



CERTIFICATION TEST REPORT

Report Number. : 4790406778-E1V4

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

Model : SM-A236B/DSN

FCC ID : A3LSMA236BN

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:
2022-07-12

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ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-06-24	Initial issue	Yeonhee Lim
V2	2022-07-06	Updated to address TCB's question	Yeonhee Lim
V3	2022-07-11	Updated to address TCB's question	Yeonhee Lim
V4	2022-07-12	Updated to address TCB's question	Yeonhee Lim

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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-A236B/DSN

SERIAL NUMBER: R3CT506PDAY (RADIATED)

DATE TESTED: 2022-06-15 ~ 2022-06-20;

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

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 115:2007.

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	Rx Frequency range (MHz)	Description
GSM850	869.2 – 893.8	Communicating with Call simulator(CMW500)
WCDMA BAND 5	869 – 894	Communicating with Call simulator(CMW500)
LTE BAND 12	729 – 746	Communicating with Call simulator(CMW500)
LTE BAND 26	859 – 894	Communicating with Call simulator(CMW500)

5.3. WORST-CASE ORIENTATION AND MODE

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X and Y, 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 B12	-	-	O
LTE B26	-	-	O

WCDMA Band5

WCDMA Band 5(Rx Frequency 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 WCDMA Band5. Therefore, only Mid channel was checked.

LTE Band 5

LTE Band 5(Rx Frequency range: 869-894 MHz) is covered by LTE Band 26(Rx Frequency range: 859-894 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 17

LTE Band 17(Rx Frequency range: 734-746 MHz) is covered by LTE Band 12(Rx Frequency range: 729-746 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

5G NR Band n5

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

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

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacture	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

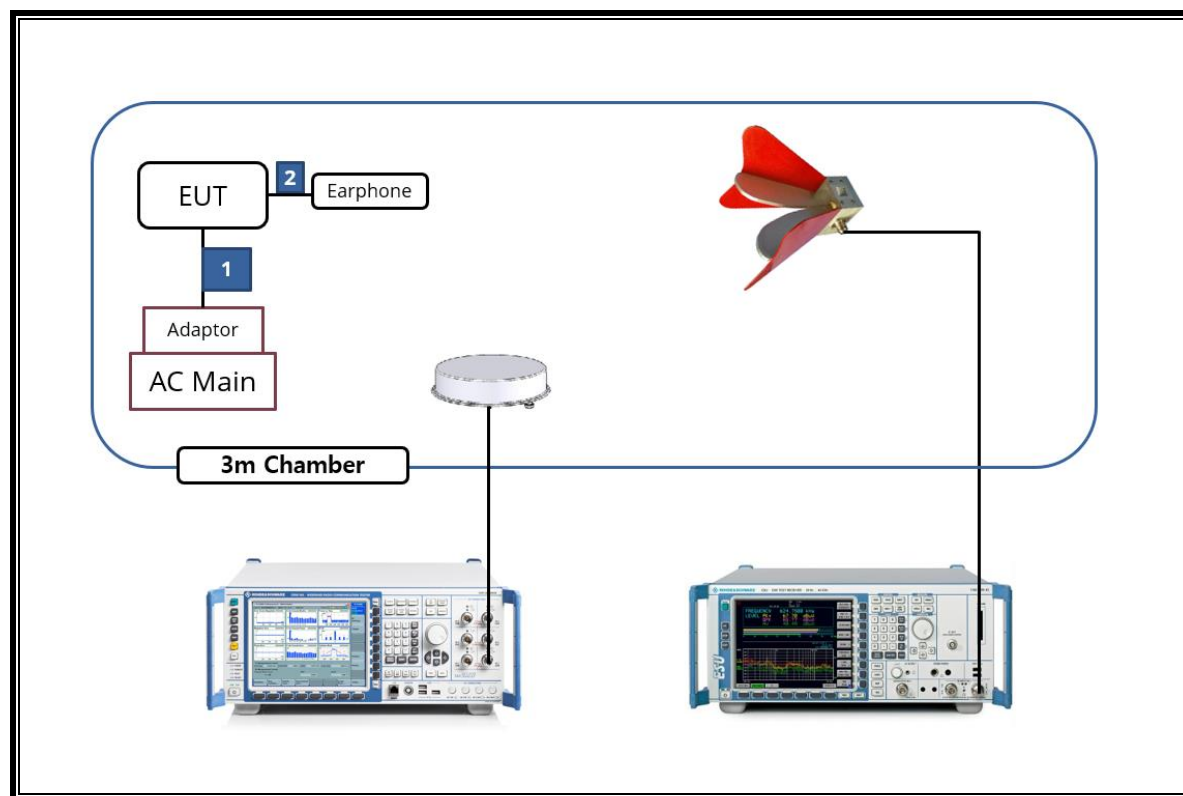
I/O CABLE

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 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
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	110367-0003	N/A
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	80108-0004	N/A
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2022-08-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2022-08-13
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	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
Communications Test Set	R&S	CMW500	169796	2023-01-07
DC Power Supply	Agilent / HP	E3640A	MY54226395	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	341282	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	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	2029168	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	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
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022-08-02
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	2022-08-03
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	2022-08-02
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	2022-08-03
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	2022-08-02
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	2022-08-03
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	2022-08-02
Attenuator	PASTERNAK	PE7087-10	A009	2022-08-03
Attenuator	PASTERNAK	PE7087-10	A001	2022-08-03
Attenuator	PASTERNAK	PE7087-10	A008	2022-08-03
Attenuator	PASTERNAK	PE7004-10	2	2022-08-02
Attenuator	PASTERNAK	PE7395-10	A011	2022-08-03
Temperature Chamber	ESPEC	SH-642	93001109	2022-08-02
Power Splitter	MINI-CIRCUITS	WA1534	UL003	2023-01-11
Power Splitter	MINI-CIRCUITS	WA1534	UL004	2023-01-11
UL Software				
Description	Manufacturer	Model	Version	
Antenna port test software	UL	CLT	Ver 3.4	
Radiated software	UL	UL EMC	Ver 9.5	

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4-2014

LIMIT

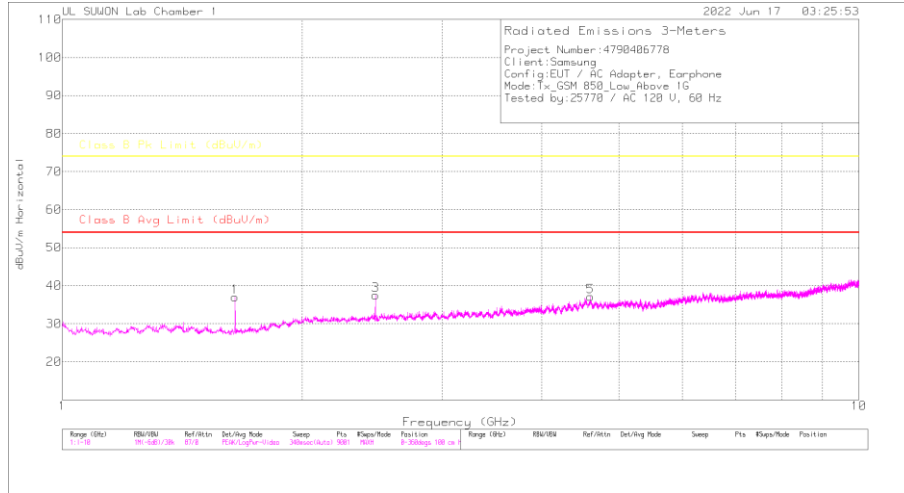
§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

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.	

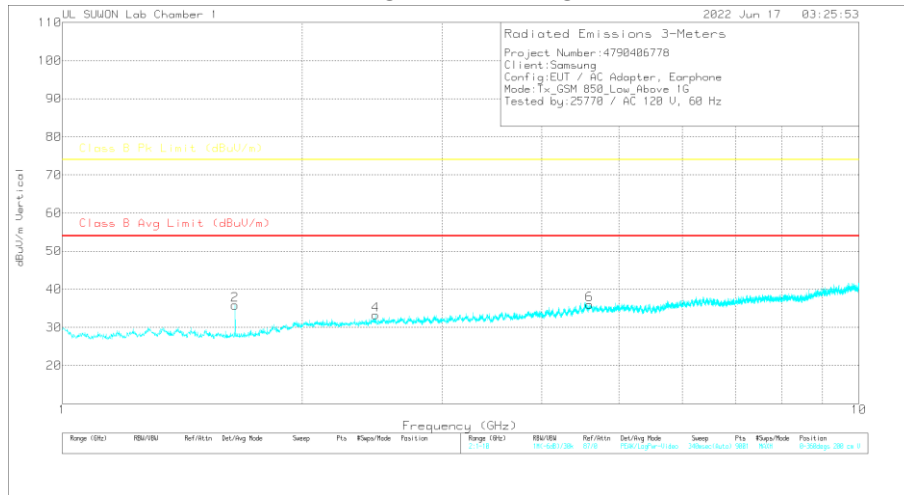
7.1.1. Above 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT

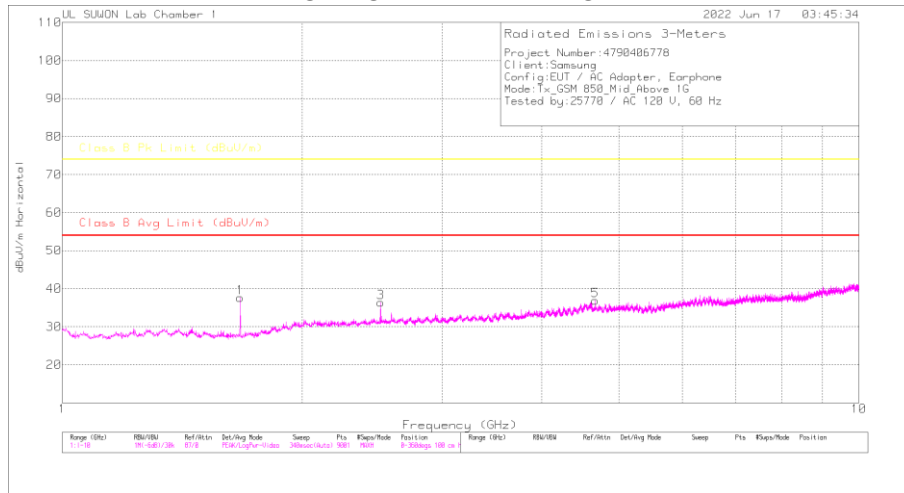
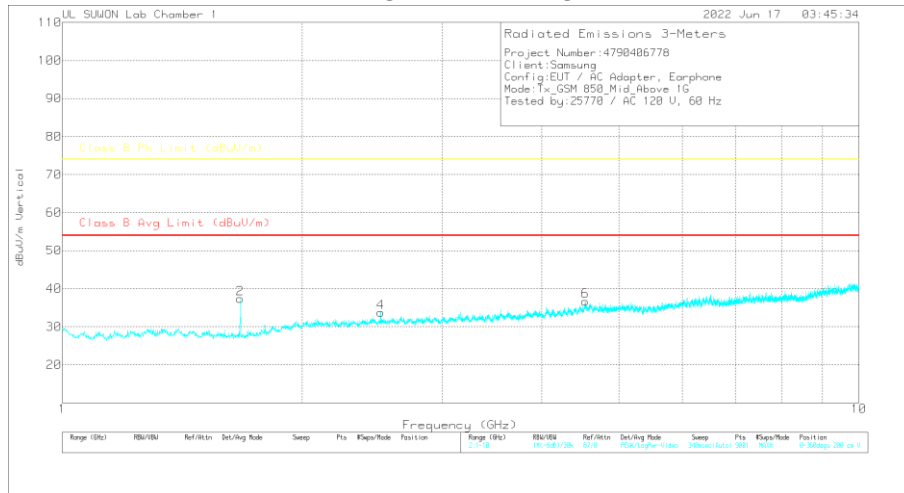


DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Marg in (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.648	45.21	Pk	28.4	-36.4	.7	37.91	-	-	74	-36.09	0	100	H
1.648	31.6	Ca	28.4	-36.4	.7	24.3	54	-29.7	-	-	0	100	H
1.648	42.55	Pk	28.4	-36.4	.7	35.25	-	-	74	-38.75	0	100	V
1.648	30.96	Ca	28.4	-36.4	.7	23.66	54	-30.34	-	-	0	100	V
4.472	41.41	Pk	31.9	-34.8	.7	39.21	-	-	74	-34.79	0	100	H
2.472	29.17	Ca	31.9	-34.8	.7	26.97	54	-27.03	-	-	0	100	H
2.472	42.57	Pk	31.9	-34.8	.7	40.37	-	-	74	-33.63	0	100	V
2.472	29.14	Ca	31.9	-34.8	.7	26.94	54	-27.06	-	-	0	100	V
4.604	39.48	Pk	34.2	-31.9	.5	42.28	-	-	74	-31.72	0	100	H
4.604	27.95	Ca	34.2	-31.9	.5	30.75	54	-23.25	-	-	0	100	H
4.588	39.83	Pk	34.2	-31.9	.6	42.73	-	-	74	-31.27	0	100	V
4.588	27.46	Ca	34.2	-31.9	.6	30.36	54	-23.64	-	-	0	100	V

Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(881.6 MHz)**HORIZONTAL PEAK PLOT****VERTICAL PEAK PLOT****DATA****Radiated Emissions**

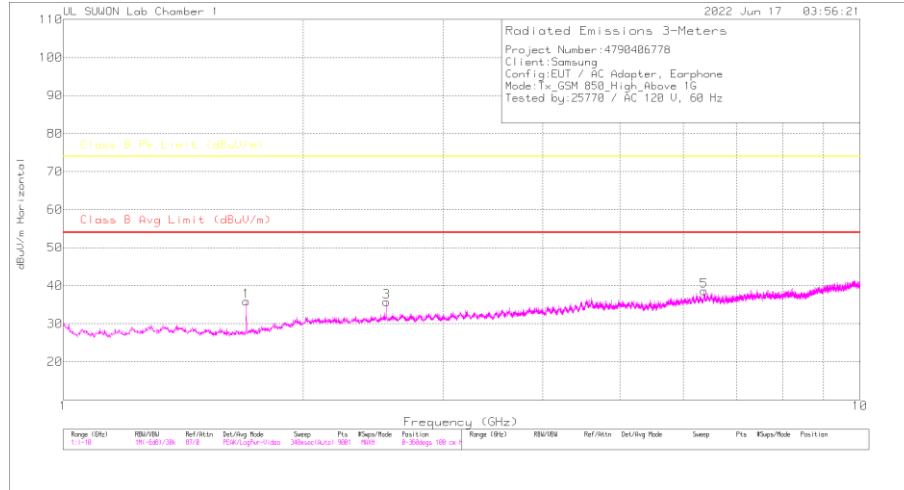
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.673	47.34	Pk	28.5	-36.4	.7	40.14	-	-	74	-33.86	0	100	H
1.673	32.48	Ca	28.5	-36.4	.7	25.28	54	-28.72	-	-	0	100	H
1.673	44.27	Pk	28.5	-36.4	.7	37.07	-	-	74	-36.93	0	100	V
1.673	31.08	Ca	28.5	-36.4	.7	23.88	54	-30.12	-	-	0	100	V
2.51	41.46	Pk	32	-34.7	.7	39.46	-	-	74	-34.54	0	100	H
2.51	29.26	Ca	32	-34.7	.7	27.26	54	-26.74	-	-	0	100	H
2.5095	41.7	Pk	32	-34.7	.7	39.7	-	-	74	-34.3	0	100	V
2.5095	29.47	Ca	32	-34.7	.7	27.47	54	-26.53	-	-	0	100	V
4.666	40.61	Pk	34.2	-31.9	.5	43.41	-	-	74	-30.59	0	100	H
4.666	28.3	Ca	34.2	-31.9	.5	31.1	54	-22.9	-	-	0	100	H
4.536	40.3	Pk	34.2	-32	.7	43.2	-	-	74	-30.8	0	100	V
4.536	28.2	Ca	34.2	-32	.7	31.1	54	-22.9	-	-	0	100	V

Pk - Peak detector

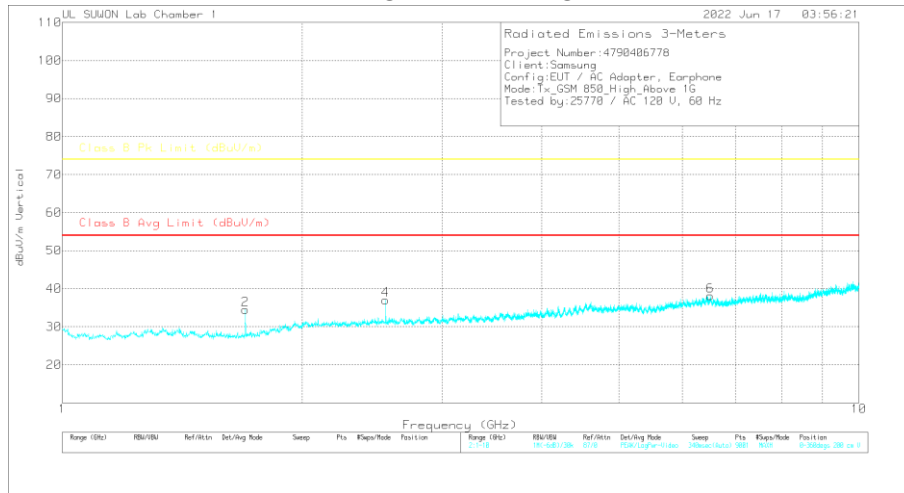
Ca - CISPR average detection

HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

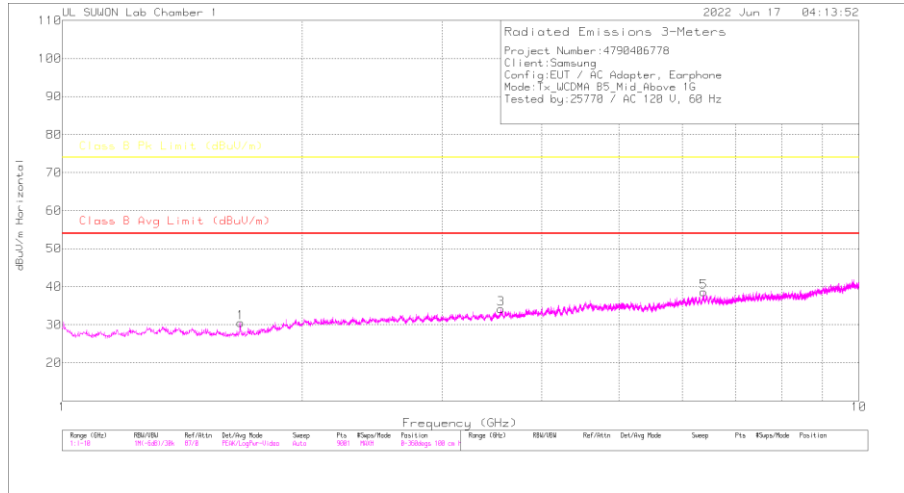
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.697	44.82	Pk	28.6	-36.3	.6	37.72	-	-	74	-36.28	0	100	H
1.697	30.91	Ca	28.6	-36.3	.6	23.81	54	-30.19	-	-	0	100	H
1.697	42.08	Pk	28.6	-36.3	.6	34.98	-	-	74	-39.02	0	100	V
1.697	30.45	Ca	28.6	-36.3	.6	23.35	54	-30.65	-	-	0	100	V
2.546	41.36	Pk	32	-34.6	.7	39.46	-	-	74	-34.54	0	100	H
2.546	29.05	Ca	32	-34.6	.7	27.15	54	-26.85	-	-	0	100	H
2.546	42.74	Pk	32	-34.6	.7	40.84	-	-	74	-33.16	0	100	V
2.546	29.27	Ca	32	-34.6	.7	27.37	54	-26.63	-	-	0	100	V
6.373	39.02	Pk	35.5	-29.7	.5	45.32	-	-	74	-28.68	0	100	H
6.373	26.49	Ca	35.5	-29.7	.5	32.79	54	-21.21	-	-	0	100	H
6.51	38.39	Pk	35.4	-29.2	.6	45.19	-	-	74	-28.81	0	100	V
6.51	26.3	Ca	35.4	-29.2	.6	33.1	54	-20.9	-	-	0	100	V

Pk - Peak detector
Ca - CISPR average detection

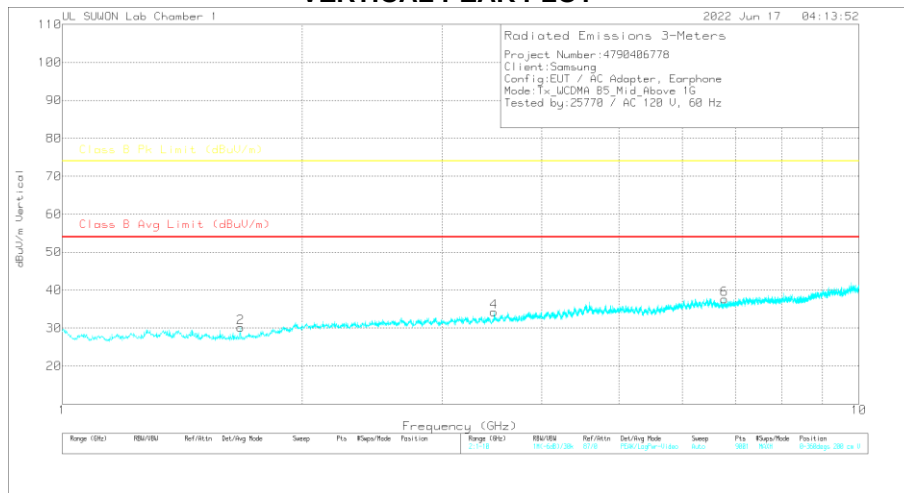
7.1.2. Above 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Marg in (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.674	43.74	Pk	28.5	-36.4	.7	36.54	-	-	74	-37.46	360	100	H
1.674	31.38	Ca	28.5	-36.4	.7	24.18	54	-29.82	-	-	360	100	H
1.674	42.34	Pk	28.5	-36.4	.7	35.14	-	-	74	-38.86	360	100	V
1.674	30.55	Ca	28.5	-36.4	.7	23.35	54	-30.65	-	-	360	100	V
3.555	40.22	Pk	33	-33.2	.6	40.62	-	-	74	-33.38	360	100	H
3.555	28.23	Ca	33	-33.2	.6	28.63	54	-25.37	-	-	360	100	H
3.484	40.77	Pk	32.8	-33.1	.5	40.97	-	-	74	-33.03	360	100	V
3.484	28.08	Ca	32.8	-33.1	.5	28.28	54	-25.72	-	-	360	100	V
6.38	38.49	Pk	35.5	-29.7	.5	44.79	-	-	74	-29.21	360	100	H
6.38	26.33	Ca	35.5	-29.7	.5	32.63	54	-21.37	-	-	360	100	H
6.781	37.4	Pk	35.5	-28.9	.4	44.4	-	-	74	-29.6	360	100	V
6.781	25.59	Ca	35.5	-28.9	.4	32.59	54	-21.41	-	-	360	100	V

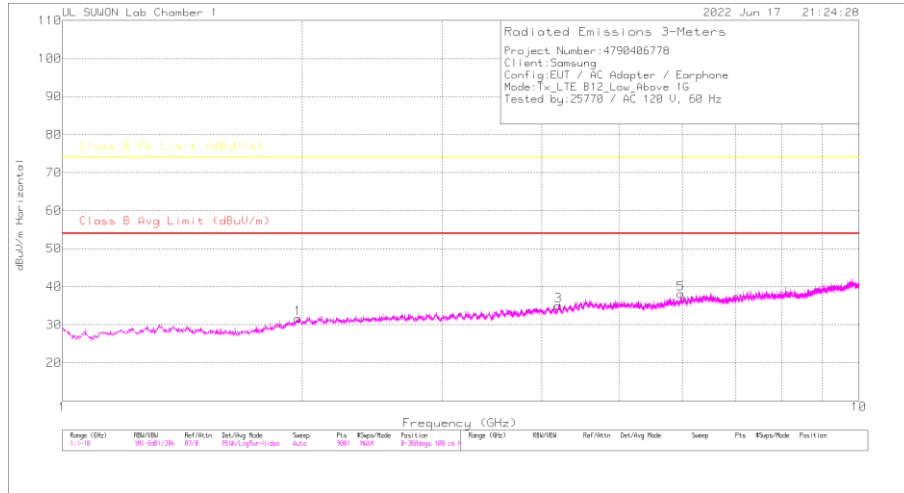
Pk - Peak detector

Ca - CISPR average detection

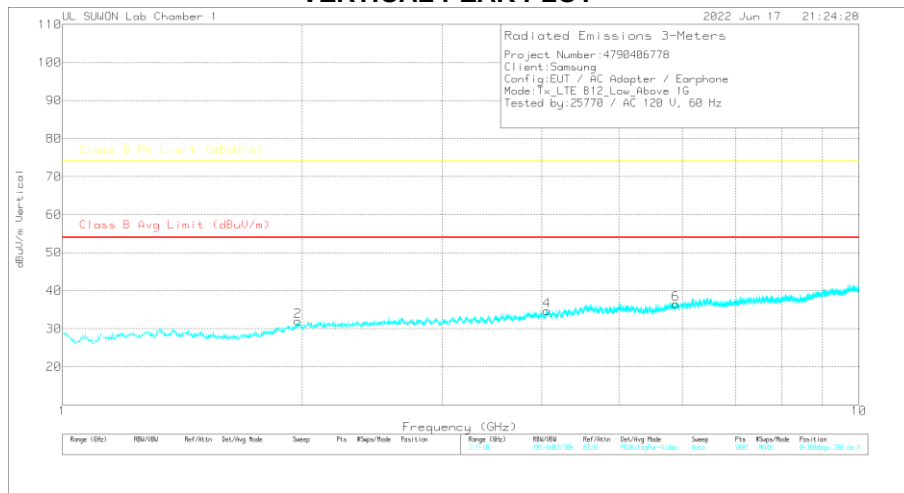
7.1.3. Above 1 GHz in the LTE Band 12

LOW CHANNEL(731.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

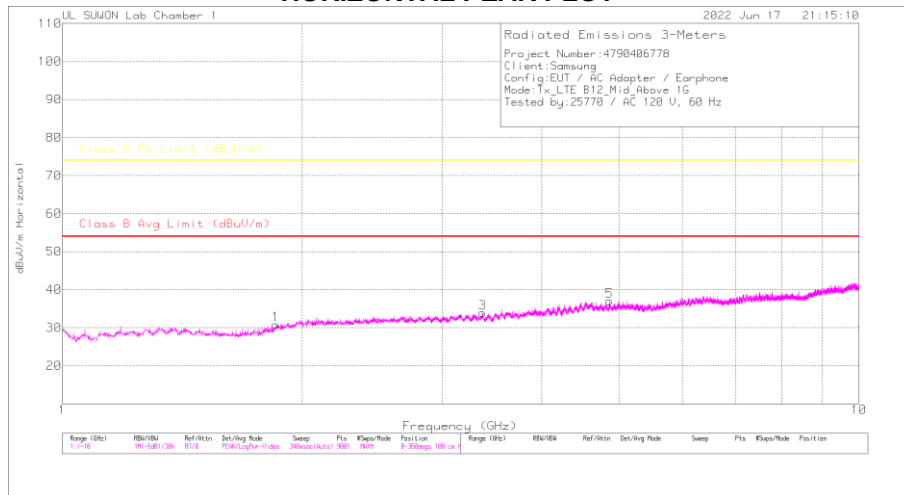
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av[CISPR] Marg in (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.977	42.1	Pk	31.3	-35.6	.6	38.4	-	-	74	-35.6	0	100	H
1.977	30.44	Ca	31.3	-35.6	.6	26.74	54	-27.26	-	-	0	100	H
1.977	42.27	Pk	31.3	-35.6	.6	38.57	-	-	74	-35.43	0	100	V
1.977	30.43	Ca	31.3	-35.6	.6	26.73	54	-27.27	-	-	0	100	V
4.194	40.01	Pk	33.6	-32.3	.5	41.81	-	-	74	-32.19	0	100	H
4.194	28.48	Ca	33.6	-32.3	.5	30.28	54	-23.72	-	-	0	100	H
4.061	40.75	Pk	33.5	-32.5	.6	42.35	-	-	74	-31.65	0	100	V
4.061	28.22	Ca	33.5	-32.5	.6	29.82	54	-24.18	-	-	0	100	V
5.975	39.05	Pk	35.2	-30.5	.7	44.45	-	-	74	-29.55	0	100	H
5.975	27.34	Ca	35.2	-30.5	.7	32.74	54	-21.26	-	-	0	100	H
5.89	39.44	Pk	35.1	-30.7	.5	44.34	-	-	74	-29.66	0	100	V
5.89	26.81	Ca	35.1	-30.7	.5	31.71	54	-22.29	-	-	0	100	V

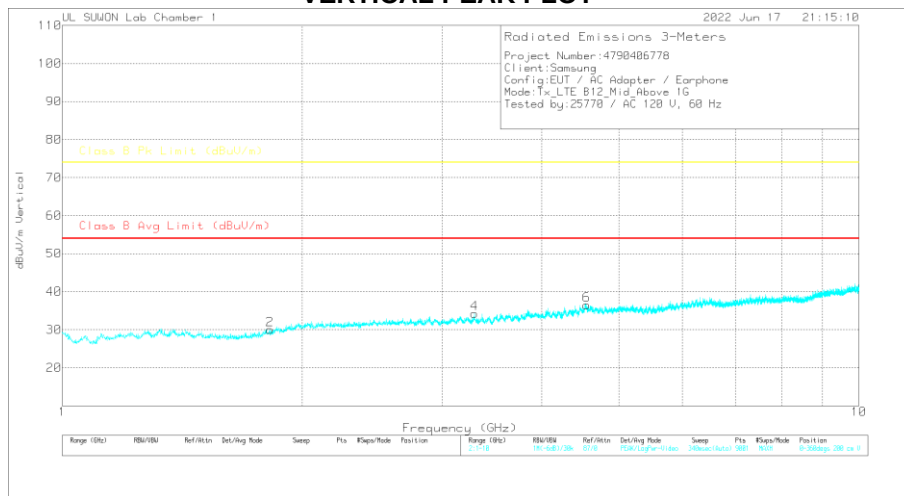
Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

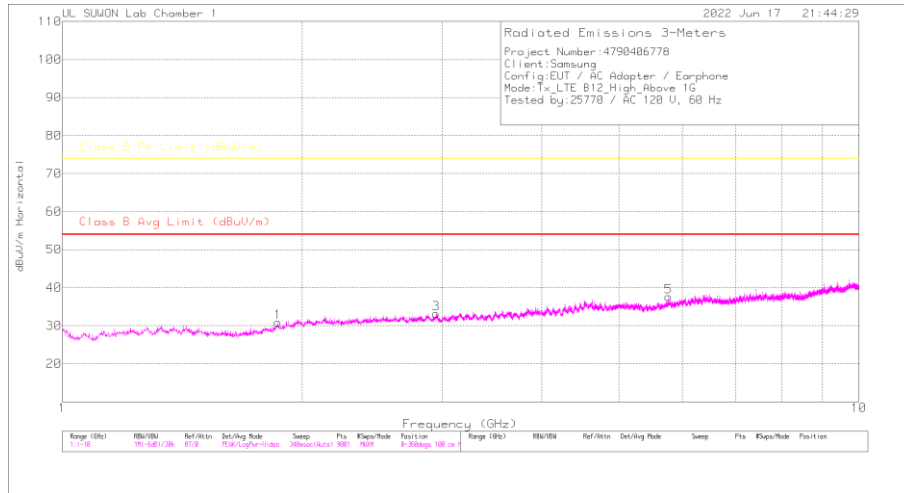
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.853	42.78	Pk	30.2	-36	.6	37.58	-	-	74	-36.42	0	100	H
1.853	30.77	Ca	30.2	-36	.6	25.57	54	-28.43	-	-	0	100	H
1.823	42.82	Pk	29.8	-36.1	.6	37.12	-	-	74	-36.88	0	100	V
1.823	30.47	Ca	29.8	-36.1	.6	24.77	54	-29.23	-	-	0	100	V
3.371	40.92	Pk	32.6	-33.6	.6	40.52	-	-	74	-33.48	0	100	H
3.371	28.67	Ca	32.6	-33.6	.6	28.27	54	-25.73	-	-	0	100	H
3.292	40.88	Pk	32.6	-33.7	.6	40.38	-	-	74	-33.62	0	100	V
3.292	29.04	Ca	32.6	-33.7	.6	28.54	54	-25.46	-	-	0	100	V
4.86	40.65	Pk	34.1	-31.8	.5	43.45	-	-	74	-30.55	0	100	H
4.86	28.77	Ca	34.1	-31.8	.5	31.57	54	-22.43	-	-	0	100	H
4.553	40.69	Pk	34.2	-32.1	.6	43.39	-	-	74	-30.61	0	100	V
4.553	28.32	Ca	34.2	-32.1	.6	31.02	54	-22.98	-	-	0	100	V

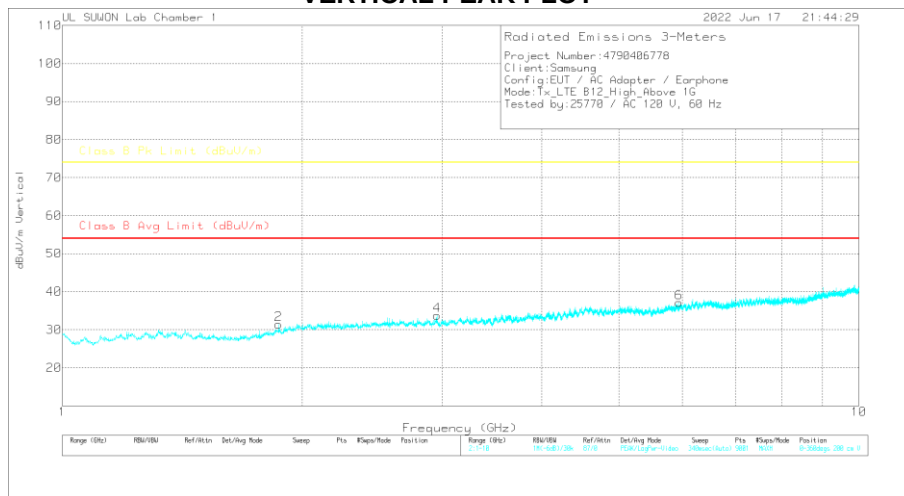
Pk - Peak detector
Ca - CISPR average detection

HIGH CHANNEL(743.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016871 7	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.865	43.65	Pk	30.3	-36	.6	38.55	-	-	74	-35.45	0	100	H
1.865	30.58	Ca	30.3	-36	.6	25.48	54	-28.52	-	-	0	100	H
1.869	42.95	Pk	30.4	-36	.6	37.95	-	-	74	-36.05	0	100	V
1.869	30.52	Ca	30.4	-36	.6	25.52	54	-28.48	-	-	0	100	V
2.947	41.11	Pk	32.3	-34	.6	40.01	-	-	74	-33.99	0	100	H
2.947	28.98	Ca	32.3	-34	.6	27.88	54	-26.12	-	-	0	100	H
2.955	41	Pk	32.3	-34.1	.6	39.8	-	-	74	-34.2	0	100	V
2.955	28.79	Ca	32.3	-34.1	.6	27.59	54	-26.41	-	-	0	100	V
5.767	38.46	Pk	35	-30.9	.6	43.16	-	-	74	-30.84	0	100	H
5.767	26.67	Ca	35	-30.9	.6	31.37	54	-22.63	-	-	0	100	H
5.949	39.08	Pk	35.2	-30.5	.6	44.38	-	-	74	-29.62	0	100	V
5.949	26.7	Ca	35.2	-30.5	.6	32	54	-22	-	-	0	100	V

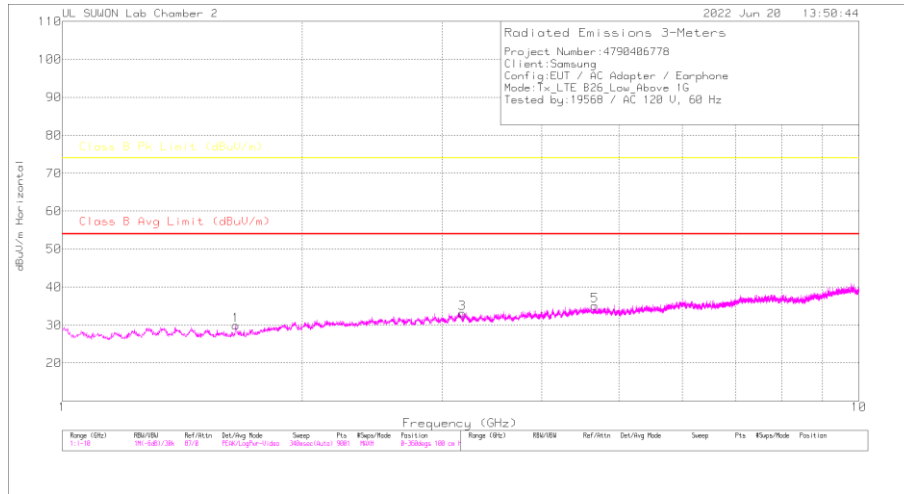
Pk - Peak detector

Ca - CISPR average detection

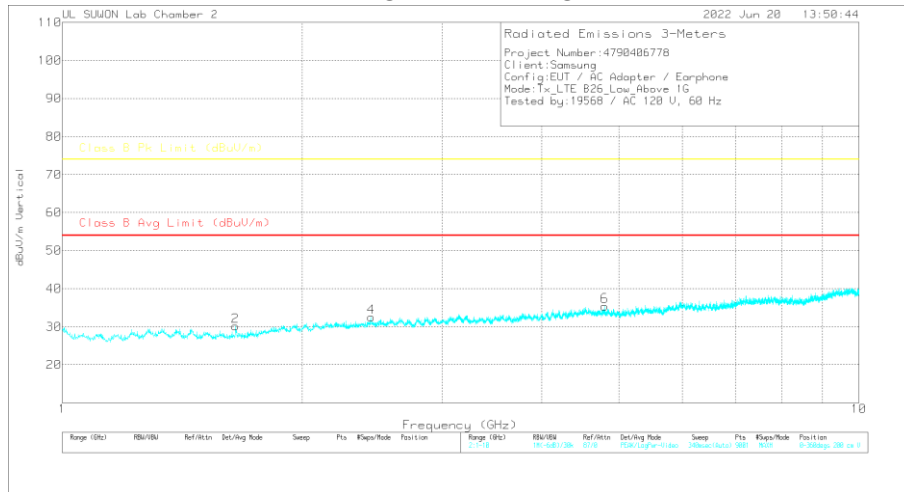
7.1.4. Above 1GHz in the LTE Band 26

LOW CHANNEL(866.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

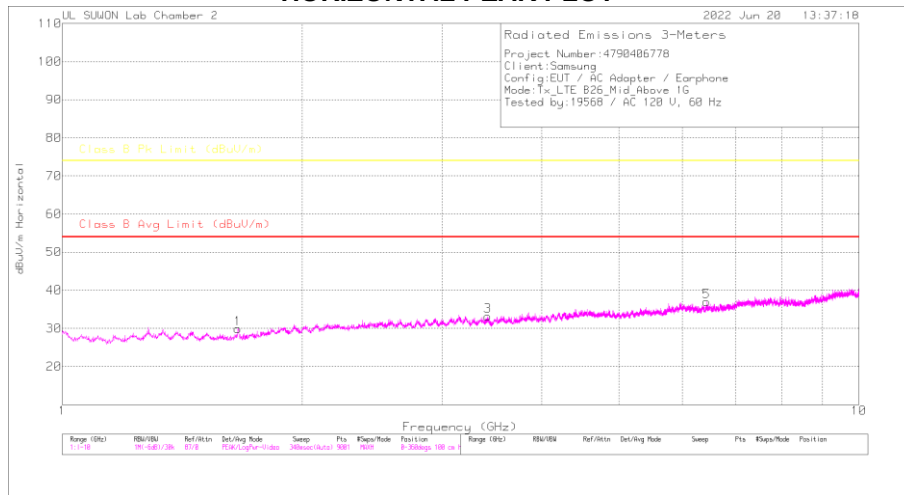
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016872 -4	1-18GHz[dB]	1GHz HPF[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.652	38.13	Pk	28.6	-31.1	.8	36.43	-	-	74	-37.57	360	100	H
1.652	26.71	Ca	28.6	-31.1	.8	25.01	54	-28.99	-	-	360	100	H
1.65	36.74	Pk	28.6	-31	.8	35.14	-	-	74	-38.86	360	100	V
1.65	25.14	Ca	28.6	-31	.8	23.54	54	-30.46	-	-	360	100	V
3.178	35.18	Pk	33	-29.6	.7	39.28	-	-	74	-34.72	360	100	H
3.178	23.3	Ca	33	-29.6	.7	27.4	54	-26.6	-	-	360	100	H
2.444	36.24	Pk	32	-30.1	.8	38.94	-	-	74	-35.06	360	100	V
2.444	24.32	Ca	32	-30.1	.8	27.02	54	-26.98	-	-	360	100	V
4.663	36.23	Pk	34.1	-29	.4	41.73	-	-	74	-32.27	360	100	H
4.663	24.39	Ca	34.1	-29	.4	29.89	54	-24.11	-	-	360	100	H
4.796	35.77	Pk	34.1	-28.2	.5	42.17	-	-	74	-31.83	360	100	V
4.796	23.64	Ca	34.1	-28.2	.5	30.04	54	-23.96	-	-	360	100	V

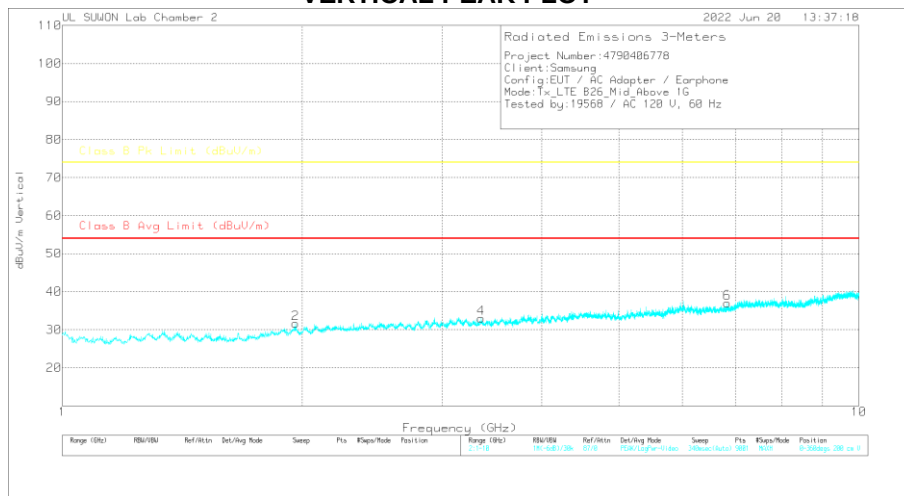
Pk - Peak detector
Ca - CISPR average detection

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

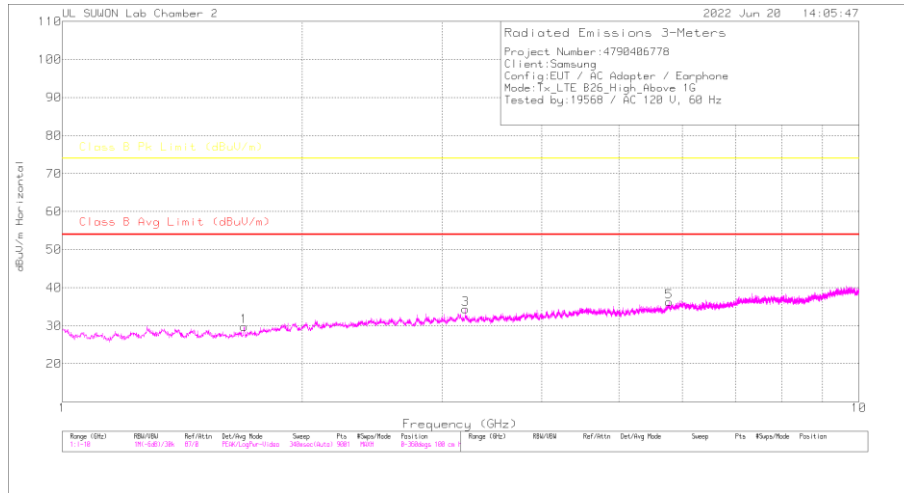
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016872 4	1-18GHz[dB]	1GHz HPF[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.662	38.64	Pk	28.6	-31	.8	37.04	-	-	74	-36.96	360	100	H
1.662	26.48	Ca	28.6	-31	.8	24.88	54	-29.12	-	-	360	100	H
1.964	37.49	Pk	31.1	-30.8	.6	38.39	-	-	74	-35.61	360	100	V
1.964	24.89	Ca	31.1	-30.8	.6	25.79	54	-28.21	-	-	360	100	V
3.423	36.14	Pk	32.7	-29.1	.6	40.34	-	-	74	-33.66	360	100	H
3.423	23.74	Ca	32.7	-29.1	.6	27.94	54	-26.06	-	-	360	100	H
3.356	35.78	Pk	32.7	-29.7	.7	39.48	-	-	74	-34.52	360	100	V
3.356	24.21	Ca	32.7	-29.7	.7	27.91	54	-26.09	-	-	360	100	V
6.434	35.04	Pk	35.4	-26.7	.4	44.14	-	-	74	-29.86	360	100	H
6.434	22.92	Ca	35.4	-26.7	.4	32.02	54	-21.98	-	-	360	100	H
6.836	34.08	Pk	35.7	-25.8	.4	44.38	-	-	74	-29.62	360	100	V
6.836	22.1	Ca	35.7	-25.8	.4	32.4	54	-21.6	-	-	360	100	V

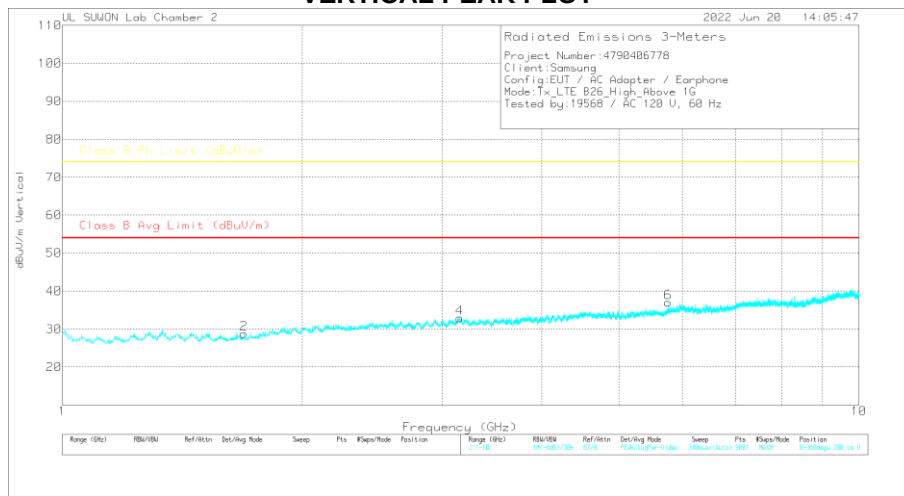
Pk - Peak detector
Ca - CISPR average detection

HIGH CHANNEL(886.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Radiated Emissions

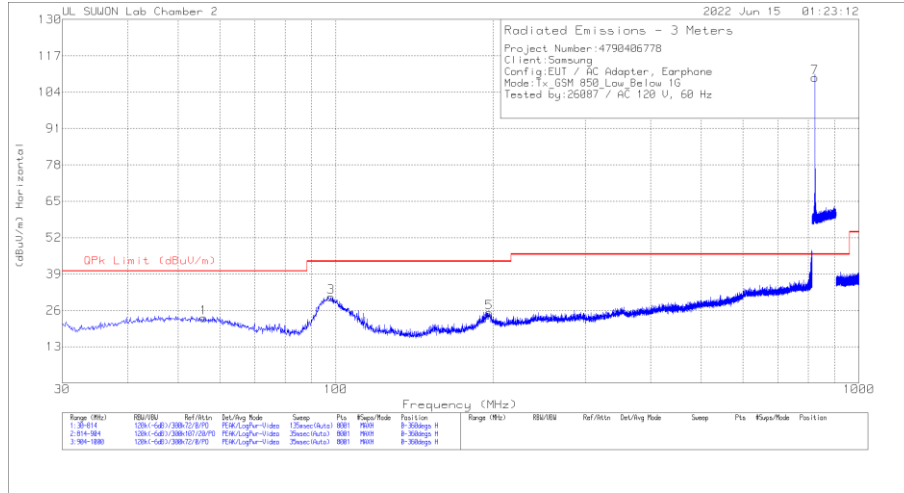
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0016872 4	1-18GHz[dB]	1GHz HPF[dB]	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.692	37.16	Pk	28.7	-31	.8	35.66	-	-	74	-38.34	360	100	H
1.692	25.74	Ca	28.7	-31	.8	24.24	54	-29.76	-	-	360	100	H
1.691	37.27	Pk	28.7	-31	.8	35.77	-	-	74	-38.23	360	100	V
1.691	24.85	Ca	28.7	-31	.8	23.35	54	-30.65	-	-	360	100	V
3.207	36.26	Pk	33	-29.6	.7	40.36	-	-	74	-33.64	360	100	H
3.207	24.06	Ca	33	-29.6	.7	28.16	54	-25.84	-	-	360	100	H
3.157	36.09	Pk	33	-29.6	.7	40.19	-	-	74	-33.81	360	100	V
3.157	23.99	Ca	33	-29.6	.7	28.09	54	-25.91	-	-	360	100	V
5.776	35	Pk	34.8	-27.1	.6	43.3	-	-	74	-30.7	360	100	H
5.776	22.93	Ca	34.8	-27.1	.6	31.23	54	-22.77	-	-	360	100	H
5.765	34.98	Pk	34.8	-27.2	.5	43.08	-	-	74	-30.92	360	100	V
5.765	22.98	Ca	34.8	-27.2	.5	31.08	54	-22.92	-	-	360	100	V

Pk - Peak detector
Ca - CISPR average detection

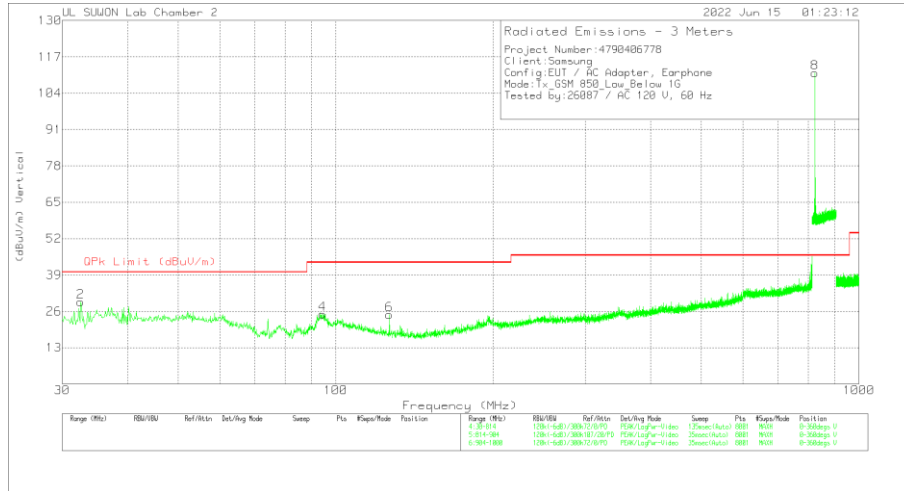
7.1.5. Below 1 GHz in the GSM850

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	55.872	3.23	Pk	19.2	.9	23.33	40	-16.67	0-360	200	H
3	97.914	12.48	Pk	17.2	1.1	30.78	43.52	-12.74	0-360	200	H
5	196.502	6.12	Pk	17.5	1.6	25.22	43.52	-18.3	0-360	100	H
7	824.2038	79.21	Pk	26.7	3.3	109.21	46.02	63.19	0-360	200	H
2	32.548	13.17	Pk	15.5	.7	29.37	40	-10.63	0-360	200	V
4	94.386	7.4	Pk	16.4	1.1	24.9	43.52	-18.62	0-360	200	V
6	126.628	8.95	Pk	14.5	1.3	24.75	43.52	-18.77	0-360	200	V
8	824.2038	81.25	Pk	26.7	3.3	111.25	46.02	65.23	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(881.6 MHz)

UL SUION Lab Chamber 2

2022 Jun 15 00:58:10

Radiated Emissions - 3 Meters

Project Number: 4790406778

Client: Samsung

Config: EUT / AC Adapter, Earphone

Mode: 1x, GSM 850 Mid, Below 1G

Tested by: 26897 / AC 120 V, 60 Hz

dBuV/m Horizontal

QPk Limit (dBuV/m)

Frequency (MHz)

Range (MHz)	RBW/MBW	Ref/Refn	Det/Avg Mode	Sweep	Pk	Flags/Mode	Position
1.50-100	120K-6dB/120K/2/0/10	PLN/LogPwr-1-dbm	2Mean(Avg)	8001	Peak	P-300sps 1	
2.04-904	120K-6dB/120K/10/0/10	PLN/LogPwr-1-dbm	2Mean(Avg)	8001	Peak	P-300sps 1	
3.50-1000	120K-6dB/120K/2/0/10	PLN/LogPwr-1-dbm	2Mean(Avg)	8001	Peak	P-300sps 1	

UL SUON Lab Chamber 2

2022 Jun 15 00:58:10

Radiated Emissions - 3 Meters

Project Number: 4790406778

Client: Samsung

Config: EU / AC Adapter, Earphone

Mode: Tx, GSM 850, Mid Below 1G

Tested by: 25887 / AC 120 V, 60 Hz

dBuV/m Vertical

QPk Limit (dBuV/m)

2 4 6 8

Frequency (MHz)

Range (MHz)	RBW/BBW	Ref/Attn	Det/Agc Mode	Sweep	Pa	ESys/Mode	Position
4.304-14	120/-6dB/-3000/12/0/PT	FSW/Log/ue=V/dBm	120sec/Auto/L	QPK	90dB	0-3000bps U	
5.814-584	120/-6dB/3000/12/0/PT	FSW/Log/ue=V/dBm	25sec/Auto/L	QPK	90dB	0-3000bps U	
6.944-1800	120/-6dB/3000/12/0/PT	FSW/Log/ue=V/dBm	25sec/Auto/L	QPK	90dB	0-3000bps U	

Trace Markers

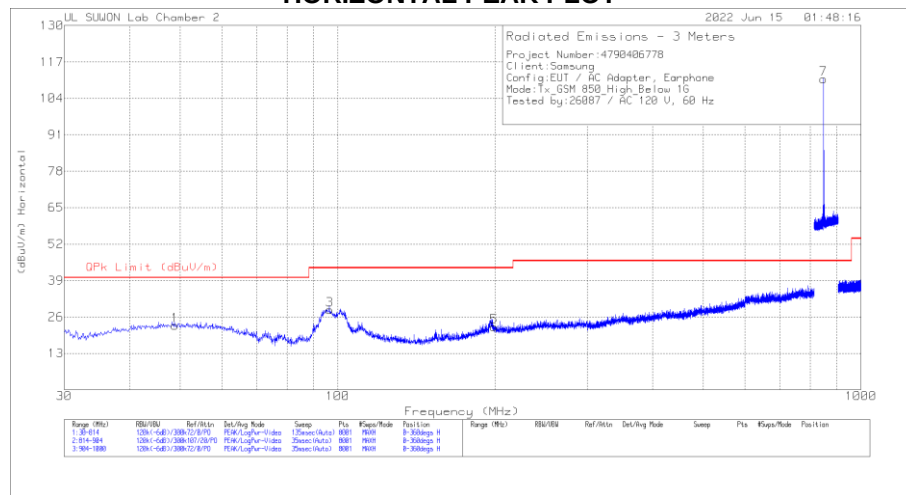
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	48.326	4.6	Pk	19.9	.8	25.3	40	-14.7	0-360	100	H
3	99.188	13.18	Pk	17.3	1.1	31.58	43.52	-11.94	0-360	200	H
5	192.68	5.4	Pk	16.8	1.6	23.8	43.52	-19.72	0-360	100	H
7	836.6575	81.21	Pk	26.9	3.3	111.41	46.02	65.39	0-360	100	H
2	32.548	15.44	Pk	15.5	.7	31.64	40	-8.36	0-360	200	V
4	92.916	14	Pk	16.2	1.1	31.3	43.52	-12.22	0-360	200	V
6	190.426	8.73	Pk	16.5	1.6	26.83	43.52	-16.69	0-360	200	V
8	836.6575	81.22	Pk	26.9	3.3	111.42	46.02	65.4	0-360	300	V

Pk - Peak detector

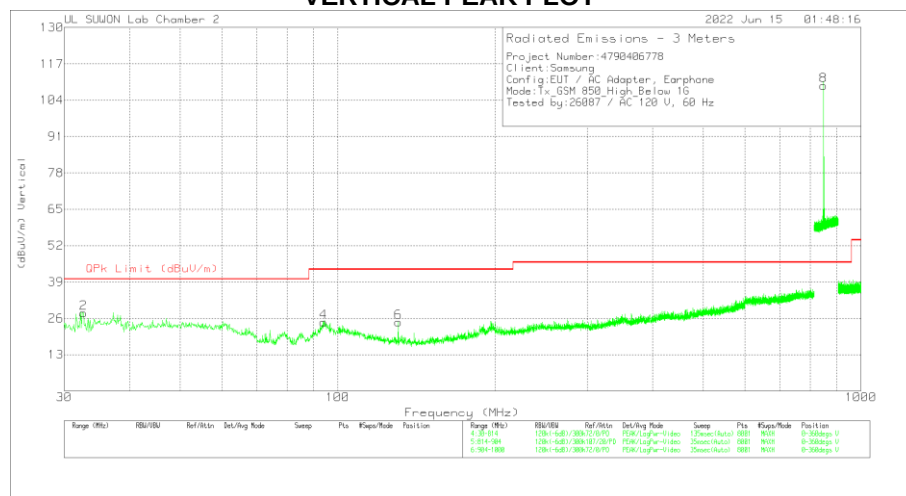
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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	48.816	2.25	Pk	19.9	.8	22.95	40	-17.05	0-360	200	H
3	96.542	10.6	Pk	16.9	1.1	28.6	43.52	-14.92	0-360	200	H
5	198.952	3.59	Pk	17.3	1.6	22.49	43.52	-21.03	0-360	100	H
7	848.7963	80.23	Pk	27.3	3.3	110.83	46.02	64.81	0-360	300	H
2	32.646	11.65	Pk	15.5	.7	27.85	40	-12.15	0-360	200	V
4	93.994	7.18	Pk	16.4	1.1	24.68	43.52	-18.84	0-360	200	V
6	130.45	9.11	Pk	14.2	1.3	24.61	43.52	-18.91	0-360	200	V
8	848.7963	78.66	Pk	27.3	3.3	109.26	46.02	63.24	0-360	100	V

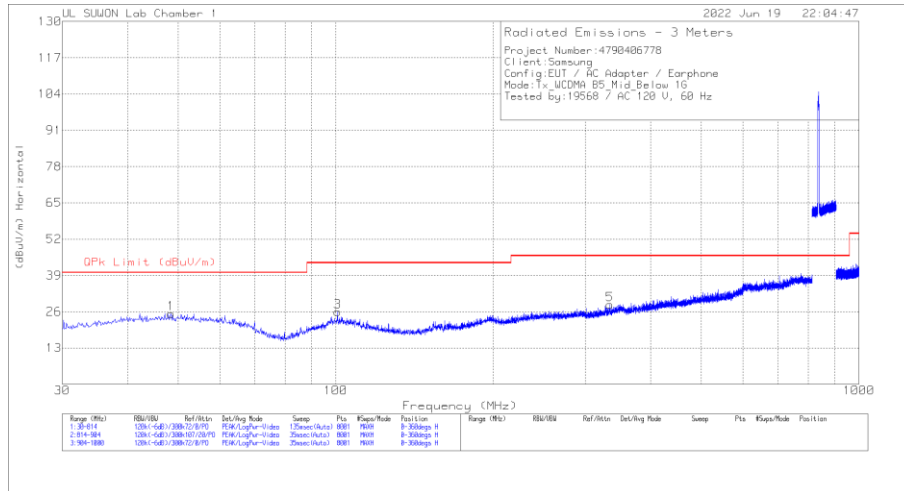
Pk - Peak detector

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

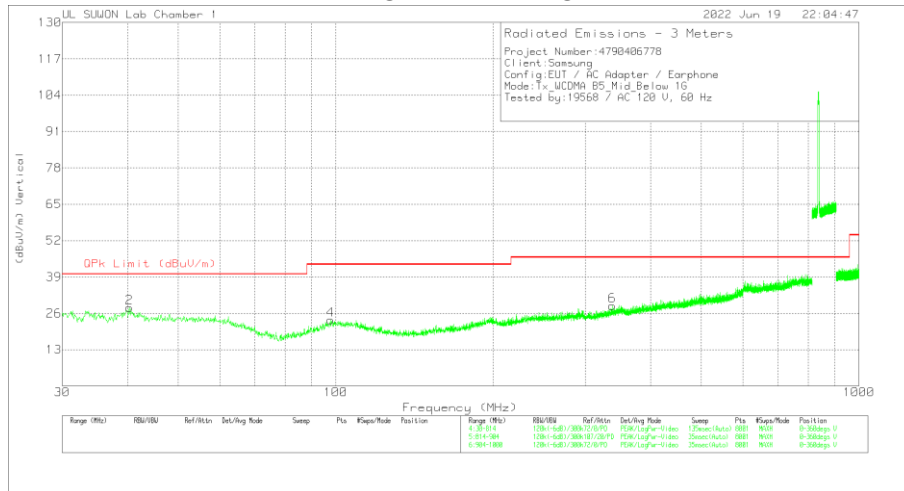
7.1.6. Below 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	48.424	3.95	Pk	19.9	1.4	25.25	40	-14.75	0-360	100	H
3	100.756	6.19	Pk	17.7	2.1	25.99	43.52	-17.53	0-360	200	H
5	334.192	4.5	Pk	20.3	3.8	28.6	46.02	-17.42	0-360	300	H
2	40.29	7.9	Pk	18.8	1.3	28	40	-12	0-360	200	V
4	97.718	4.44	Pk	17.2	2	23.64	43.52	-19.88	0-360	200	V
6	337.72	4.54	Pk	20.4	3.8	28.74	46.02	-17.28	0-360	400	V

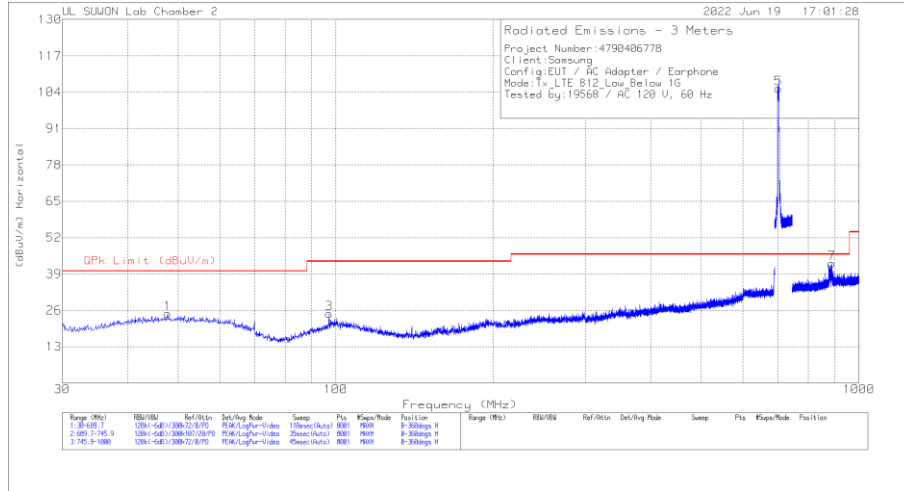
Pk - Peak detector

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

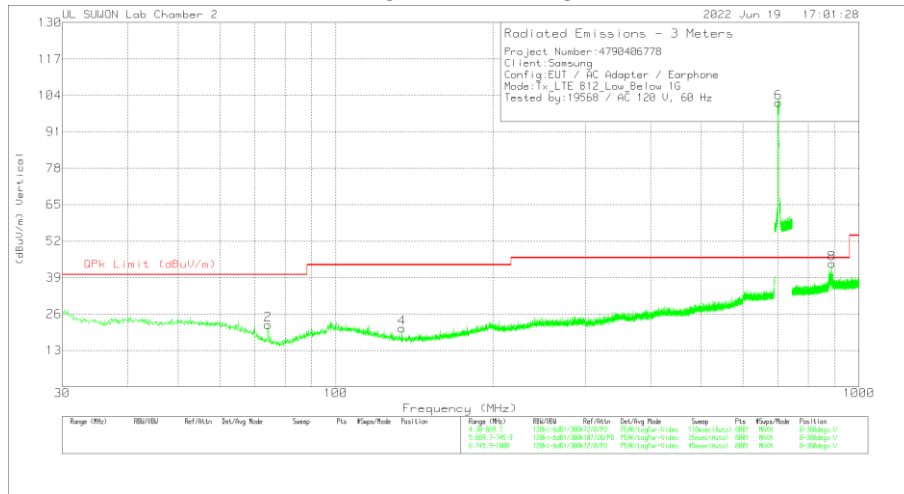
7.1.7. Below 1 GHz in the LTE Band 12

LOW CHANNEL(731.5 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	47.7295	4.06	Pk	19.9	.8	24.76	40	-15.24	0-360	200	H
3	97.0424	6.65	Pk	17	1.1	24.75	43.52	-18.77	0-360	100	H
5	701.5442	76.92	PK	25.4	3	105.32	46.02	59.3	0-360	200	H
7	888.0394	11.51	Pk	27.8	3.4	42.71	46.02	-3.31	0-360	200	H
2	74.2002	7.68	Pk	13.5	1	22.18	40	-17.82	0-360	300	V
4	133.9034	5.64	Pk	13.9	1.3	20.84	43.52	-22.68	0-360	200	V
6	701.5442	73.04	Pk	25.4	3	101.44	46.02	55.42	0-360	100	V
8	888.0077	12.81	Pk	27.8	3.4	44.01	46.02	-2.01	0-360	200	V

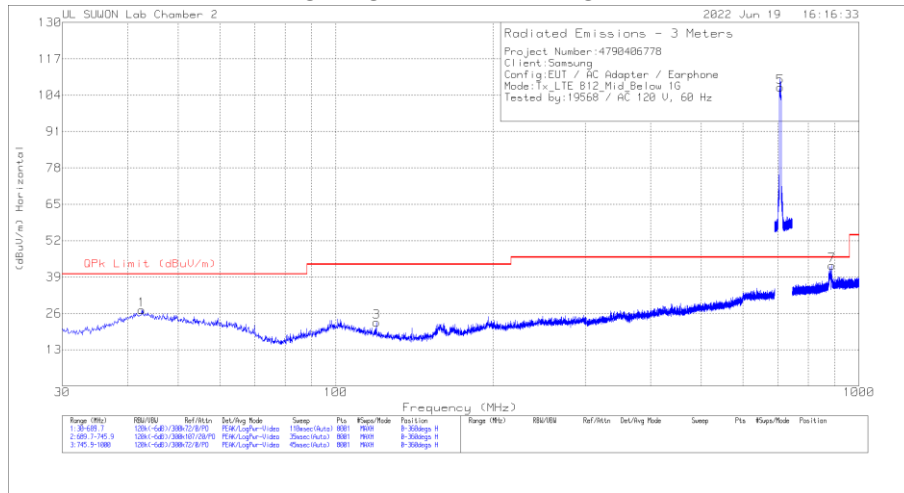
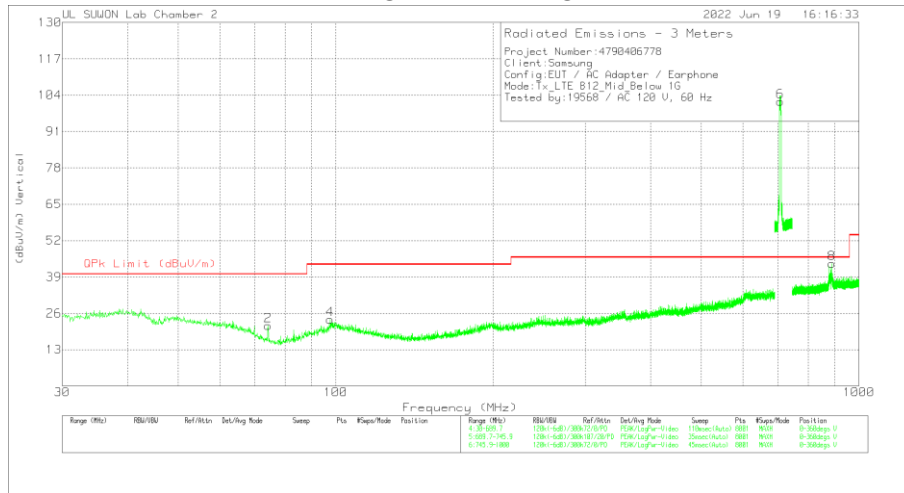
Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_74 9	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
888.0132	8.6	Qp	27.8	3.4	39.8	46.02	-6.22	360	200	H
888.0077	8.65	Qp	27.8	3.4	39.85	46.02	-6.17	213	157	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	42.5344	7.12	Pk	19.2	.8	27.12	40	-12.88	0-360	200	H
3	119.5548	6.06	Pk	15.5	1.3	22.86	43.52	-20.66	0-360	200	H
5	707.5857	78.29	PK	25.6	3	106.89	46.02	60.87	0-360	200	H
7	888.0394	11.91	PK	27.8	3.4	43.11	46.02	-2.91	0-360	300	H
2	74.2002	7.06	Pk	13.5	1	21.56	40	-18.44	0-360	200	V
4	97.5372	5.52	Pk	17.1	1.1	23.72	43.52	-19.8	0-360	300	V
6	707.5716	73.07	Pk	25.6	3	101.67	46.02	55.65	0-360	100	V
8	888.0394	12.66	PK	27.8	3.4	43.86	46.02	-2.16	0-360	300	V

Pk - Peak detector

Radiated Emissions

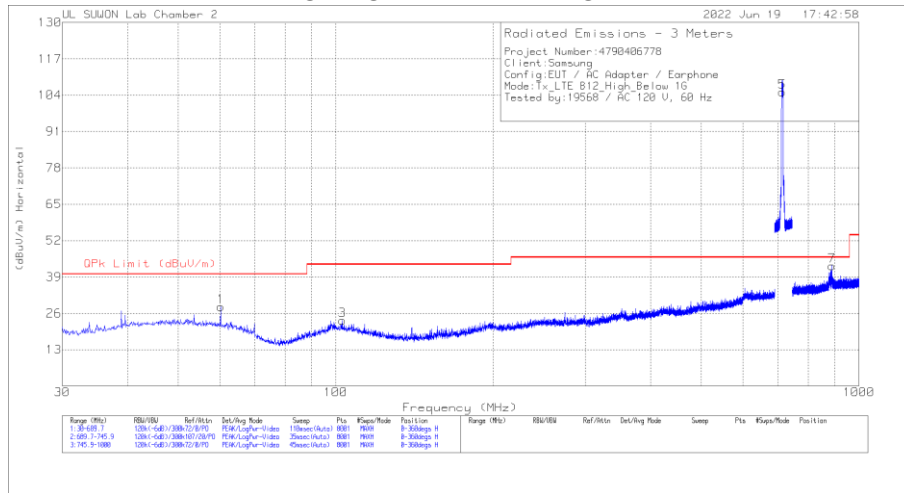
Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_74 9	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
888.0394	8.61	Qp	27.8	3.4	39.81	46.02	-6.21	227	130	H
887.9732	8.84	Qp	27.8	3.4	40.04	46.02	-5.98	46	285	V

Qp - Quasi-Peak detector

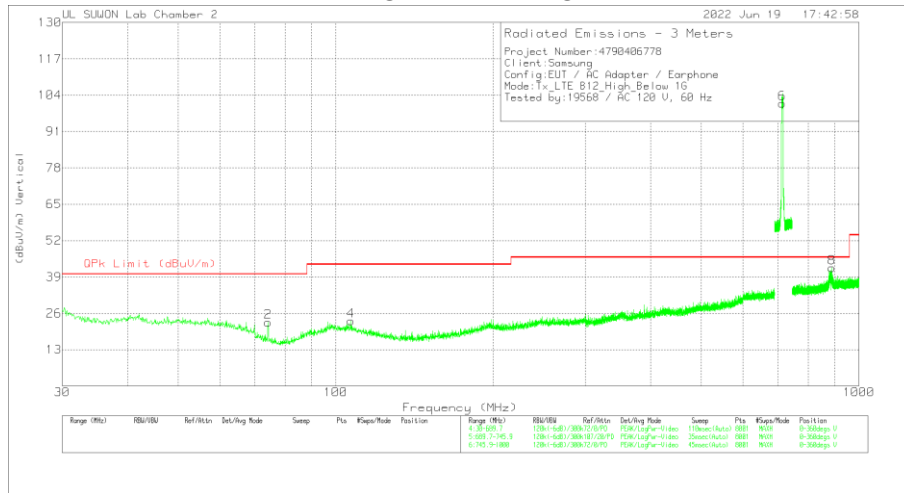
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(743.5 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	60.2639	9.12	Pk	18.4	.9	28.42	40	-11.58	0-360	300	H
3	102.8973	4.61	Pk	17.6	1.2	23.41	43.52	-20.11	0-360	100	H
5	713.5148	76.55	PK	25.6	3	105.15	46.02	59.13	0-360	200	H
7	888.0077	11.8	PK	27.8	3.4	43	46.02	-3.02	0-360	200	H
2	74.2002	8.36	PK	13.5	1	22.86	40	-17.14	0-360	300	V
4	106.8555	4.66	PK	17.4	1.2	23.26	43.52	-20.26	0-360	200	V
6	713.5077	72.51	PK	25.6	3	101.11	46.02	55.09	0-360	100	V
8	887.9441	11	PK	27.8	3.4	42.2	46.02	-3.82	0-360	400	V

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_74 9	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
888.0212	8.23	Qp	27.8	3.4	39.43	46.02	-6.59	162	224	H
887.9737	9.19	Qp	27.8	3.4	40.39	46.02	-5.63	338	303	V

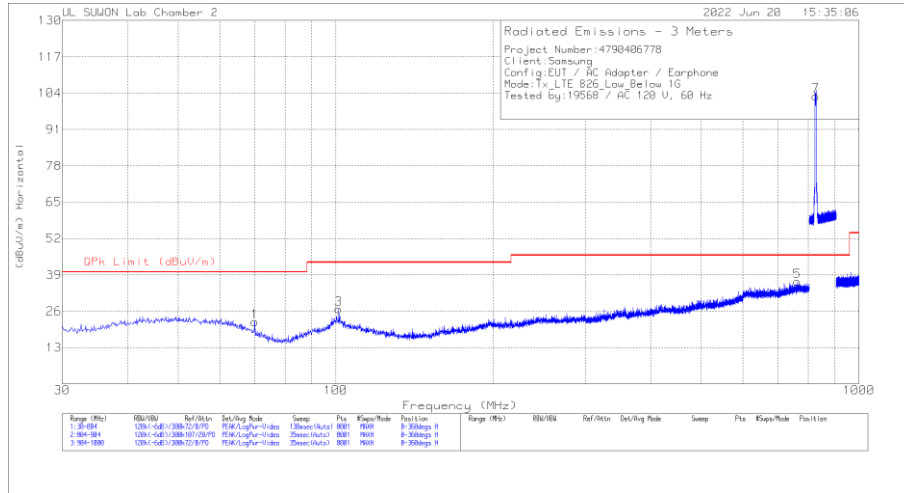
Qp - Quasi-Peak detector

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

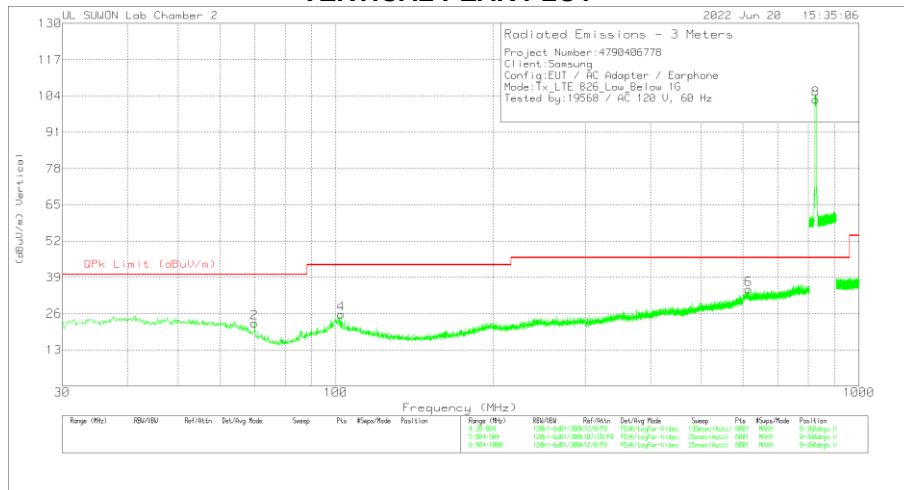
7.1.8. Below 1 GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

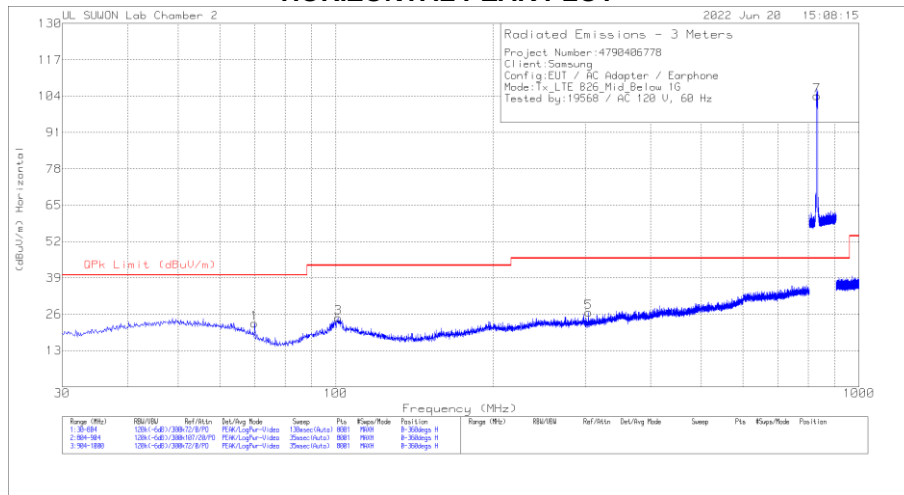
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	70.0545	6.04	Pk	15.3	1	22.34	40	-17.66	0-360	200	H
3	101.3048	8.15	Pk	17.5	1.2	26.85	43.52	-16.67	0-360	200	H
5	763.365	6.92	Pk	26.6	3.1	36.62	46.02	-9.4	0-360	300	H
7	826.55	73.01	Pk	26.7	3.3	103.01	46.02	56.99	0-360	300	H
2	69.9578	6.39	Pk	15.3	1	22.69	40	-17.31	0-360	200	V
4	102.369	7.09	Pk	17.5	1.2	25.79	43.52	-17.73	0-360	200	V
6	614.757	6.82	Pk	25.2	2.8	34.82	46.02	-11.2	0-360	400	V
8	826.5125	72.84	Pk	26.7	3.3	102.84	46.02	56.82	0-360	100	V

Pk - Peak detector

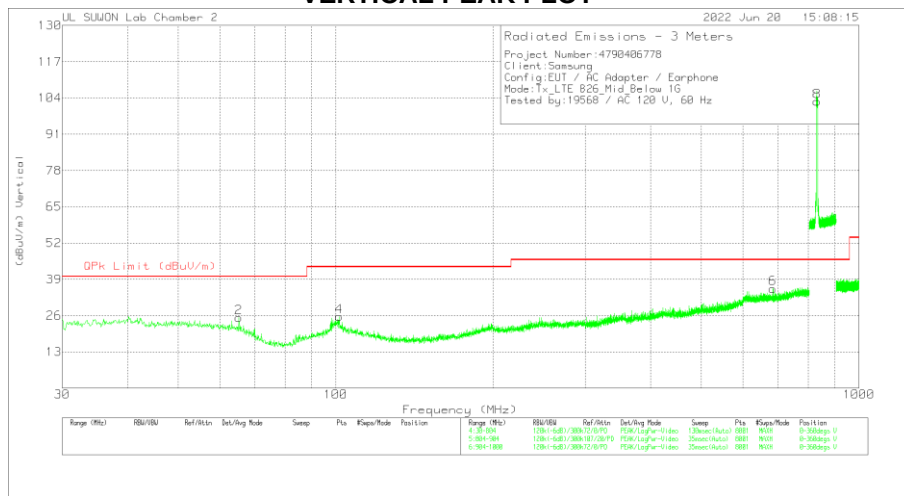
Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



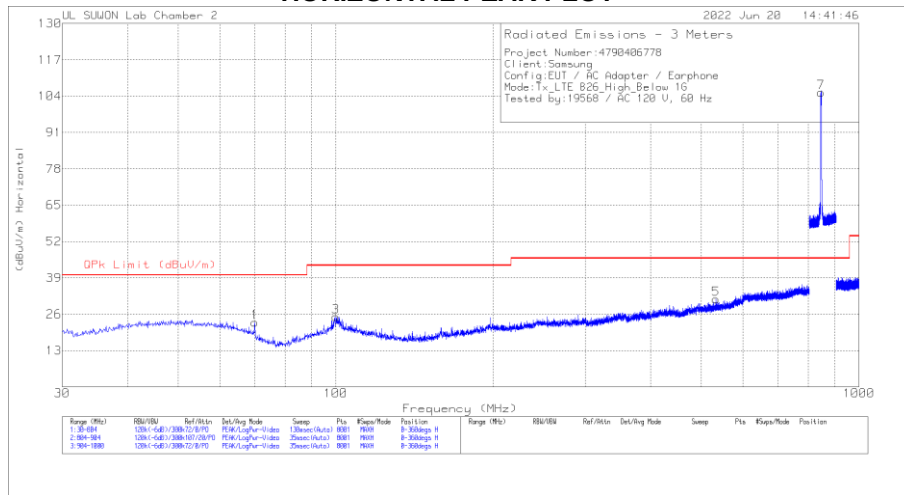
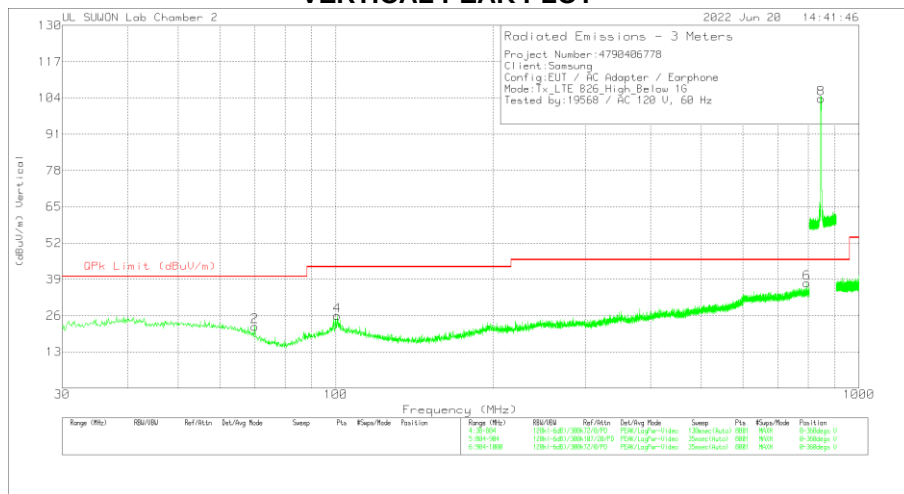
DATA

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	69.9578	6.49	PK	15.3	1	22.79	40	-17.21	0-360	200	H
3	101.1113	6.17	PK	17.5	1.2	24.87	43.52	-18.65	0-360	200	H
5	303.996	5.52	PK	19.2	2	26.72	46.02	-19.3	0-360	100	H
7	831.5125	74.07	PK	26.8	3.3	104.17	46.02	58.15	0-360	300	H
2	65.217	7.42	PK	17	.9	25.32	40	-14.68	0-360	300	V
4	101.4015	6.89	PK	17.5	1.2	25.59	43.52	-17.93	0-360	200	V
6	684.1268	7.34	PK	25.4	3	35.74	46.02	-10.28	0-360	200	V
8	831.5625	72.72	PK	26.8	3.3	102.82	46.02	56.8	0-360	100	V

PK - Peak detector

Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(892.5 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 (Degr)	Height (cm)	Polarity
1	70.0545	6.74	Pk	15.3	1	23.04	40	-16.96	0-360	200	H
3	99.9503	6.56	Pk	17.4	1.2	25.16	43.52	-18.36	0-360	100	H
5	533.0033	5.53	PK	23.3	2.6	31.43	46.02	-14.59	0-360	200	H
7	846.55	74.8	PK	27.2	3.3	105.3	46.02	59.28	0-360	300	H
2	70.0545	5.88	PK	15.3	1	22.18	40	-17.82	0-360	200	V
4	100.7243	7.23	PK	17.5	1.2	25.93	43.52	-17.59	0-360	200	V
6	795.873	7.74	PK	26.7	3.2	37.64	46.02	-8.38	0-360	300	V
8	846.5875	73.23	PK	27.2	3.3	103.73	46.02	57.71	0-360	100	V

Pk - Peak detector

Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

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 μ H/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 (dB μ V)	
	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

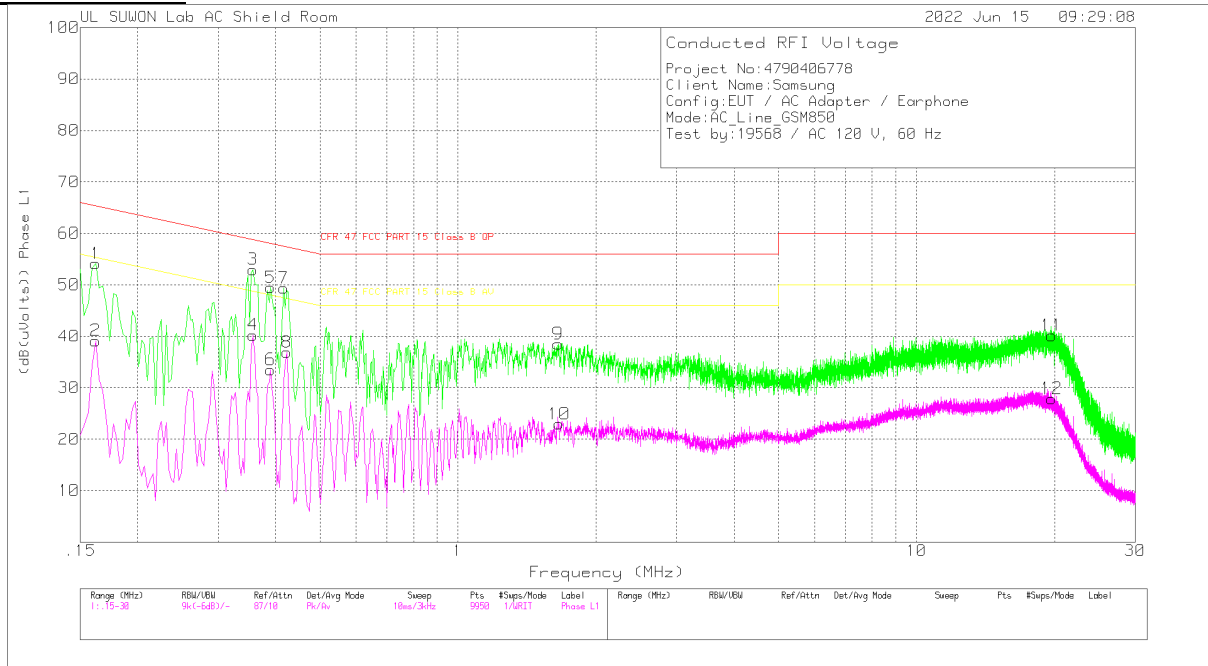
Notes:
1. The lower limit shall apply at the transition frequencies
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

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]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.162	44.11	Pk	9.9	.1	54.11	65.36	-11.25	-	-
2	.162	29.16	Av	9.9	.1	39.16	-	-	55.36	-16.2
3	.357	42.97	Pk	9.8	.2	52.97	58.8	-5.83	-	-
4	.357	30.26	Av	9.8	.2	40.26	-	-	48.8	-8.54
5	.39	39.48	Pk	9.8	.2	49.48	58.06	-8.58	-	-
6	.39	23.51	Av	9.8	.2	33.51	-	-	48.06	-14.55
7	.417	39.37	Pk	9.8	.2	49.37	57.51	-8.14	-	-
8	.423	26.9	Av	9.8	.2	36.9	-	-	47.39	-10.49
9	1.653	28.51	Pk	9.7	.3	38.51	56	-17.49	-	-
10	1.662	12.94	Av	9.7	.3	22.94	-	-	46	-23.06
11	19.713	29.56	Pk	10.2	.4	40.16	60	-19.84	-	-
12	19.713	17.28	Av	10.2	.4	27.88	-	-	50	-22.12

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

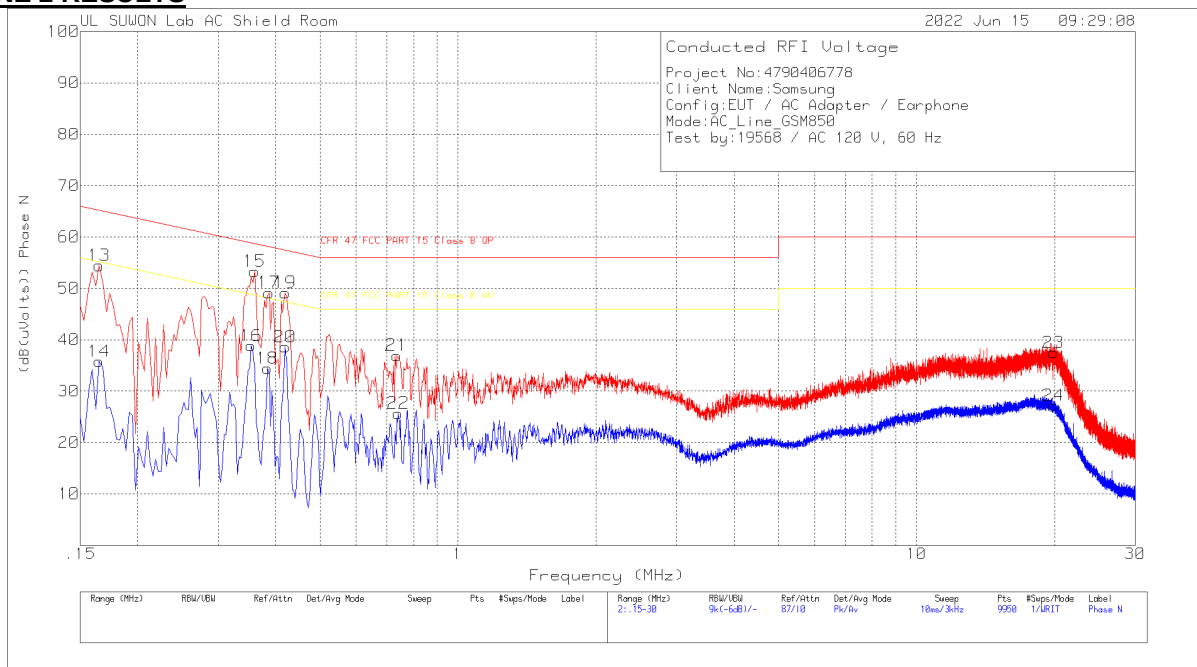
Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.16215	42	Qp	9.9	.1	52	65.35	-13.35	-	-
.35625	40.62	Qp	9.8	.2	50.62	58.82	-8.2	-	-
.38925	37.42	Qp	9.8	.2	47.42	58.08	-10.66	-	-
.41775	36.45	Qp	9.8	.2	46.45	57.49	-11.04	-	-

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]	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	.165	44.46	Pk	9.9	.1	54.46	65.21	-10.75	-	-
14	.165	25.79	Av	9.9	.1	35.79	-	-	55.21	-19.42
15	.36	43.3	Pk	9.8	.2	53.3	58.73	-5.43	-	-
16	.354	28.84	Av	9.8	.2	38.84	-	-	48.87	-10.03
17	.387	39.19	Pk	9.8	.2	49.19	58.13	-8.94	-	-
18	.384	24.45	Av	9.8	.2	34.45	-	-	48.19	-13.74
19	.42	39.13	Pk	9.8	.2	49.13	57.45	-8.32	-	-
20	.42	28.61	Av	9.8	.2	38.61	-	-	47.45	-8.84
21	.735	26.94	Pk	9.8	.2	36.94	56	-19.06	-	-
22	.741	15.69	Av	9.8	.2	25.69	-	-	46	-20.31
23	19.896	26.91	Pk	10.2	.4	37.51	60	-22.49	-	-
24	19.89	16.57	Av	10.2	.4	27.17	-	-	50	-22.83

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)
.16425	41.32	Qp	9.9	.1	51.32	65.25	-13.93	-	-
.35925	40.97	Qp	9.8	.2	50.97	58.75	-7.78	-	-
.38775	37.27	Qp	9.8	.2	47.27	58.11	-10.84	-	-
.42075	37.01	Qp	9.8	.2	47.01	57.43	-10.42	-	-

Qp - Quasi-Peak detector

END OF TEST REPORT