	31.18	Ca	28.4	-35.7	.7	24.58	54	-29.42	-	-	0	100	H
1.4045	41.74	Pk	28.4	-35.7	.7	35.14	-	-	74	-38.86	0	100	V
1.4045	29.82	Ca	28.4	-35.7	.7	23.22	54	-30.78	-	-	0	100	V
2.1065	41.71	Pk	32	-34.6	.7	39.81	-	-	74	-34.19	0	100	H
2.1065	29.55	Ca	32	-34.6	.7	27.65	54	-26.35	-	-	0	100	H
2.102	41.92	Pk	32	-34.6	.7	40.02	-	-	74	-33.98	0	100	V
2.102	29.37	Ca	32	-34.6	.7	27.47	54	-26.53	-	-	0	100	V
4.5365	37.86	Pk	34.4	-31	.5	41.76	-	-	74	-32.24	0	100	H
4.5365	25.56	Ca	34.4	-31	.5	29.46	54	-24.54	-	-	0	100	H
4.488	38.84	Pk	34.4	-31.1	.5	42.64	-	-	74	-31.36	0	100	V
4.488	26.49	Ca	34.4	-31.1	.5	30.29	54	-23.71	-	-	0	100	V

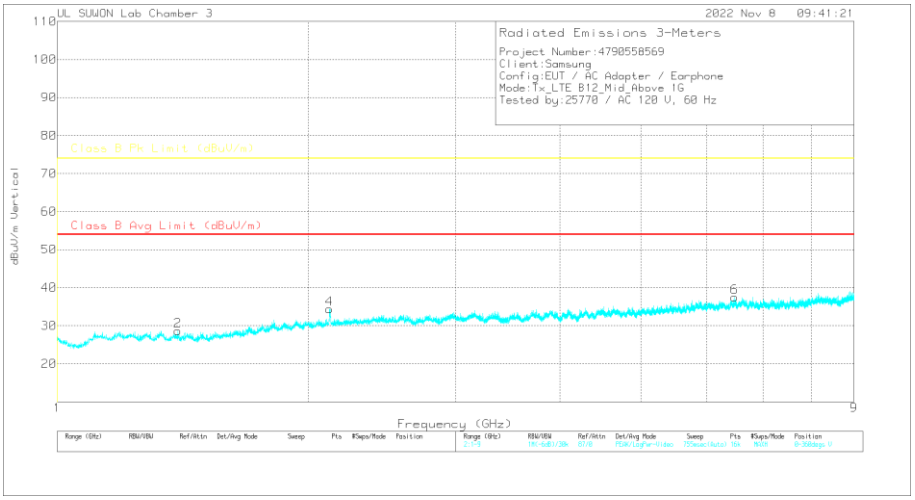
Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

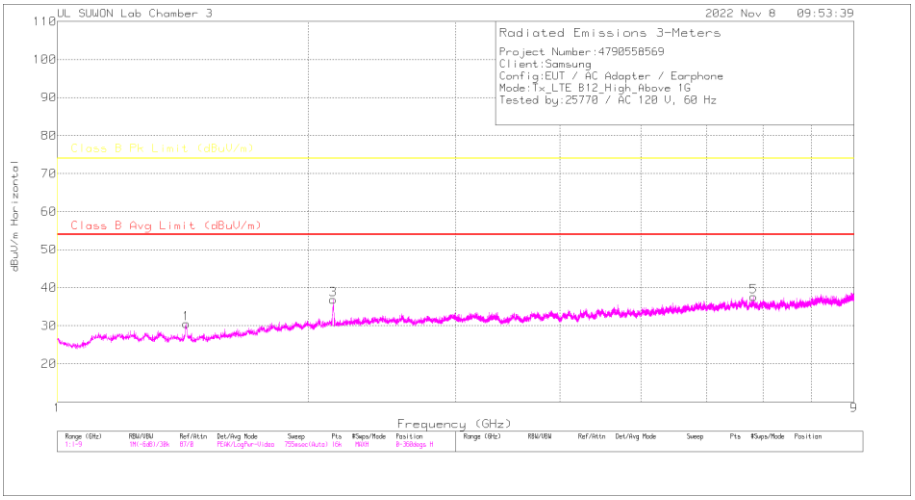
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.4115	42.55	Pk	28.4	-35.7	.7	35.95	-	-	74	-38.05	0	100	H
1.4115	30.37	Ca	28.4	-35.7	.7	23.77	54	-30.23	-	-	0	100	H
1.3955	42.39	Pk	28.4	-35.7	.7	35.79	-	-	74	-38.21	0	100	V
1.3955	29.98	Ca	28.4	-35.7	.7	23.38	54	-30.62	-	-	0	100	V
2.1225	43.15	Pk	32	-34.5	.7	41.35	-	-	74	-32.65	0	100	H
2.1225	29.55	Ca	32	-34.5	.7	27.75	54	-26.25	-	-	0	100	H
2.1185	41.69	Pk	32	-34.6	.7	39.79	-	-	74	-34.21	0	100	V
2.1185	29.54	Ca	32	-34.6	.7	27.64	54	-26.36	-	-	0	100	V
6.6245	36	Pk	36.5	-27.2	.5	45.8	-	-	74	-28.2	0	100	H
6.6245	23.15	Ca	36.5	-27.2	.5	32.95	54	-21.05	-	-	0	100	H
6.476	35.42	Pk	36.5	-27.7	.5	44.72	-	-	74	-29.28	0	100	V
6.476	23.2	Ca	36.5	-27.7	.5	32.5	54	-21.5	-	-	0	100	V

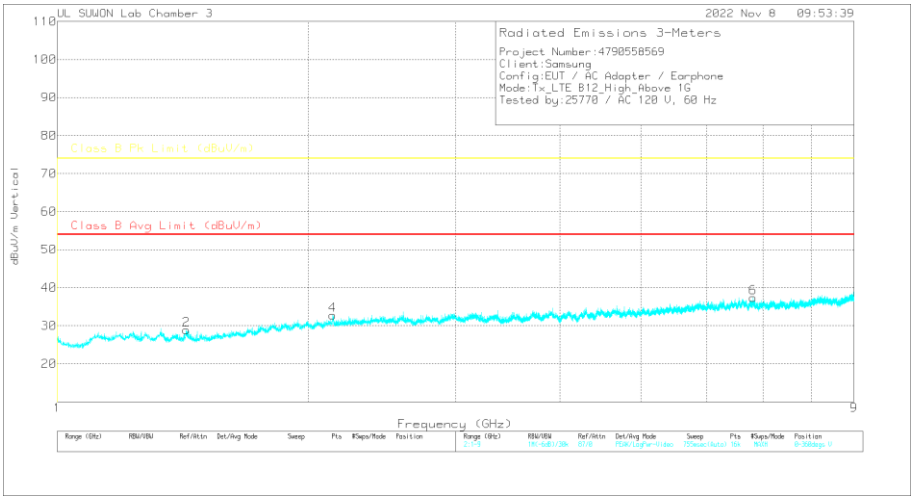
Pk - Peak detector
Ca - CISPR average detection

HIGH CHANNEL(744.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.428	44.32	Pk	28.3	-35.6	.7	37.72	-	-	74	-36.28	0	100	H
1.428	31.43	Ca	28.3	-35.6	.7	24.83	54	-29.17	-	-	0	100	H
1.4285	43.1	Pk	28.3	-35.6	.7	36.5	-	-	74	-37.5	0	100	V
1.4285	30.54	Ca	28.3	-35.6	.7	23.94	54	-30.06	-	-	0	100	V
2.141	41.52	Pk	32	-34.4	.7	39.82	-	-	74	-34.18	0	100	H
2.141	28.98	Ca	32	-34.4	.7	27.28	54	-26.72	-	-	0	100	H
2.138	42.09	Pk	32	-34.5	.7	40.29	-	-	74	-33.71	0	100	V
2.138	29.13	Ca	32	-34.5	.7	27.33	54	-26.67	-	-	0	100	V
6.822	34.91	Pk	36.3	-26.9	.5	44.81	-	-	74	-29.19	0	100	H
6.822	22.59	Ca	36.3	-26.9	.5	32.49	54	-21.51	-	-	0	100	H
6.8165	34.93	Pk	36.3	-27	.5	44.73	-	-	74	-29.27	0	100	V
6.8165	22.64	Ca	36.3	-27	.5	32.44	54	-21.56	-	-	0	100	V

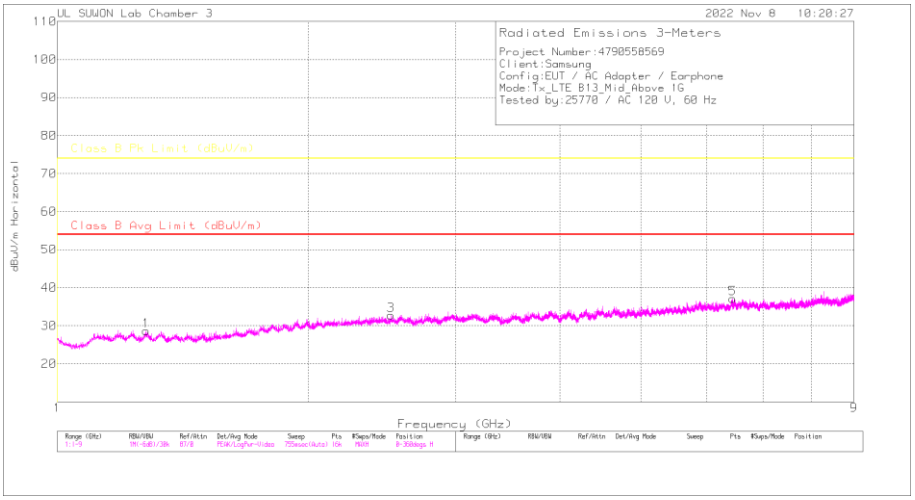
Pk - Peak detector
Ca - CISPR average detection

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15B(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

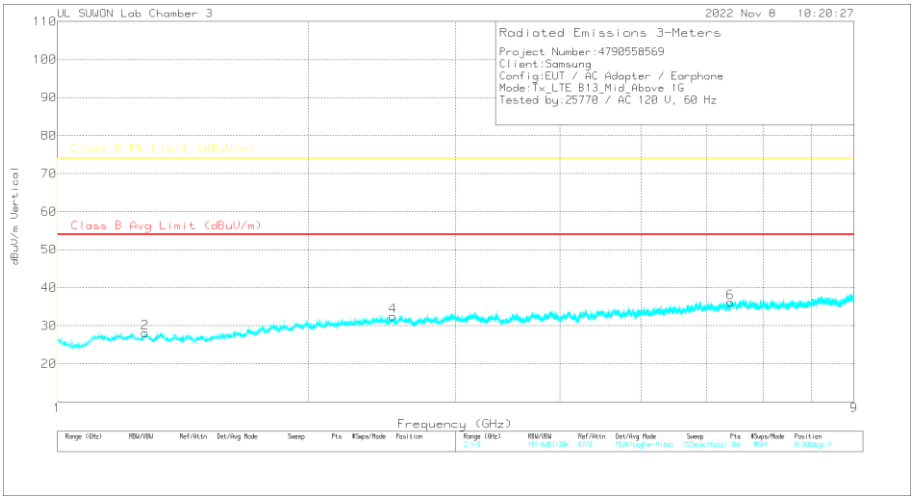
7.1.5. Above 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

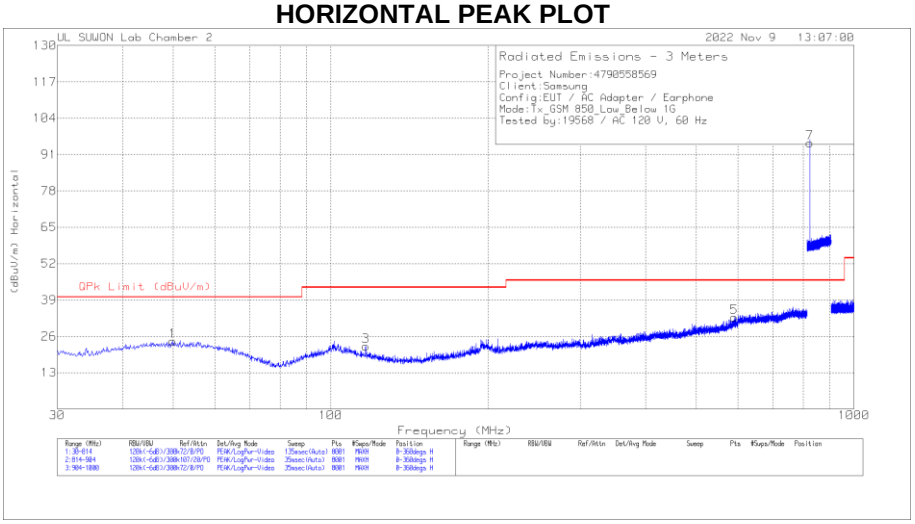
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	1-18G[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.2775	34.28	Pk	28.8	-35.8	.8	28.08	-	-	74	-45.92	360	100	H
1.2775	21.38	Ca	28.8	-35.8	.8	15.18	54	-38.82	-	-	360	100	H
2.5105	31.68	Pk	32.9	-34.3	.7	30.98	-	-	74	-43.02	360	100	H
2.5105	19.51	Ca	32.9	-34.3	.7	18.81	54	-35.19	-	-	360	100	H
6.439	26.39	Pk	36.4	-27.9	.5	35.39	-	-	74	-38.61	360	100	H
6.439	13.99	Ca	36.4	-27.9	.5	22.99	54	-31.01	-	-	360	100	H
1.2745	33.28	Pk	28.8	-35.8	.8	27.08	-	-	74	-46.92	360	100	V
1.2745	21.27	Ca	28.8	-35.8	.8	15.07	54	-38.93	-	-	360	100	V
2.524	31.21	Pk	32.9	-34.3	.7	30.51	-	-	74	-43.49	360	100	V
2.524	19.62	Ca	32.9	-34.3	.7	18.92	54	-35.08	-	-	360	100	V
6.398	25.34	Pk	36.3	-28.1	.5	34.04	-	-	74	-39.96	360	100	V
6.398	13.84	Ca	36.3	-28.1	.5	22.54	54	-31.46	-	-	360	100	V

Pk - Peak detector
Ca - CISPR average detection

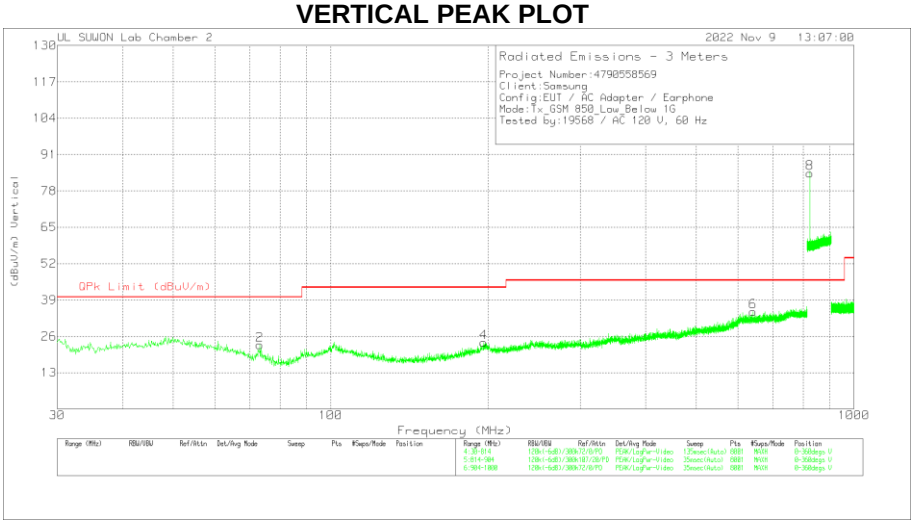
7.1.6. Below 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

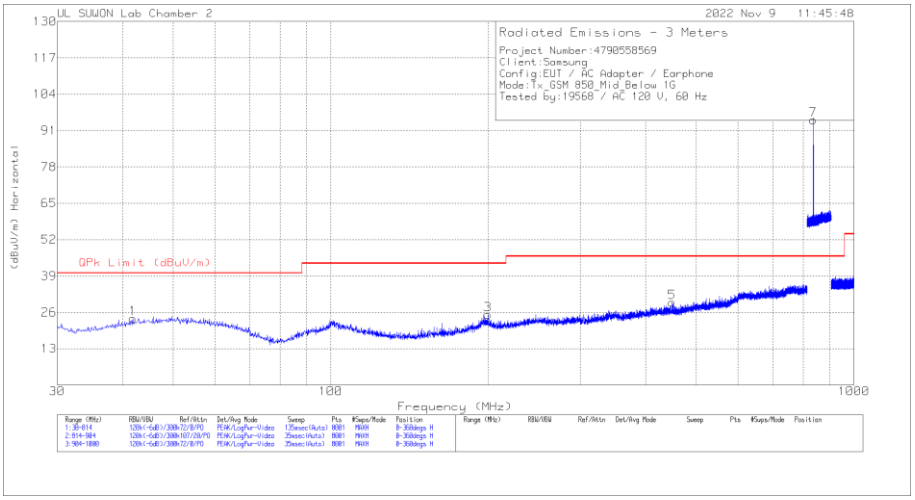
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	49.894	3.41	Pk	20.1	.8	24.31	40	-15.69	0-360	100	H
3	116.632	5.19	Pk	16	1.2	22.39	43.52	-21.13	0-360	100	H
5	590.07	5.19	Pk	24.8	2.8	32.79	46.02	-13.23	0-360	200	H
7	824.2038	65.32	Pk	26.5	3.3	95.12	**46.02**	**49.1**	0-360	200	H
2	73.218	7.72	Pk	14.3	1	23.02	40	-16.98	0-360	200	V
4	195.914	4.46	Pk	17.8	1.6	23.86	43.52	-19.66	0-360	300	V
6	641.324	7.14	Pk	24.8	2.9	34.84	46.02	-11.18	0-360	300	V
8	824.2038	54.57	Pk	26.5	3.3	84.37	**46.02**	**38.35**	0-360	300	V

Pk - Peak detector

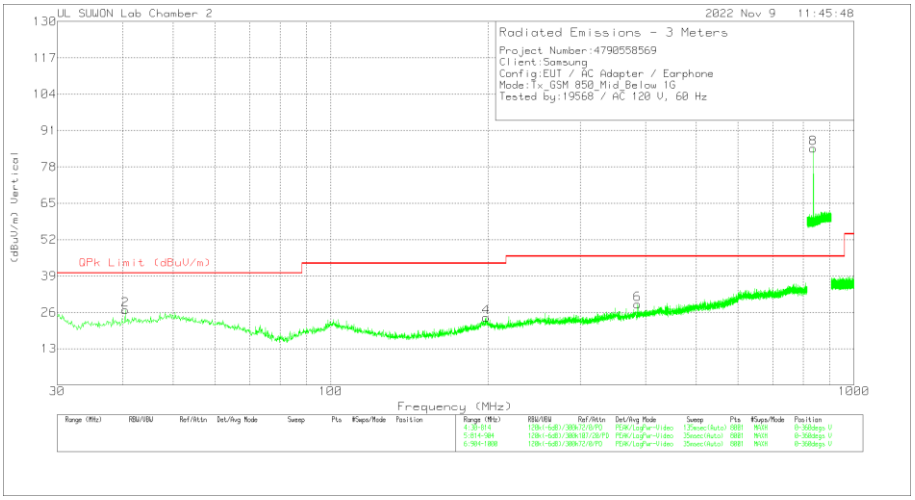
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

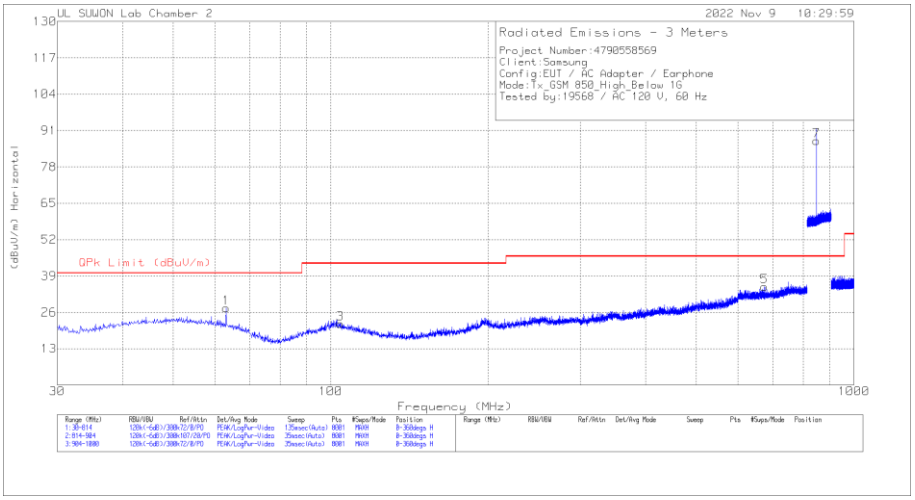
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	41.858	3.61	Pk	19.3	.8	23.71	40	-16.29	0-360	300	H
3	199.54	5.88	Pk	17.7	1.6	25.18	43.52	-18.34	0-360	100	H
5	449.048	5.3	Pk	21.9	2.4	29.6	46.02	-16.42	0-360	100	H
7	836.6238	64.93	Pk	26.6	3.3	94.83	**46.02**	**48.81**	0-360	200	H
2	40.486	7.36	Pk	18.8	.7	26.86	40	-13.14	0-360	300	V
4	198.07	4.55	Pk	18	1.6	24.15	43.52	-19.37	0-360	200	V
6	386.23	5.78	Pk	20.9	2.2	28.88	46.02	-17.14	0-360	200	V
8	836.6013	54.76	Pk	26.6	3.3	84.66	**46.02**	**38.64**	0-360	200	V

Pk - Peak detector

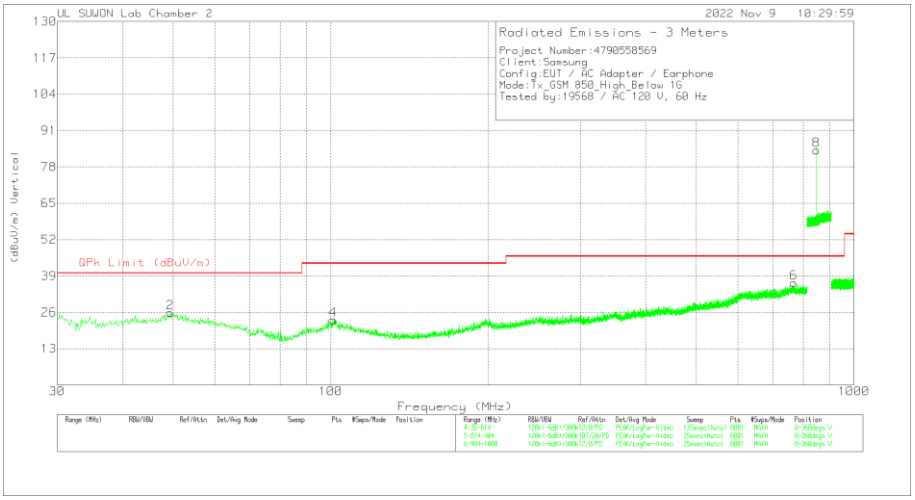
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	63.124	8.75	Pk	17.9	.9	27.55	40	-12.45	0-360	100	H
3	104.284	3.09	Pk	17.6	1.2	21.89	43.52	-21.63	0-360	200	H
5	675.036	6.95	Pk	25.2	3	35.15	46.02	-10.87	0-360	300	H
7	848.8075	57.19	Pk	26.9	3.3	87.39	**46.02**	**41.37**	0-360	400	H
2	49.306	4.91	Pk	20.1	.8	25.81	40	-14.19	0-360	200	V
4	100.952	4.54	Pk	17.5	1.2	23.24	43.52	-20.28	0-360	200	V
6	767.45	6.85	Pk	26.5	3.1	36.45	46.02	-9.57	0-360	400	V
8	848.8075	53.79	Pk	26.9	3.3	83.99	**46.02**	**37.97**	0-360	200	V

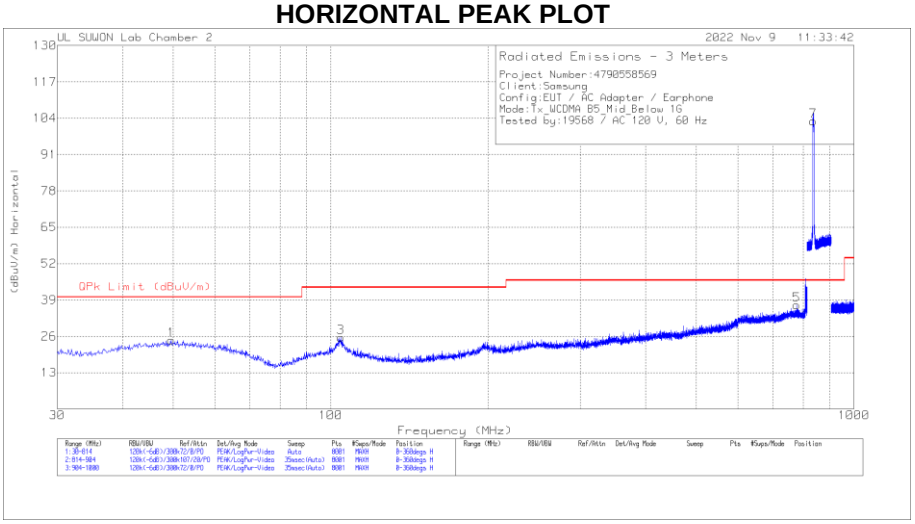
Pk - Peak detector

Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

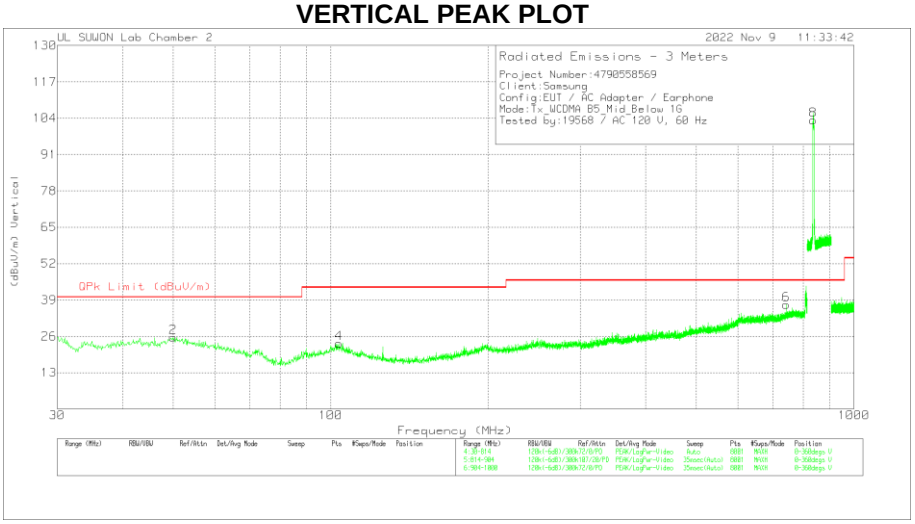
7.1.7. Below 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	49.6	3.71	Pk	20.1	.8	24.61	40	-15.39	0-360	200	H
3	104.48	6.85	Pk	17.6	1.2	25.65	43.52	-17.87	0-360	100	H
5	777.838	7.74	Pk	26.3	3.2	37.24	46.02	-8.78	0-360	100	H
7	836.5563	72.96	Pk	26.6	3.3	102.86	**46.02**	**56.84**	0-360	100	H
2	49.992	4.75	Pk	20.1	.8	25.65	40	-14.35	0-360	200	V
4	103.598	4.69	Pk	17.6	1.2	23.49	43.52	-20.03	0-360	200	V
6	742.166	8	Pk	26.2	3.1	37.3	46.02	-8.72	0-360	300	V
8	836.5563	73.31	Pk	26.6	3.3	103.21	**46.02**	**57.19**	0-360	100	V

Pk - Peak detector

Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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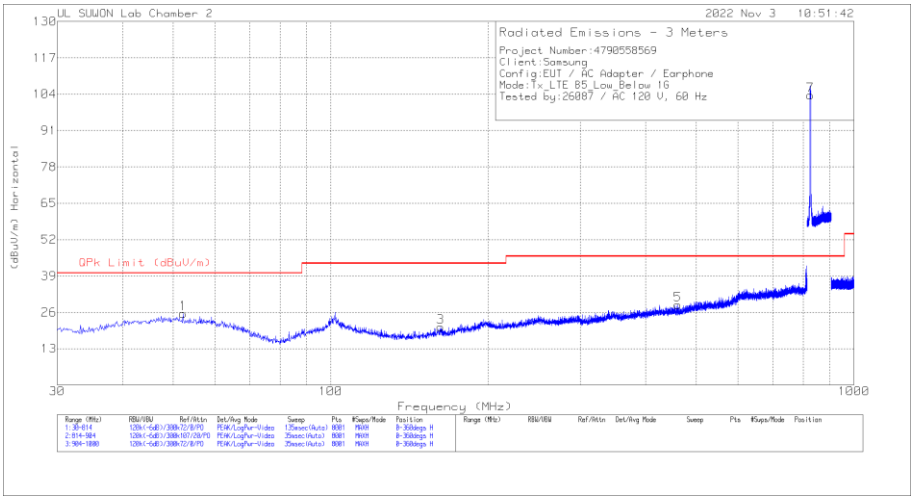
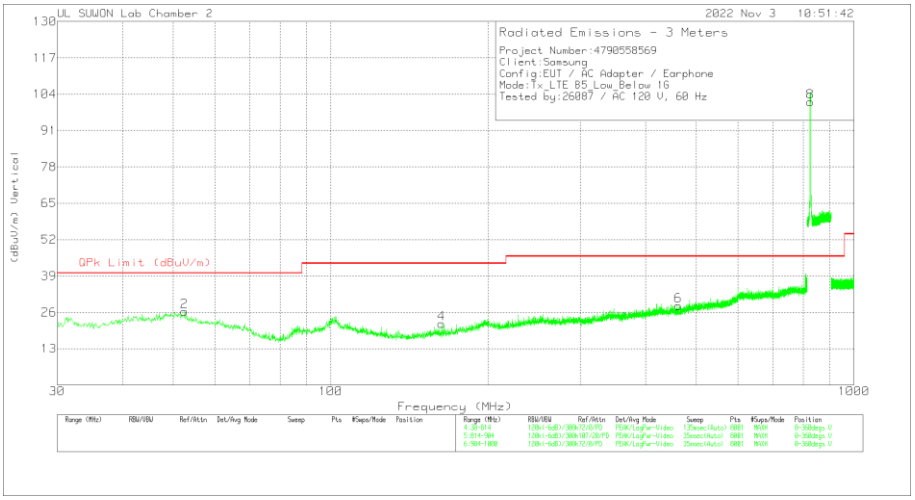
7.1.8. Below 1 GHz in the LTE Band 5

LOW CHANNEL(874.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

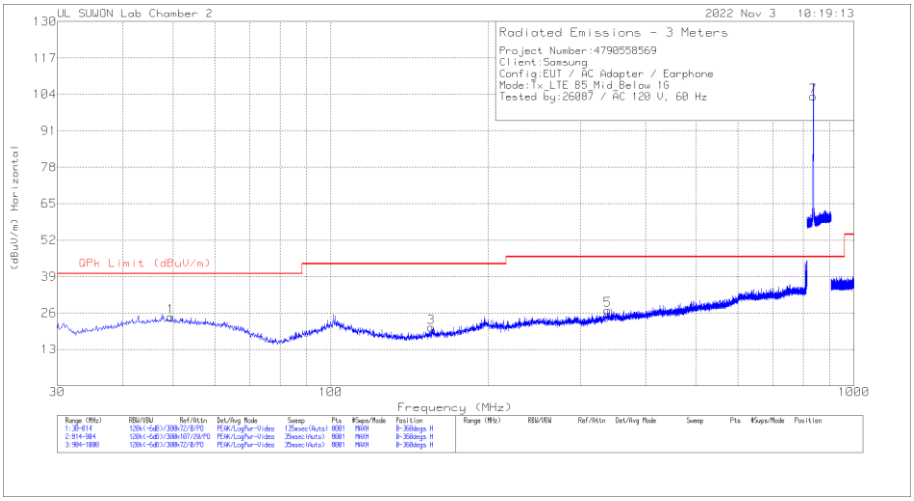
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	52.246	4.87	Pk	19.9	.8	25.57	40	-14.43	0-360	100	H
3	162.3	4.86	Pk	14.4	1.5	20.76	43.52	-22.76	0-360	100	H
5	460.514	4.44	Pk	21.8	2.4	28.64	46.02	-17.38	0-360	100	H
7	825.5088	73.81	Pk	26.5	3.3	103.61	**46.02**	**57.59**	0-360	200	H
2	52.54	5.68	Pk	19.8	.8	26.28	40	-13.72	0-360	100	V
4	162.79	5.96	Pk	14.5	1.5	21.96	43.52	-21.56	0-360	100	V
6	461.298	4.14	Pk	21.8	2.4	28.34	46.02	-17.68	0-360	100	V
8	825.5088	71.43	Pk	26.5	3.3	101.23	**46.02**	**55.21**	0-360	100	V

Pk - Peak detector

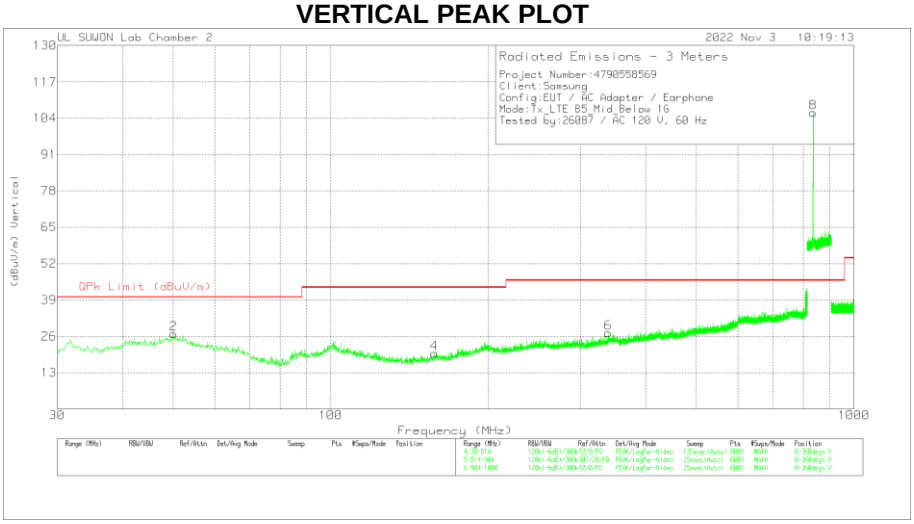
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	49.502	3.66	Pk	20.1	.8	24.56	40	-15.44	0-360	300	H
3	155.44	5.3	Pk	14.2	1.4	20.9	43.52	-22.62	0-360	100	H
5	338.406	4.79	Pk	20.2	2.1	27.09	46.02	-18.93	0-360	300	H
7	836.5788	73.35	Pk	26.6	3.3	103.25	**46.02**	**57.23**	0-360	300	H
2	50.09	5.95	Pk	20.1	.8	26.85	40	-13.15	0-360	300	V
4	157.792	4.25	Pk	14.3	1.4	19.95	43.52	-23.57	0-360	300	V
6	339.092	4.87	Pk	20.2	2.1	27.17	46.02	-18.85	0-360	300	V
8	836.5788	76.13	Pk	26.6	3.3	106.03	**46.02**	**60.01**	0-360	100	V

Pk - Peak detector\

Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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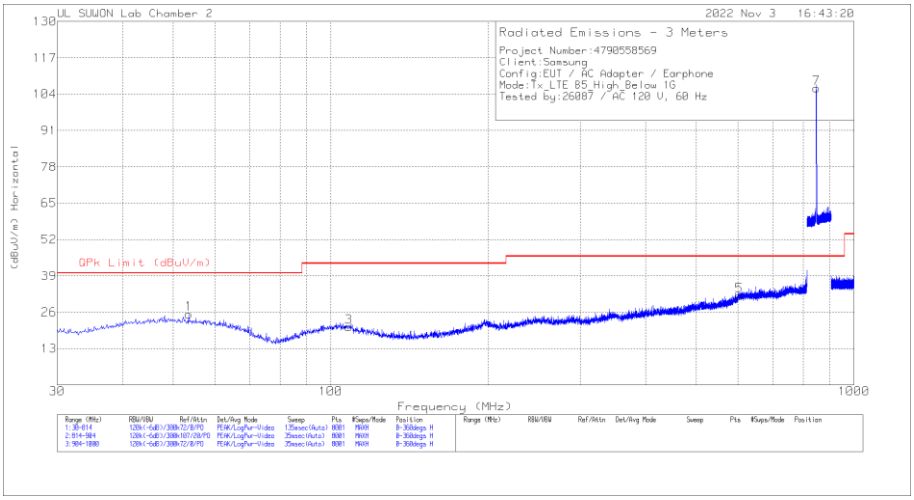
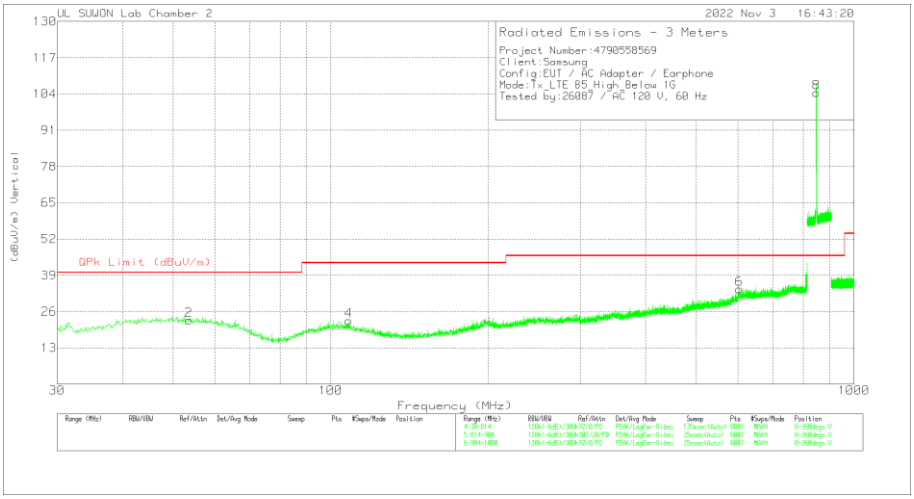
HIGH CHANNEL(889.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	53.52	4.9	Pk	19.7	.8	25.4	40	-14.6	0-360	300	H
3	108.302	1.97	Pk	17.5	1.2	20.67	43.52	-22.85	0-360	200	H
5	603.692	4.28	Pk	24.9	2.8	31.98	46.02	-14.04	0-360	200	H
7	847.5363	75.89	Pk	26.9	3.3	106.09	**46.02**	**60.07**	0-360	300	H
2	53.52	2.51	Pk	19.7	.8	23.01	40	-16.99	0-360	300	V
4	108.204	4.01	Pk	17.5	1.2	22.71	43.52	-20.81	0-360	400	V
6	603.692	6.46	Pk	24.9	2.8	34.16	46.02	-11.86	0-360	400	V
8	847.525	74.33	Pk	26.9	3.3	104.53	**46.02**	**58.51**	0-360	100	V

Pk - Peak detector

Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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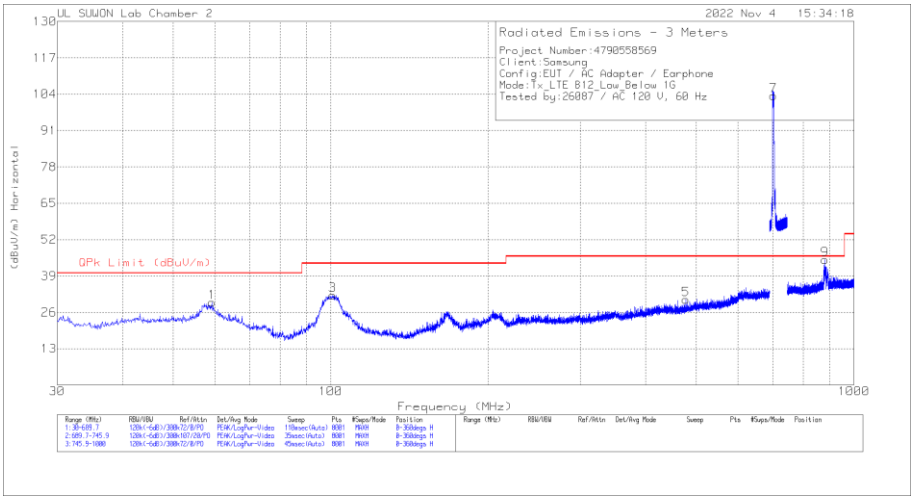
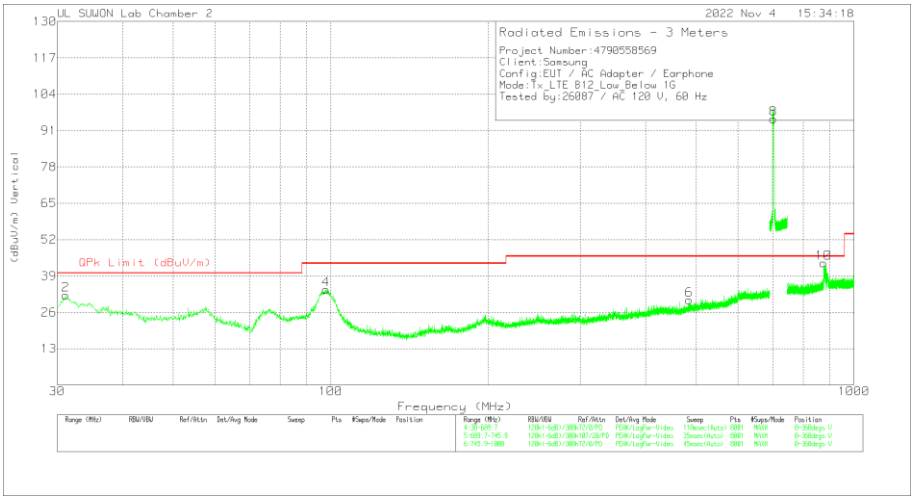
7.1.9. Below 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	59.2744	9.84	Pk	18.8	.9	29.54	40	-10.46	0-360	300	H
3	100.9182	13.36	Pk	17.5	1.2	32.06	43.52	-11.46	0-360	200	H
5	477.1968	5.74	Pk	22.3	2.5	30.54	46.02	-15.48	0-360	100	H
7	701.502	75.1	Pk	25.3	3	103.4	**46.02**	**57.38**	0-360	200	H
9	881.0198	14.08	Pk	27.4	3.4	44.88	46.02	-1.14	0-360	100	H
2	31.1545	15.98	Pk	15.6	.6	32.18	40	-7.82	0-360	200	V
4	97.9495	15.9	Pk	17.2	1.1	34.2	43.52	-9.32	0-360	200	V
6	483.8764	5.27	Pk	22.6	2.5	30.37	46.02	-15.65	0-360	300	V
8	701.502	66.89	Pk	25.3	3	95.19	**46.02**	**49.17**	0-360	100	V
10	874.9531	12.85	Pk	27.4	3.4	43.65	46.02	-2.37	0-360	300	V

Pk - Peak detector

Radiated Emissions

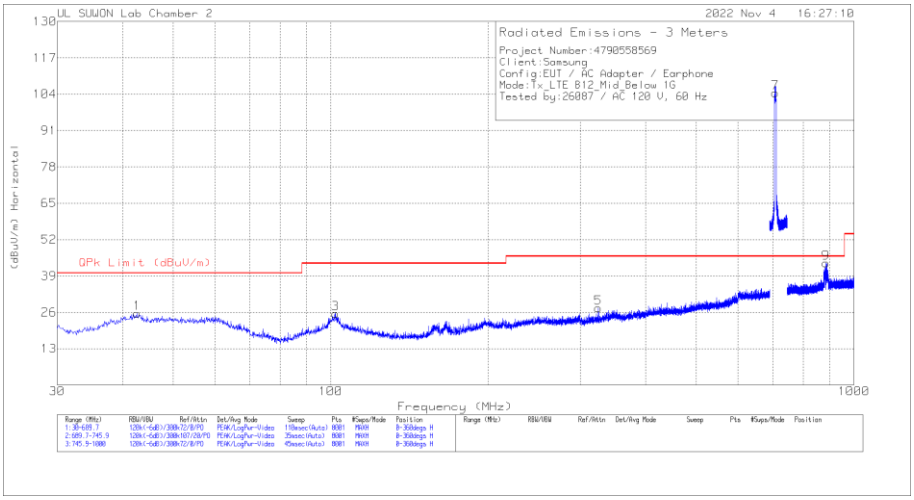
Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
881.0198	6.3	Qp	27.4	3.4	37.1	46.02	-8.92	212	323	H
874.9531	4.94	Qp	27.4	3.4	35.74	46.02	-10.28	179	331	V

Qp - Quasi-Peak detector

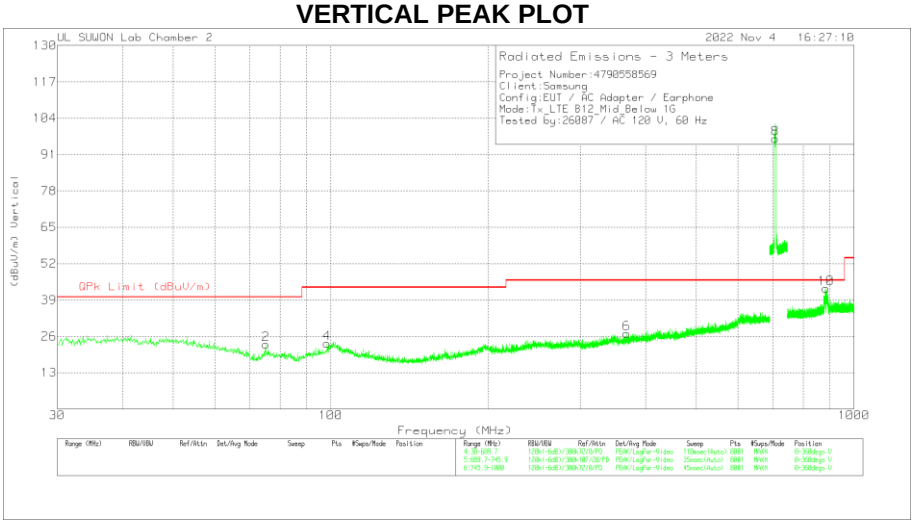
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	42.6168	5.52	Pk	19.4	.8	25.72	40	-14.28	0-360	200	H
3	102.1551	6.75	Pk	17.6	1.2	25.55	43.52	-17.97	0-360	200	H
5	324.8877	5.78	Pk	19.7	2.1	27.58	46.02	-18.44	0-360	300	H
7	707.5014	76.26	Pk	25.2	3	104.46	**46.02**	**58.44**	0-360	200	H
9	884.9902	12.87	Pk	27.4	3.4	43.67	46.02	-2.35	0-360	100	H
2	75.1073	8.45	Pk	13.6	1	23.05	40	-16.95	0-360	200	V
4	98.4443	5.2	Pk	17.2	1.1	23.5	43.52	-20.02	0-360	200	V
6	367.5211	4.56	Pk	20.3	2.2	27.06	46.02	-18.96	0-360	300	V
8	707.5014	68.48	Pk	25.2	3	96.68	**46.02**	**50.66**	0-360	100	V
10	884.9902	12.33	Pk	27.4	3.4	43.13	46.02	-2.89	0-360	200	V

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
884.9902	4.14	Qp	27.4	3.4	34.94	46.02	-11.08	281	181	H
884.9902	5.9	Qp	27.4	3.4	36.7	46.02	-9.32	18	367	V

Qp - Quasi-Peak detector

Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

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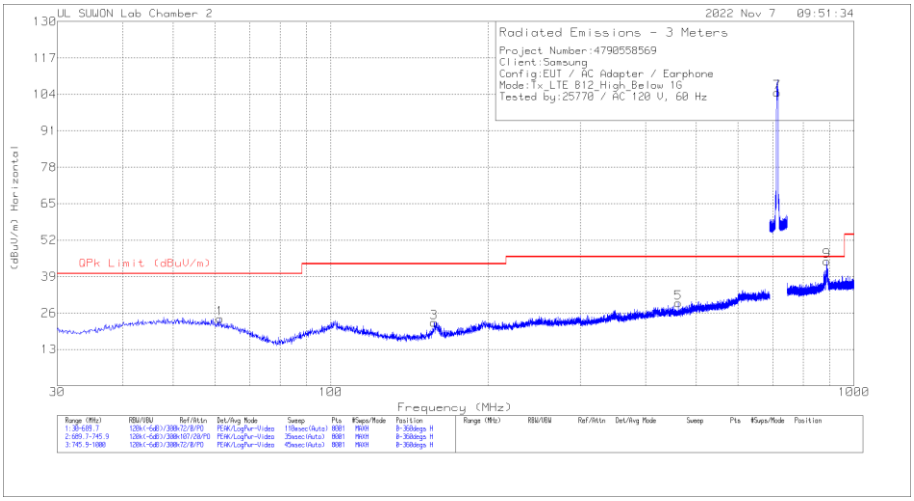
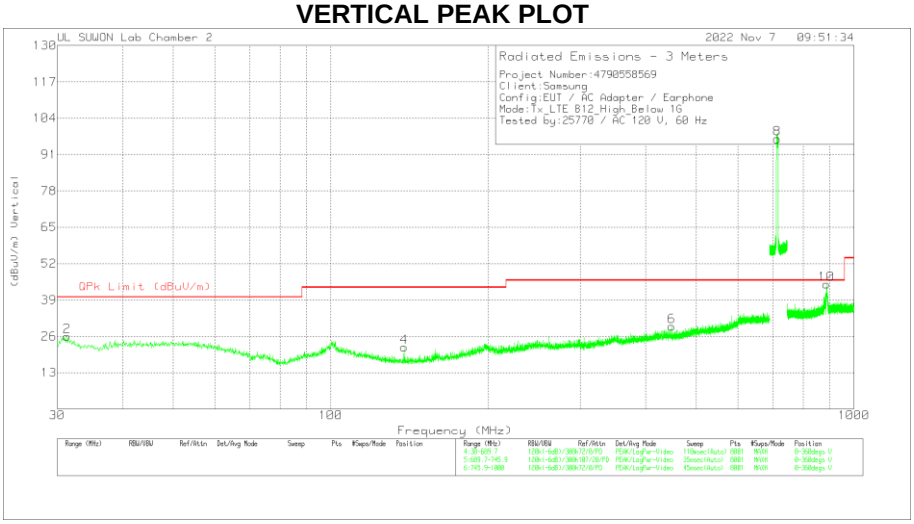
HIGH CHANNEL(744.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	61.4184	4.8	Pk	18.3	.9	24	40	-16	0-360	300	H
3	157.6527	6.93	Pk	14.3	1.4	22.63	43.52	-20.89	0-360	100	H
5	461.6938	5.38	Pk	21.8	2.4	29.58	46.02	-16.44	0-360	300	H
7	713.5007	76.42	Pk	25.2	3	104.62	**46.02**	**58.6**	0-360	200	H
9	888.0077	13.53	Pk	27.5	3.4	44.43	46.02	-1.59	0-360	300	H
2	31.3194	9.85	Pk	15.6	.6	26.05	40	-13.95	0-360	200	V
4	138.0265	6.69	Pk	14	1.4	22.09	43.52	-21.43	0-360	300	V
6	448.1699	5.2	Pk	21.9	2.4	29.5	46.02	-16.52	0-360	400	V
8	713.5007	68.38	Pk	25.2	3	96.58	**46.02**	**50.56**	0-360	100	V
10	886.483	13.77	Pk	27.4	3.4	44.57	46.02	-1.45	0-360	400	V

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
888.0077	10.06	Qp	27.5	3.4	40.96	46.02	-5.06	146	268	H
886.483	6.1	Qp	27.4	3.4	36.9	46.02	-9.12	231	128	V

Qp - Quasi-Peak detector

Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

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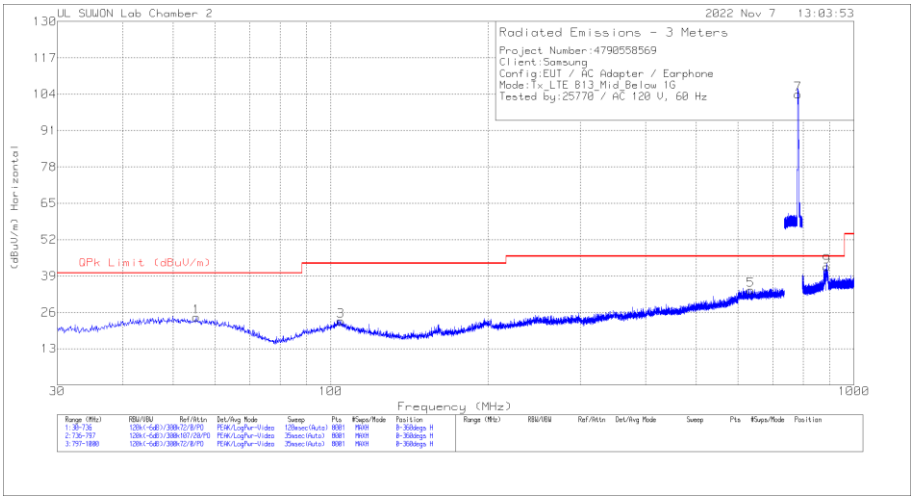
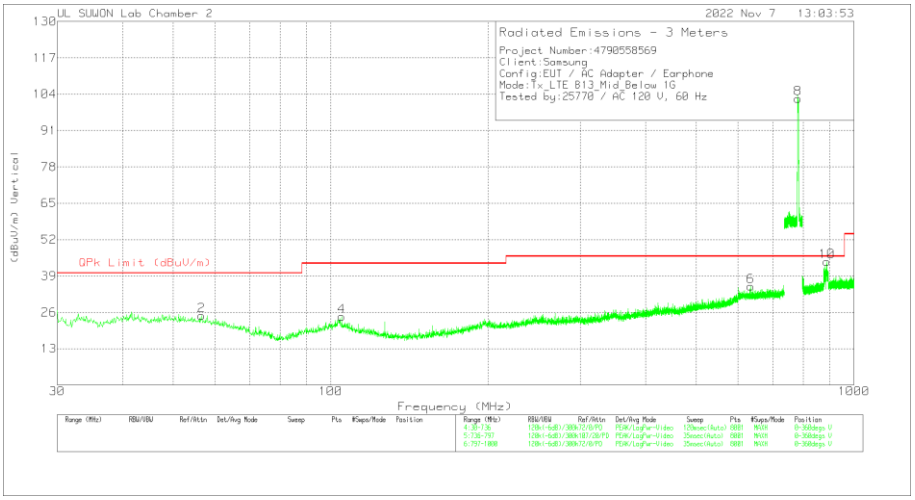
7.1.10.Below 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	55.3278	3.95	Pk	19.5	.9	24.35	40	-15.65	0-360	300	H
3	104.3948	4.22	Pk	17.6	1.2	23.02	43.52	-20.5	0-360	100	H
5	634.6008	6.3	Pk	24.8	2.9	34	46.02	-12.02	0-360	300	H
7	782.1465	74.44	Pk	26.3	3.2	103.94	**46.02**	**57.92**	0-360	200	H
9	887.944	11.41	Pk	27.5	3.4	42.31	46.02	-3.71	0-360	300	H
2	56.6515	4.55	Pk	19.3	.9	24.75	40	-15.25	0-360	300	V
4	104.9243	5.72	Pk	17.6	1.2	24.52	43.52	-19	0-360	200	V
6	634.336	7.64	Pk	24.8	2.9	35.34	46.02	-10.68	0-360	300	V
8	782.1389	72.97	Pk	26.3	3.2	102.47	**46.02**	**56.45**	0-360	100	V
10	888.0455	13.18	Pk	27.5	3.4	44.08	46.02	-1.94	0-360	400	V

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
887.944	7.88	Qp	27.5	3.4	38.78	46.02	-7.24	106	237	H
888.0455	9.16	Qp	27.5	3.4	40.06	46.02	-5.96	5	385	V

Qp - Quasi-Peak detector

Note: Unwanted emissions captured from 777MHz to 787MHz and from 746MHz to 756MHz were the TX and RX signals generated from the call-simulator.

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7.2. CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4-2014

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

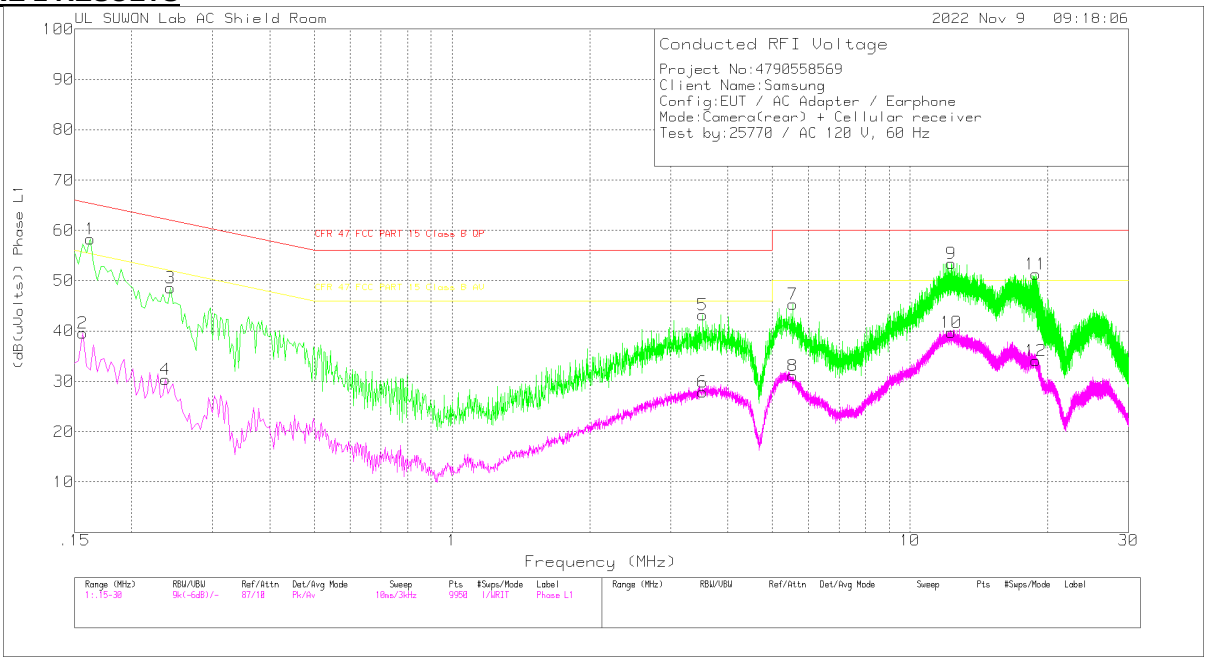
Frequency range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

7.2.1 CONDUCTED EMISSIONS

6 WORST EMISSIONS(GSM850 + Rear camera on)

Line-L1 .15 – 30 MHz

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	48.25	Pk	9.9	.1	58.25	65.36	-7.11	-	-
2	.156	29.72	Av	9.8	.1	39.62	-	-	55.67	-16.05
3	.243	38.75	Pk	9.6	.2	48.55	61.99	-13.44	-	-
4	.237	20.47	Av	9.7	.2	30.37	-	-	52.2	-21.83
5	3.525	33.25	Pk	9.7	.3	43.25	56	-12.75	-	-
6	3.525	17.87	Av	9.7	.3	27.87	-	-	46	-18.13
7	5.547	35.34	Pk	9.7	.3	45.34	60	-14.66	-	-
8	5.547	21.12	Av	9.7	.3	31.12	-	-	50	-18.88
9	12.324	43.23	Pk	9.9	.3	53.43	60	-6.57	-	-
10	12.324	29.57	Av	9.9	.3	39.77	-	-	50	-10.23
11	18.801	40.75	Pk	10.1	.4	51.25	60	-8.75	-	-
12	18.801	23.66	Av	10.1	.4	34.16	-	-	50	-15.84

Pk - Peak detector
Av - Average detection

Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

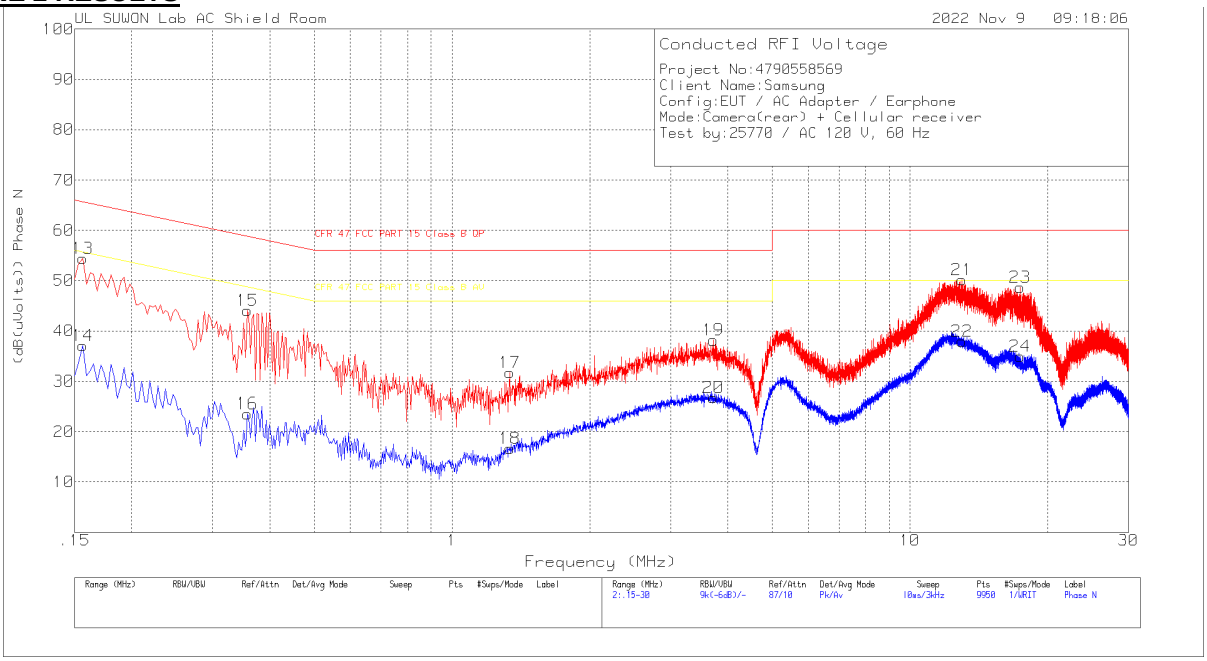
Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.16275	32.04	Qp	9.9	.1	42.04	65.32	-23.28	-	-
12.3242	33.98	Qp	9.9	.3	44.18	60	-15.82	-	-
18.8012	23.93	Qp	10.1	.4	34.43	60	-25.57	-	-

Qp - Quasi-Peak detector

6 WORST EMISSIONS(GSM850 + Rear camera on)

Line-L2 .15 – 30 MHz

LINE 2 RESULTS



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[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)
13	.156	44.51	Pk	9.8	.1	54.41	65.67	-11.26	-	-
14	.156	27.14	Av	9.8	.1	37.04	-	-	55.67	-18.63
15	.357	34.1	Pk	9.8	.2	44.1	58.8	-14.7	-	-
16	.357	13.57	Av	9.8	.2	23.57	-	-	48.8	-25.23
17	1.338	21.78	Pk	9.7	.3	31.78	56	-24.22	-	-
18	1.338	6.61	Av	9.7	.3	16.61	-	-	46	-29.39
19	3.717	28.16	Pk	9.7	.3	38.16	56	-17.84	-	-
20	3.717	16.73	Av	9.7	.3	26.73	-	-	46	-19.27
21	12.99	39.83	Pk	10	.4	50.23	60	-9.77	-	-
22	12.99	27.53	Av	10	.4	37.93	-	-	50	-12.07
23	17.412	38.1	Pk	10.2	.4	48.7	60	-11.3	-	-
24	17.412	24.34	Av	10.2	.4	34.94	-	-	50	-15.06

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]	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)
12.9893	31.34	Qp	10	.4	41.74	60	-18.26	-	-

Qp - Quasi-Peak detector

END OF TEST REPORT