



CERTIFICATION TEST REPORT

Report Number. : 4789746865-E1V2

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

Model : SM-A525F/DS, SM-A525F

FCC ID : A3LSMA525F

EUT Description : GSM/WCDMA/LTE 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:

February 02, 2021

Prepared by:

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ACCREDITED

Testing Laboratory

TL-637

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	01/28/21	Initial issue	Hyunsik Yun
V2	02/02/21	Updated to address TCB's question	Hyunsik Yun

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac and NFC
MODEL NUMBER: SM-A525F/DS, SM-A525F
SERIAL NUMBER: R38N9002JNN, R38NC03HDFN (RADIATED)
DATE TESTED: DEC 23, 2020 – JAN 26, 2021;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15B	Pass

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:



Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:



Hyunsik Yun
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	
<input checked="" type="checkbox"/>	Chamber 1
<input checked="" type="checkbox"/>	Chamber 2
<input type="checkbox"/>	Chamber 3

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:

$EIRP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$

$ERP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)}$

(Path loss = Signal generator output – PSA reading with substitution antenna)

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radiated Disturbance, 30 MHz to 1 GHz	4.26 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.90 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 1, Clause 4.4.2 in IEC Guide 115:2007.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac and NFC.
This test report addresses the WWAN receiver mode.

This report covers the Samsung models SM-A525F/DS and SM-A525F.
These models are identical in hardware except SM-A525F has single SIM tray.
With some pre-scan, model SM-A525F/DS was set for final test.

5.2. TEST MODE

Mode	Description
GSM850	Communicating with Call simulator(CMW500)
WCDMA BAND 5	Communicating with Call simulator(CMW500)
LTE BAND 12	Communicating with Call simulator(CMW500)
LTE BAND 26	Communicating with Call simulator(CMW500)

5.3. WORST-CASE ORIENTATION AND MODE

For GSM850 / WCDMA B5 / LTE B12 / LTE B26, EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation.

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

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.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA200	R37N6KYPMH2SE3	N/A
Data Cable	SAMSUNG	EP-DR140AWE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFWE	N/A	N/A

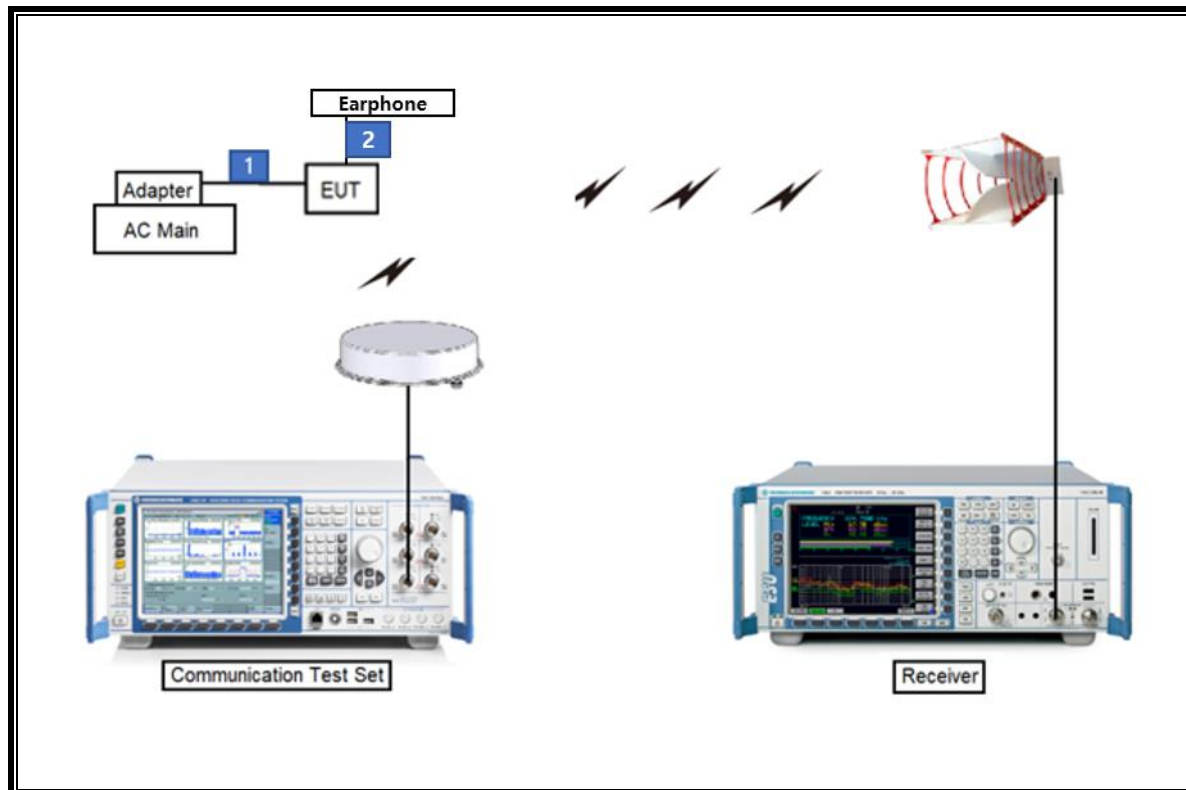
I/O CABLE

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	1.2 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	01-31-21
Antenna, Horn, 40 GHz	ETS	3116C	00166155	08-04-22
Preamplifier	ETS	3116C-PA	00168841	08-06-21
Antenna, Horn, 40 GHz	ETS	3116C	00168645	08-04-22
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-19-22
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	08-13-22
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	08-13-22
Antenna, Horn, 18 GHz	ETS	3115	00167211	07-27-22
Antenna, Horn, 18 GHz	ETS	3115	00161451	08-15-22
Antenna, Horn, 18 GHz	ETS	3117	00168724	07-27-22
Antenna, Horn, 18 GHz	ETS	3117	00168717	08-15-22
Communications Test Set	R&S	CMW500	115331	08-03-21
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-03-21
Preamplifier, 1000 MHz	Sonoma	310N	370599	08-06-21
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-03-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-03-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	08-04-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-03-21
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-03-21
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-03-21
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	08-05-21
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	08-05-21
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	08-05-21
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	08-05-21
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	08-05-21
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	08-05-21
Attenuator	PASTERNAK	PE7087-10	A009	08-05-21
Attenuator	PASTERNAK	PE7087-10	A001	08-03-21
Attenuator	PASTERNAK	PE7087-10	A008	08-03-21
Attenuator	PASTERNAK	PE7004-10	2	08-04-21
Attenuator	PASTERNAK	PE7395-10	A011	08-05-21
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

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:

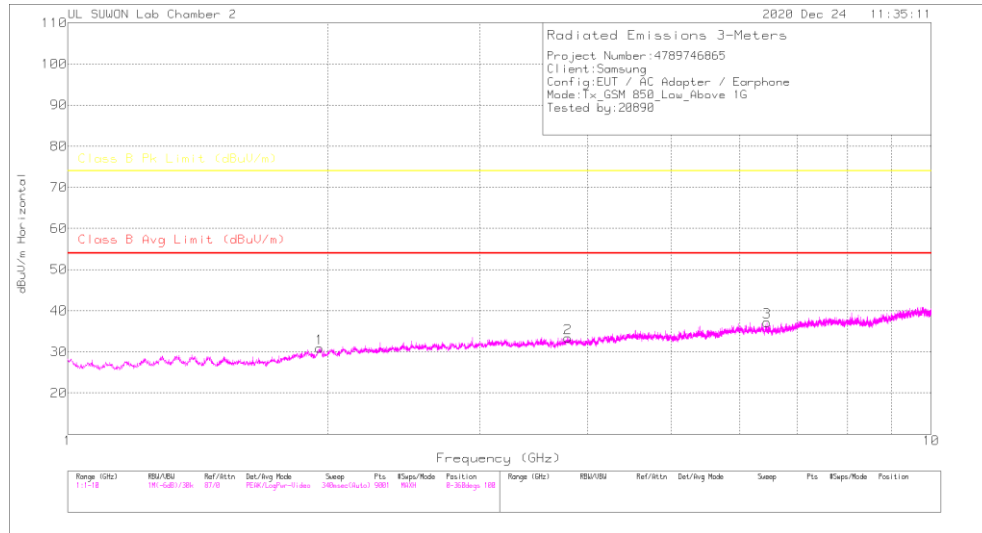
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

Note: The lower limit shall apply at the transition frequency.

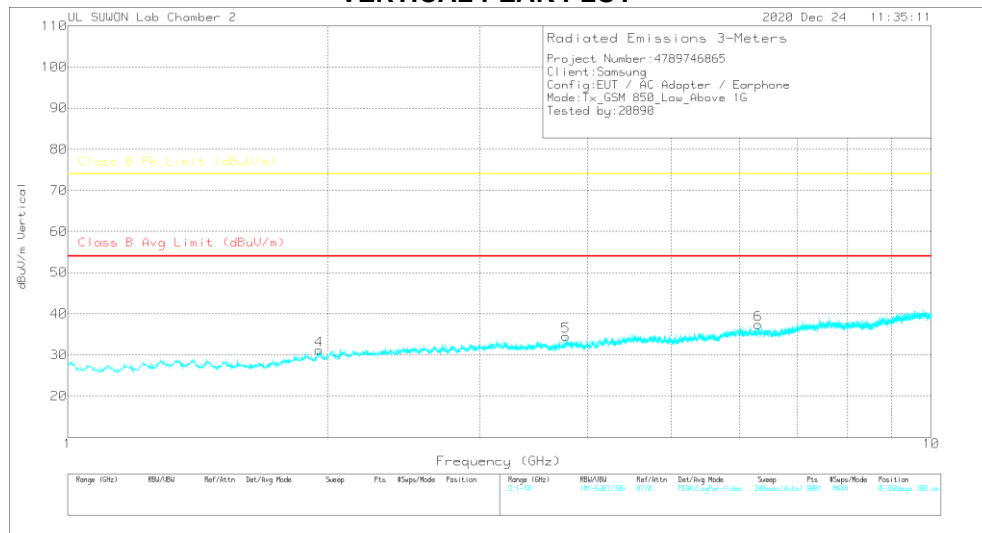
7.1. Above 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

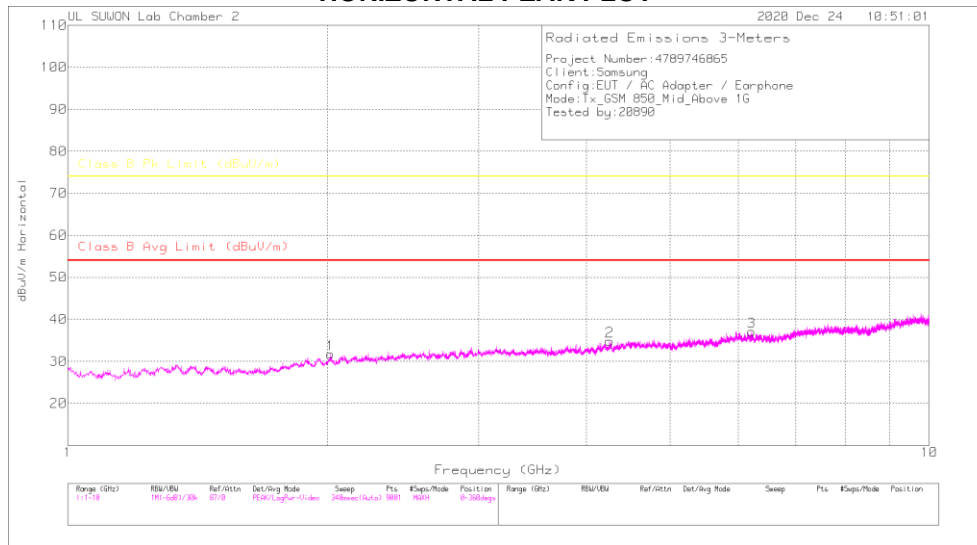
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	1.957	30.11	PK	31	-30.8	.6	30.91	-	-	74	-43.09	0-360	100	H
2	3.798	28.34	PK	33.3	-28.8	.6	33.44	-	-	74	-40.56	0-360	200	H
3	6.455	27.49	PK	35.4	-26.2	.5	37.19	-	-	74	-36.81	0-360	200	H
4	1.956	30.33	PK	31	-30.8	.6	31.13	-	-	74	-42.87	0-360	200	V
5	3.777	29.82	PK	33.3	-29.2	.6	34.52	-	-	74	-39.48	0-360	100	V
6	6.309	28.37	PK	35.3	-26.8	.5	37.37	-	-	74	-36.63	0-360	100	V

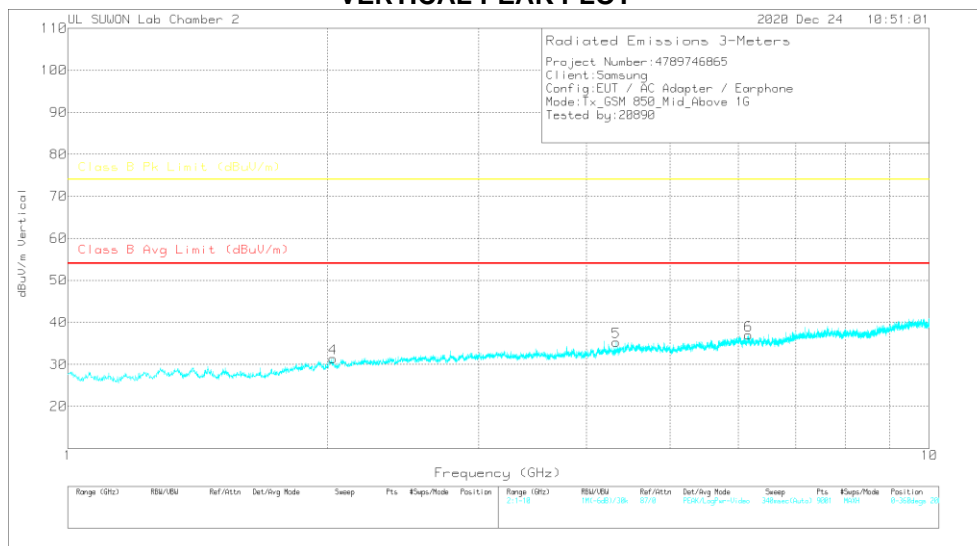
PK-Peak Detector

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

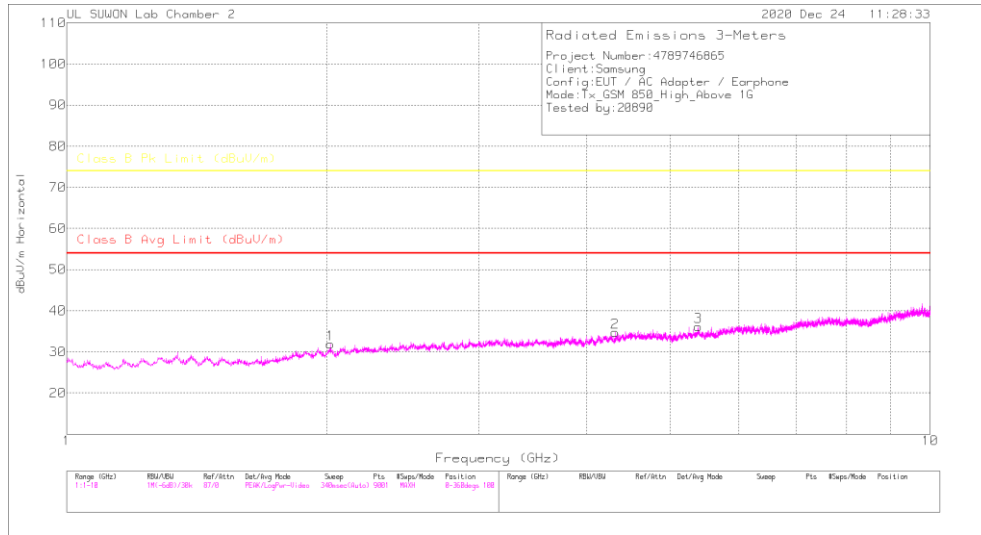
Trace Markers

Marker	Frequency (GHz)	Marker Reading (dBuV)	Det	3117_00168724	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	2.018	30.62	PK	31.3	-30.8	.6	31.72	-	-	74	-42.28	0-360	200	H
2	4.257	29.2	PK	33.5	-28.4	.5	34.8	-	-	74	-39.2	0-360	100	H
3	6.221	27.78	PK	35.3	-26.5	.5	37.08	-	-	74	-36.92	0-360	100	H
4	2.031	30.33	PK	31.3	-30.8	.6	31.43	-	-	74	-42.57	0-360	200	V
5	4.331	30.14	PK	33.6	-28.9	.5	35.34	-	-	74	-38.66	0-360	100	V
6	6.171	27.77	PK	35.3	-26.6	.5	36.97	-	-	74	-37.03	0-360	100	V

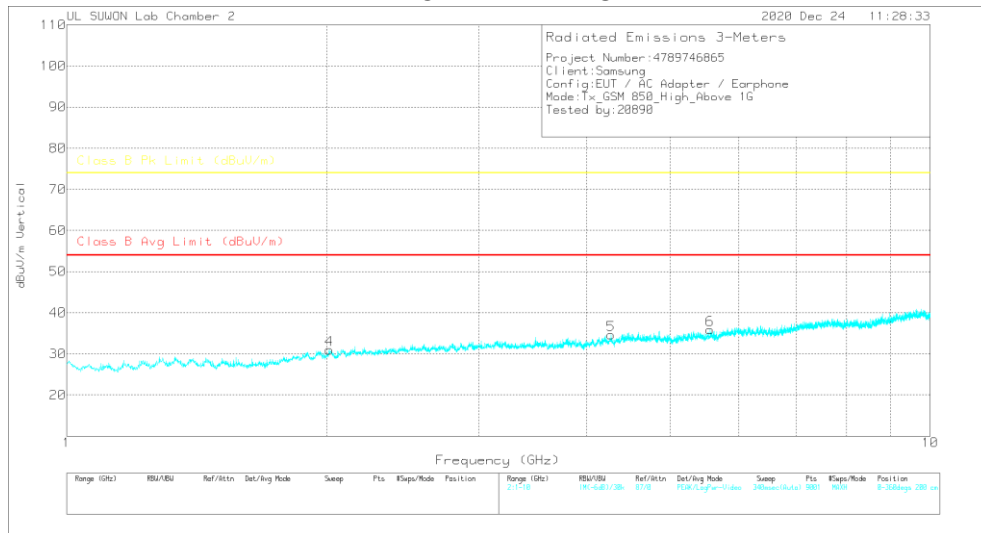
PK – Peak Detector

HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

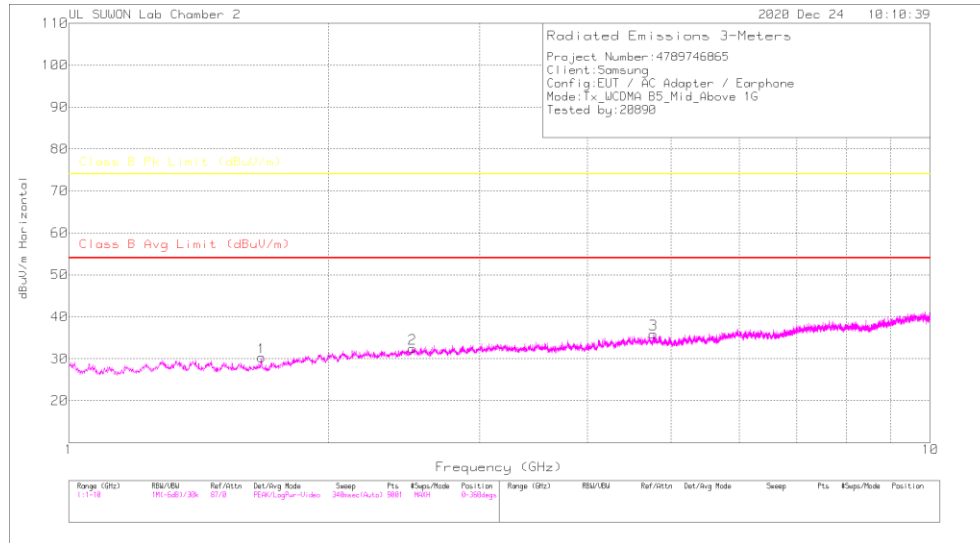
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.021	30.84	PK	31.3	-30.9	.6	31.84	-	-	74	-42.16	0-360	200	H
2	4.317	29.52	PK	33.6	-28.9	.5	34.72	-	-	74	-39.28	0-360	100	H
3	5.38	29.01	PK	34.5	-27.9	.5	36.11	-	-	74	-37.89	0-360	200	H
4	2.015	29.86	PK	31.3	-30.8	.6	30.96	-	-	74	-43.04	0-360	100	V
5	4.271	29.26	PK	33.5	-28.6	.5	34.66	-	-	74	-39.34	0-360	100	V
6	5.562	28.41	PK	34.6	-27.6	.5	35.91	-	-	74	-38.09	0-360	100	V

PK – Peak Detector

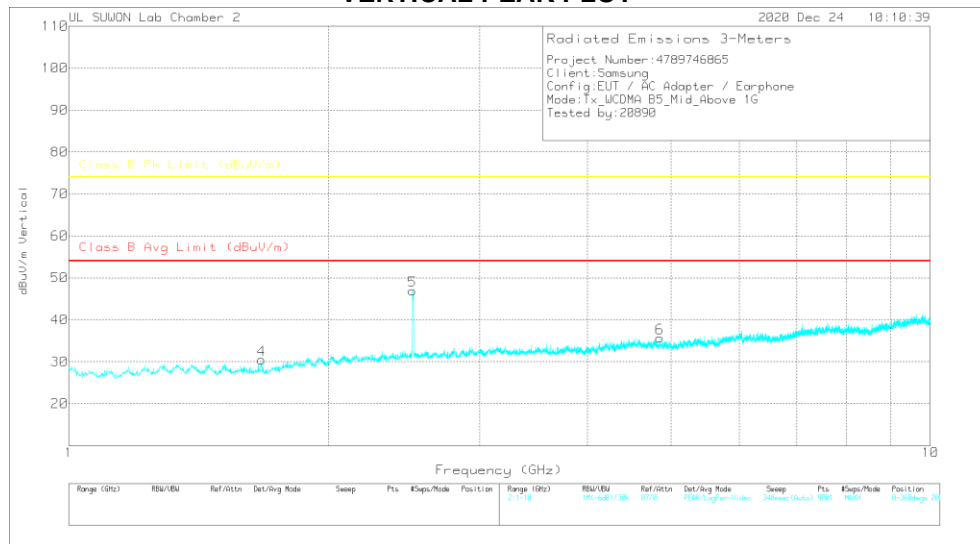
7.2. Above 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

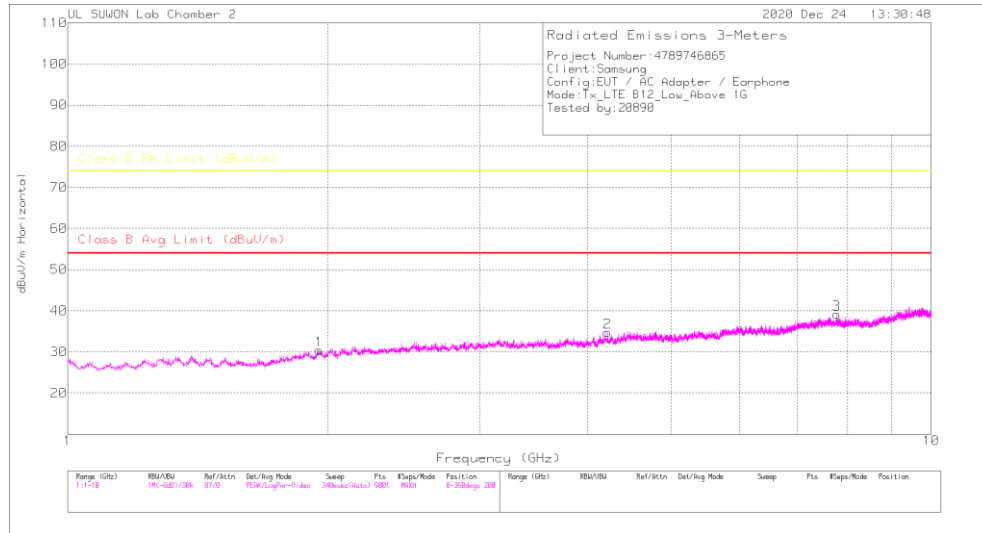
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	1-18GHz(dB)	1GHz_HP(dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.675	32.34	PK		-31.3	.7	30.34	-	-	74	-43.66	0-360	100	H
2	2.506	29.68	PK		-30	.7	32.48	-	-	74	-41.52	0-360	200	H
3	4.771	29.42	PK		-28.1	.5	35.92	-	-	74	-38.08	0-360	100	H
4	1.674	32.46	PK		-31.3	.7	30.46	-	-	74	-43.54	0-360	200	V
5	2.506	44.15	PK		-30	.7	46.95	-	-	74	-27.05	0-360	200	V
6	4.854	28.77	PK		-27.7	.5	35.67	-	-	74	-38.33	0-360	100	V

PK – Peak Detector

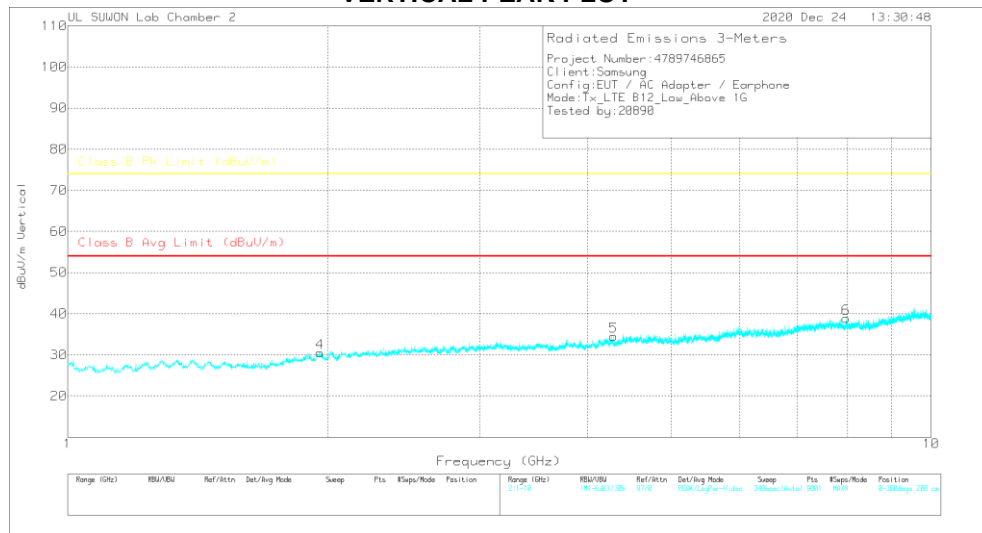
7.3. Above 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

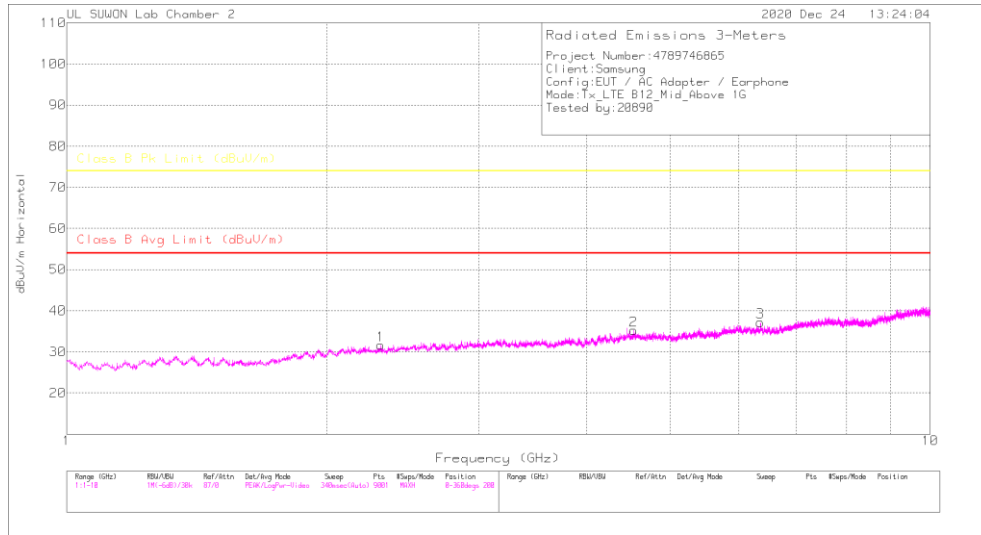
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	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	1.954	29.65	PK	31	-30.9	.6	30.35	-	-	74	-43.65	0-360	200	H
2	4.22	29.06	PK	33.4	-28.2	.5	34.76	-	-	74	-39.24	0-360	100	H
3	7.774	26.47	PK	36	-23.9	.6	39.17	-	-	74	-34.83	0-360	200	H
4	1.961	29.81	PK	31	-30.9	.6	30.51	-	-	74	-43.49	0-360	200	V
5	4.288	29.2	PK	33.5	-28.7	.5	34.5	-	-	74	-39.5	0-360	200	V
6	7.972	26.81	PK	36	-24.5	.6	38.91	-	-	74	-35.09	0-360	100	V

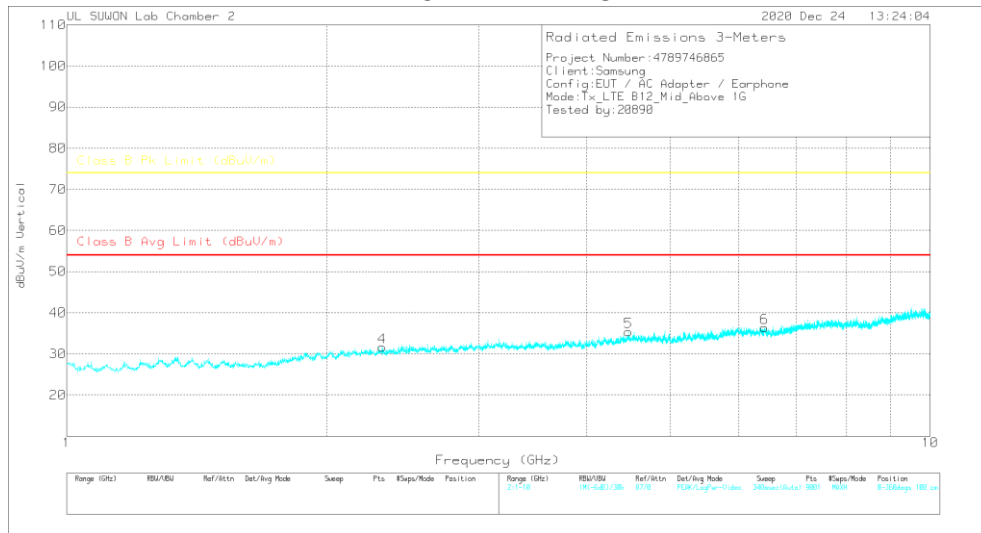
PK – Peak Detector

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

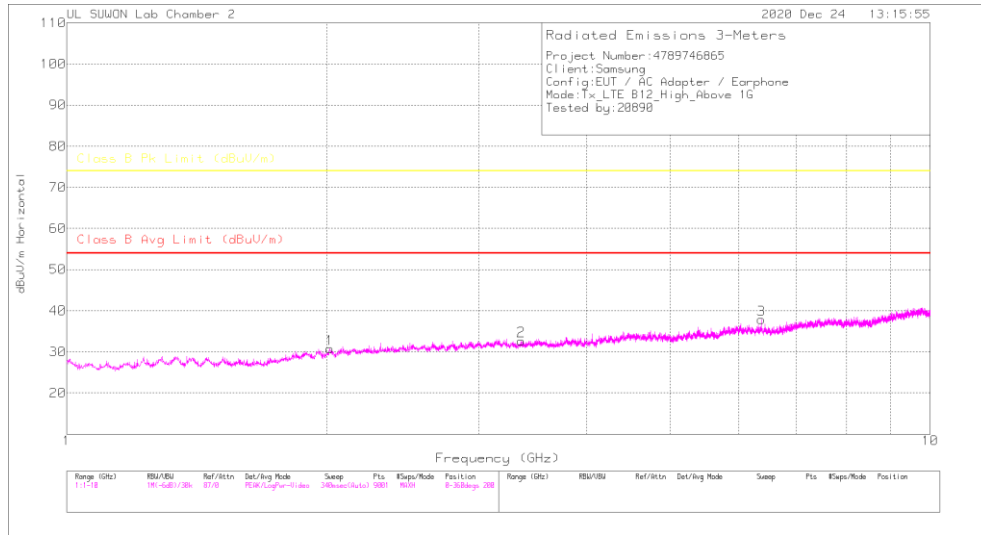
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading (dBu/m)	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.311	29.92	PK		-30.7	.7	31.62	-	-	74	-42.38	0-360	200	H
2	4.536	29.06	PK		-34.1	.5	35.26	-	-	74	-38.74	0-360	200	H
3	6.361	27.69	PK		-35.4	.5	37.19	-	-	74	-36.81	0-360	100	H
4	2.318	29.69	PK		-31.7	.7	31.59	-	-	74	-42.41	0-360	200	V
5	4.475	29.04	PK		-34	.5	35.34	-	-	74	-38.66	0-360	200	V
6	6.425	26.65	PK		-35.4	.5	36.35	-	-	74	-37.65	0-360	200	V

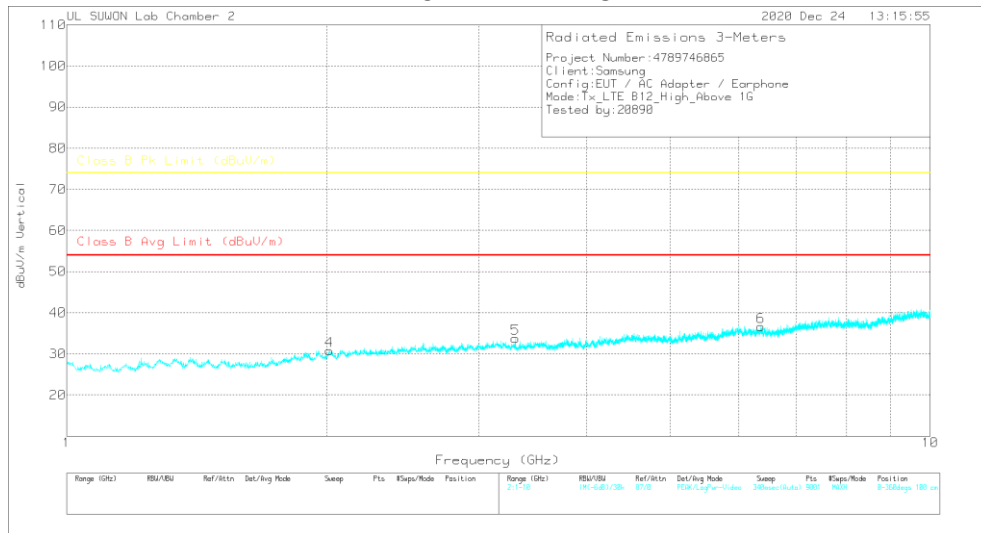
PK – Peak Detector

HIGH CHANNEL(744.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

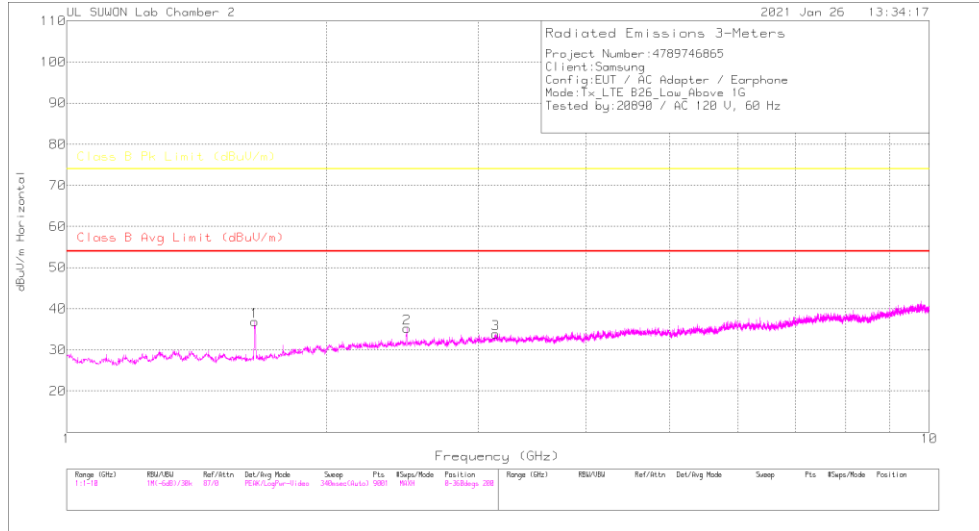
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.016	29.73	PK	31.3	-30.9	.8	30.73	-	-	74	-43.27	0-360	100	H
2	3.36	29	PK	32.7	-29.7	.7	32.7	-	-	74	-41.3	0-360	100	H
3	6.374	28.44	PK	35.4	-26.5	.5	37.84	-	-	74	-36.16	0-360	200	H
4	2.014	29.62	PK	31.3	-30.8	.6	30.72	-	-	74	-43.28	0-360	200	V
5	3.308	29.88	PK	32.8	-29.6	.7	33.78	-	-	74	-40.22	0-360	100	V
6	6.363	27.09	PK	35.4	-26.4	.5	36.59	-	-	74	-37.41	0-360	200	V

PK – Peak Detector

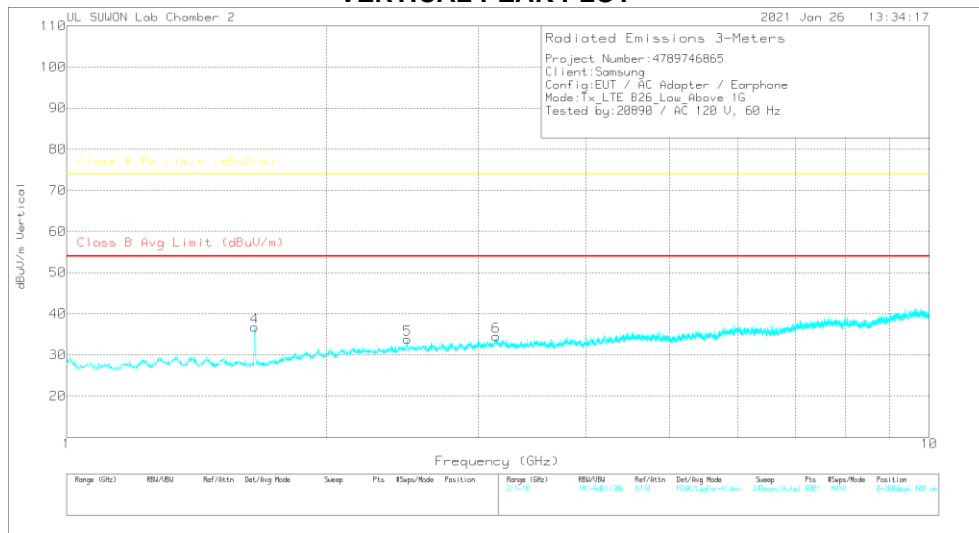
7.4. Above 1 GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

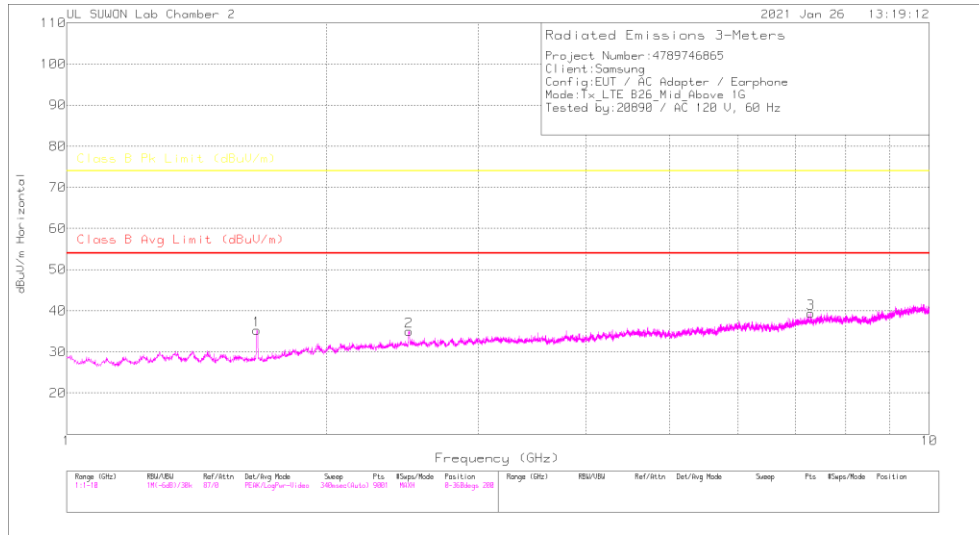
Trace Markers

Marker	Frequency (GHz)	Marker Reading (dBuV)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBu/m	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.653	38.92	PK	28.6	-31.4	.7	36.82	-	-	74	-37.18	0-360	200	H
2	2.48	32.41	PK	32	-29.9	.7	35.21	-	-	74	-38.79	0-360	100	H
3	3.143	29.99	PK	33	-29.8	.7	33.89	-	-	74	-40.11	0-360	100	H
4	1.651	38.86	PK	28.6	-31.4	.7	36.76	-	-	74	-37.24	0-360	200	V
5	2.482	30.93	PK	32	-29.9	.7	33.73	-	-	74	-40.27	0-360	200	V
6	3.145	30.54	PK	33	-29.7	.7	34.54	-	-	74	-39.46	0-360	200	V

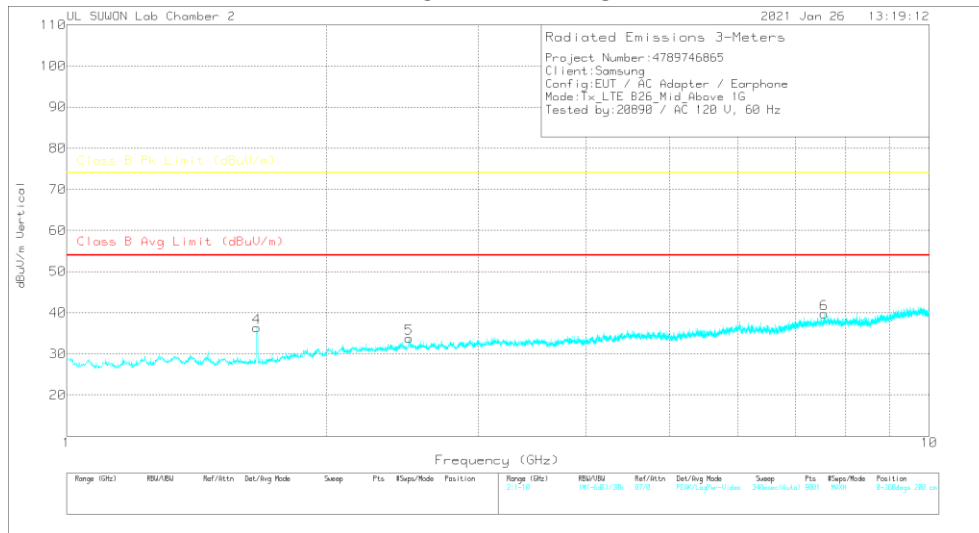
Pk - Peak detector

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

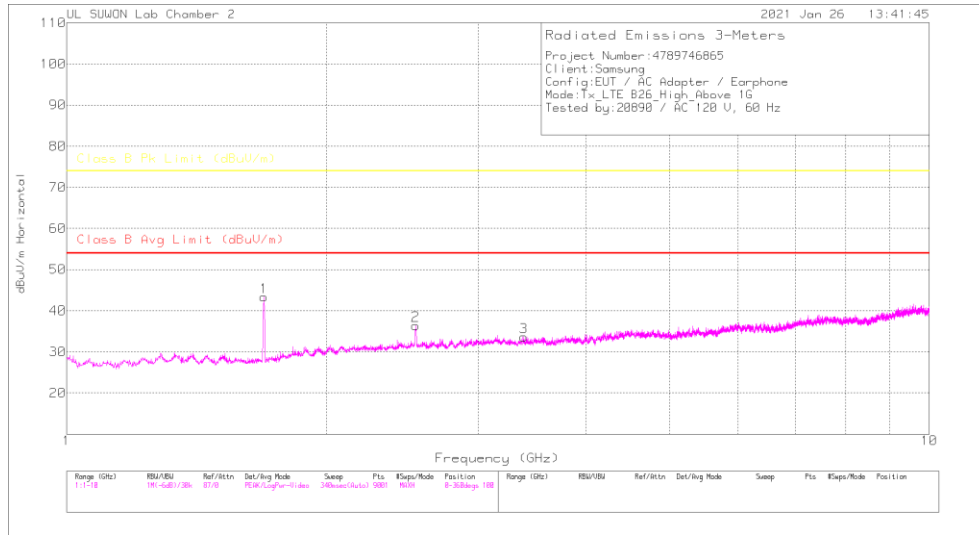
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	AvCISPRMargin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Deg)	Height (cm)	Polarity
1	1.681	37.32	PK	28.6	-31.4	.7	35.22	-	-	74	-38.78	0-360	200	H
2	2.493	32.05	PK	32.1	-29.9	.7	34.55	-	-	74	-39.05	0-360	100	H
3	7.293	28.1	PK	36.2	-25.4	.5	39.4	-	-	74	-34.6	0-360	100	H
4	1.66	38.45	PK	28.6	-31.4	.7	36.35	-	-	74	-37.65	0-360	200	V
5	2.494	30.88	PK	32.1	-29.9	.7	33.78	-	-	74	-40.22	0-360	200	V
6	7.55	27.87	PK	36	-24.7	.6	39.77	-	-	74	-34.23	0-360	100	V

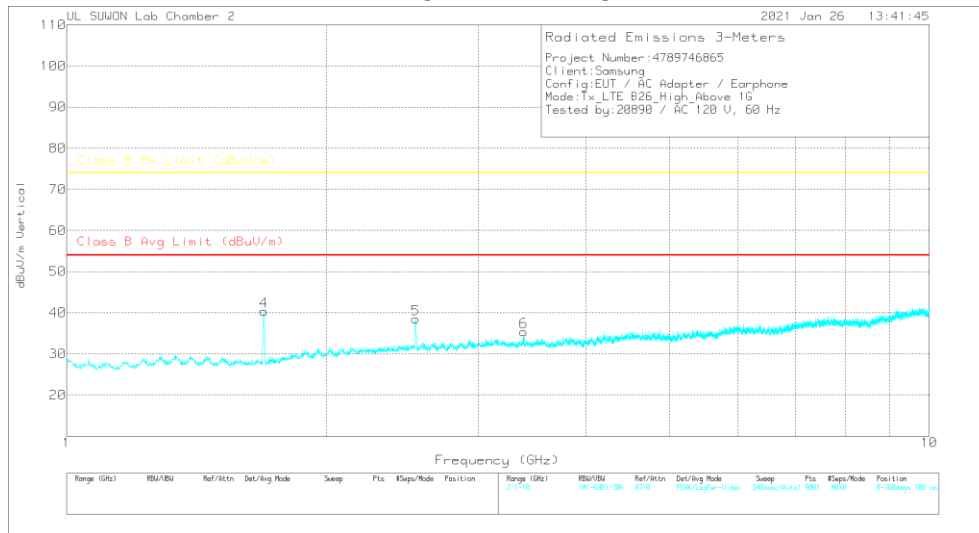
PK – Peak Detector

HIGH CHANNEL(892.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

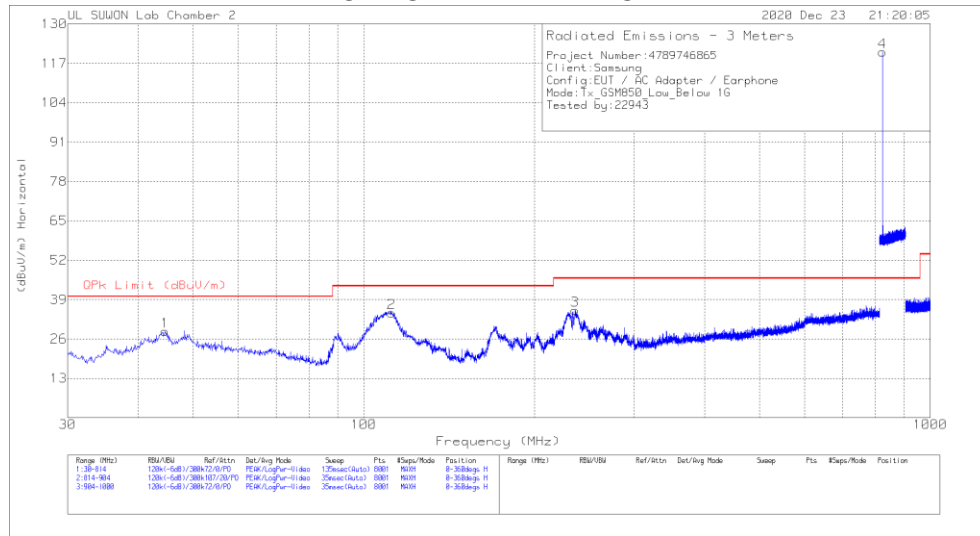
Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading dBu/m	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.693	45.18	PK	28.7	-31.2	-7	43.38	-	-	74	-30.62	0-360	100	H
2	2.539	33.64	PK	32.1	-30	-7	36.44	-	-	74	-37.56	0-360	200	H
3	3.388	29.32	PK	32.7	-29.1	-7	33.62	-	-	74	-40.38	0-360	100	H
4	1.693	42.21	PK	28.7	-31.2	-7	40.41	-	-	74	-33.59	0-360	200	V
5	2.539	35.72	PK	32.1	-30	-7	38.52	-	-	74	-35.48	0-360	200	V
6	3.39	31.29	PK	32.7	-29.3	-7	35.39	-	-	74	-38.61	0-360	100	V

PK – Peak Detector

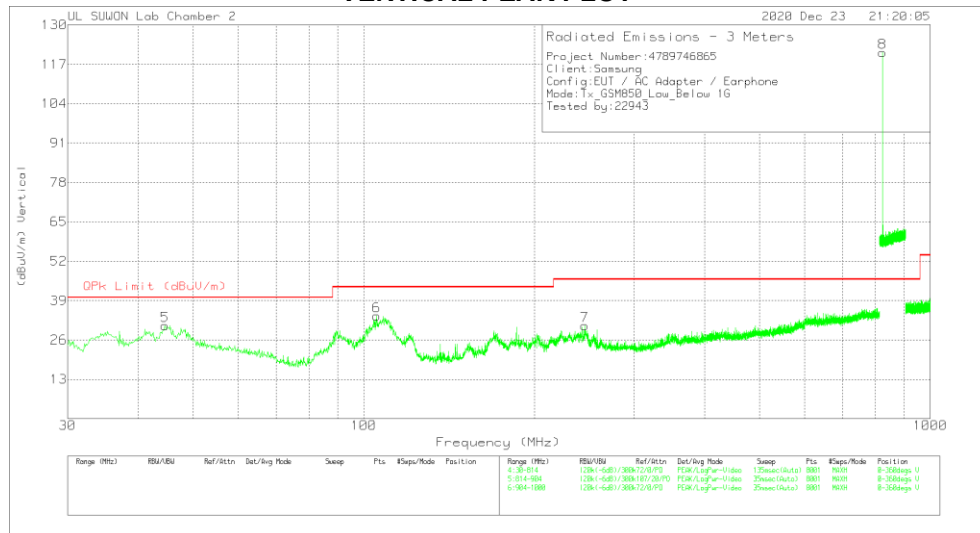
7.5. Below 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

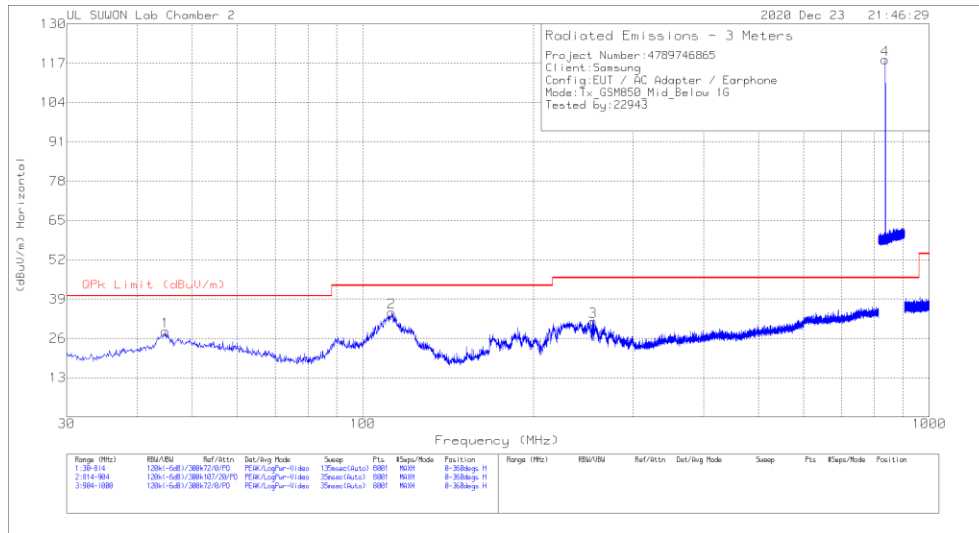
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	44.602	8.06	Pk	19.6	.9	28.56	40	-11.44	0-360	400	H
2	112.026	17	Pk	16.4	1.2	34.6	43.52	-8.92	0-360	300	H
3	235.898	15.74	Pk	18	1.7	35.44	46.02	-10.58	0-360	100	H
4	824.1363	90.79	Pk	26.7	3.3	120.79	46.02	74.77	0-360	100	H
5	44.602	10.27	Pk	19.6	.9	30.77	40	-9.23	0-360	100	V
6	105.264	15.22	Pk	17.6	1.2	34.02	43.52	-9.5	0-360	100	V
7	245.698	10.6	Pk	18.4	1.8	30.8	46.02	-15.22	0-360	200	V
8	824.2713	90.98	Pk	26.7	3.2	120.88	46.02	74.86	0-360	200	V

Pk - Peak detector

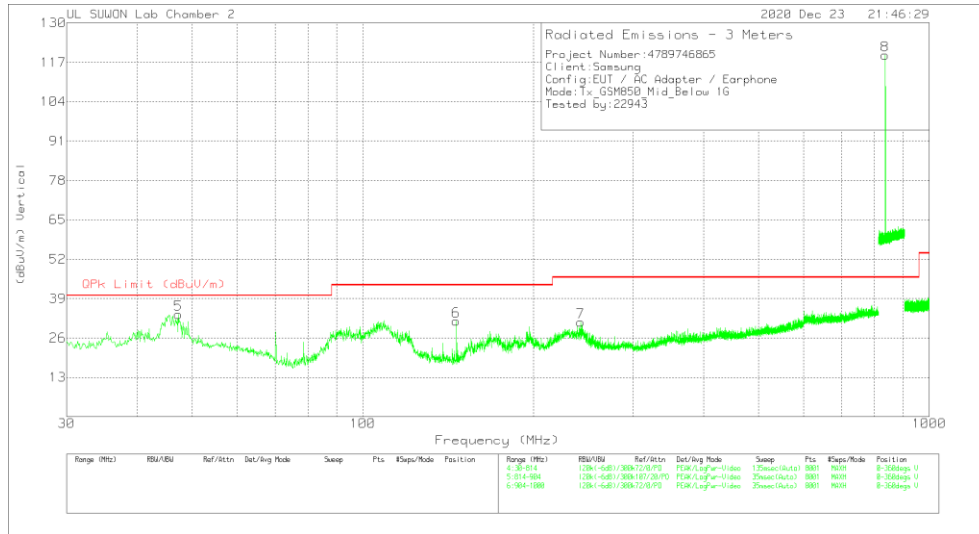
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

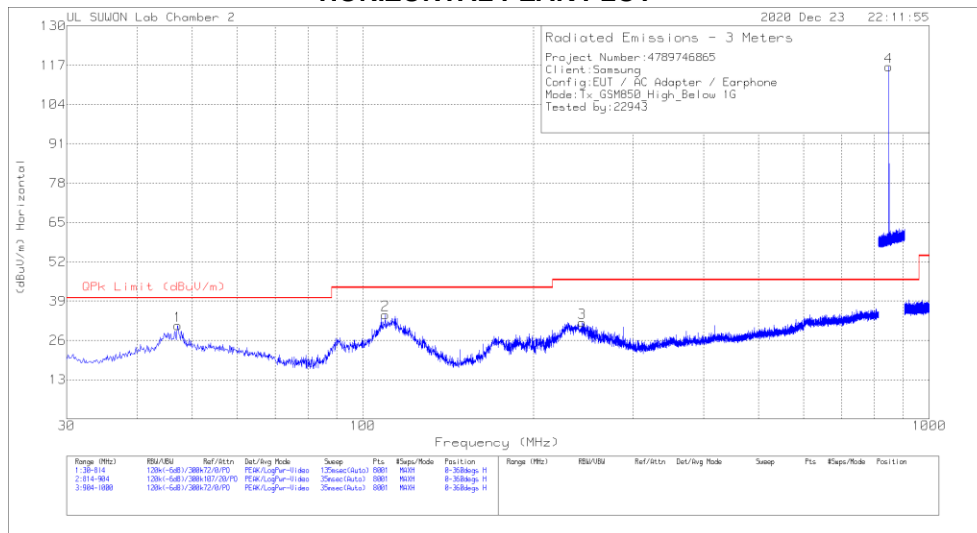
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	44.798	8.01	Pk	19.6	.7	28.31	40	-11.69	0-360	400	H
2	112.418	17.06	Pk	16.4	1.2	34.66	43.52	-8.86	0-360	300	H
3	254.91	11.28	Pk	18.4	1.9	31.58	46.02	-14.44	0-360	100	H
4	836.6688	88.03	Pk	26.9	3.3	118.23	46.02	72.21	0-360	100	H
5	47.248	13.19	Pk	19.8	.8	33.79	40	-6.21	0-360	100	V
6	146.13	16.58	Pk	13.7	1.3	31.58	43.52	-11.94	0-360	100	V
7	242.464	11.24	Pk	18.3	1.7	31.24	46.02	-14.78	0-360	200	V
8	836.59	89.21	Pk	26.9	3.2	119.31	46.02	73.29	0-360	200	V

Pk - Peak detector

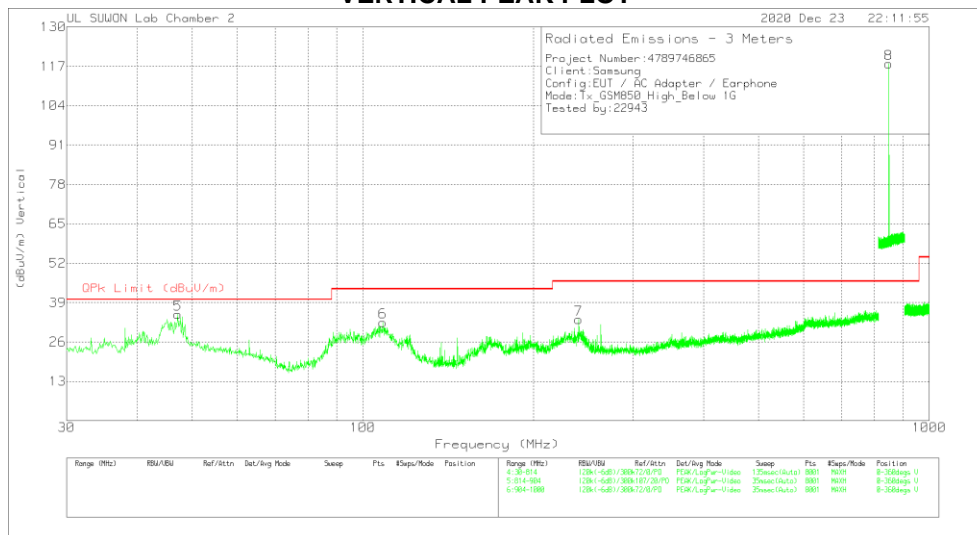
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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	47.15	10.25	Pk	19.8	.8	30.85	40	-9.15	0-360	400	H
2	109.576	16.35	Pk	17	1.2	34.55	43.52	-8.97	0-360	300	H
3	244.032	11.57	Pk	18.4	1.9	31.87	46.02	-14.15	0-360	100	H
4	848.8075	85.96	Pk	27.3	3.3	116.56	46.02	70.54	0-360	100	H
5	47.15	14.47	Pk	19.8	.8	35.07	40	-4.93	0-360	100	V
6	108.498	14.02	Pk	17.3	1.2	32.52	43.52	-11	0-360	100	V
7	240.602	13.53	Pk	18.2	1.7	33.43	46.02	-12.59	0-360	200	V
8	848.7963	87.21	Pk	27.3	3.3	117.81	46.02	71.79	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
47.15	7.4	Qp	19.8	.8	28	40	-12	240	123	V

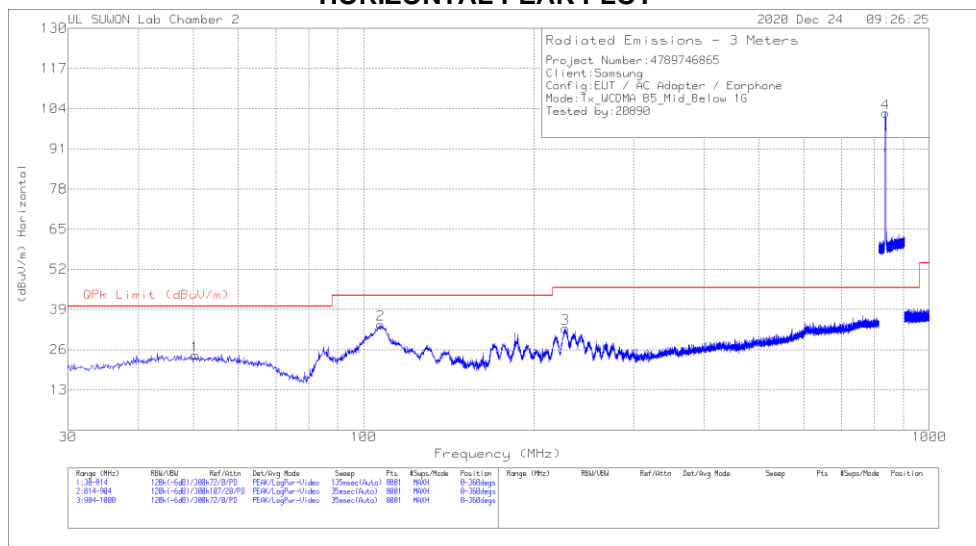
Qp - Quasi-Peak detector

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

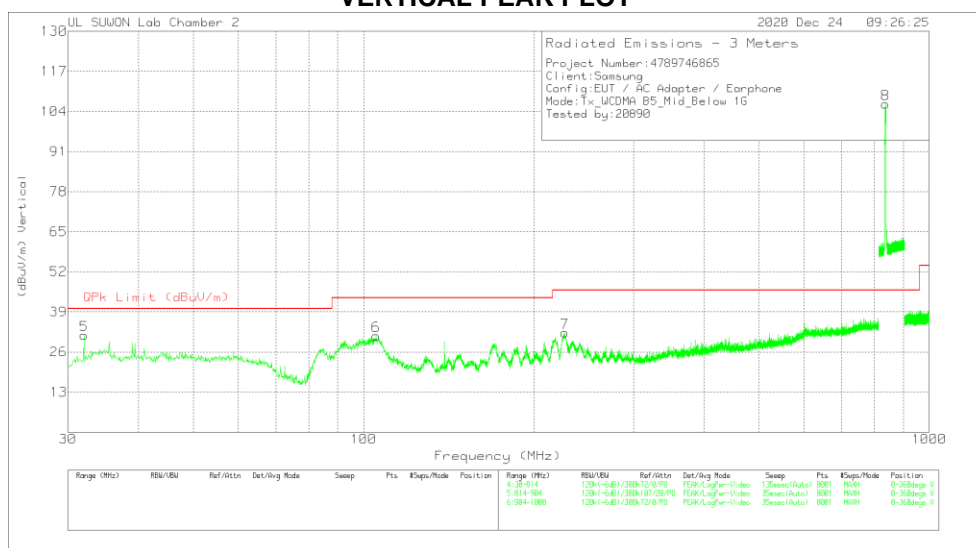
7.6. Below 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	50.384	3.43	Pk	19.9	.9	24.23	40	-15.77	0-360	300	H
2	107.224	15.54	Pk	17.4	1.2	34.14	43.52	-9.38	0-360	300	H
3	227.47	13.64	Pk	17.4	1.8	32.84	46.02	-13.18	0-360	100	H
4	837.6025	72.22	Pk	27	3.3	102.52	46.02	56.5	0-360	100	H
5	32.058	15.49	Pk	15.4	.6	31.49	40	-8.51	0-360	200	V
6	105.264	12.48	Pk	17.6	1.2	31.28	43.52	-12.24	0-360	100	V
7	226.98	13.17	Pk	17.4	1.7	32.27	46.02	-13.75	0-360	200	V
8	837.1975	76.19	Pk	26.9	3.3	106.39	46.02	60.37	0-360	200	V

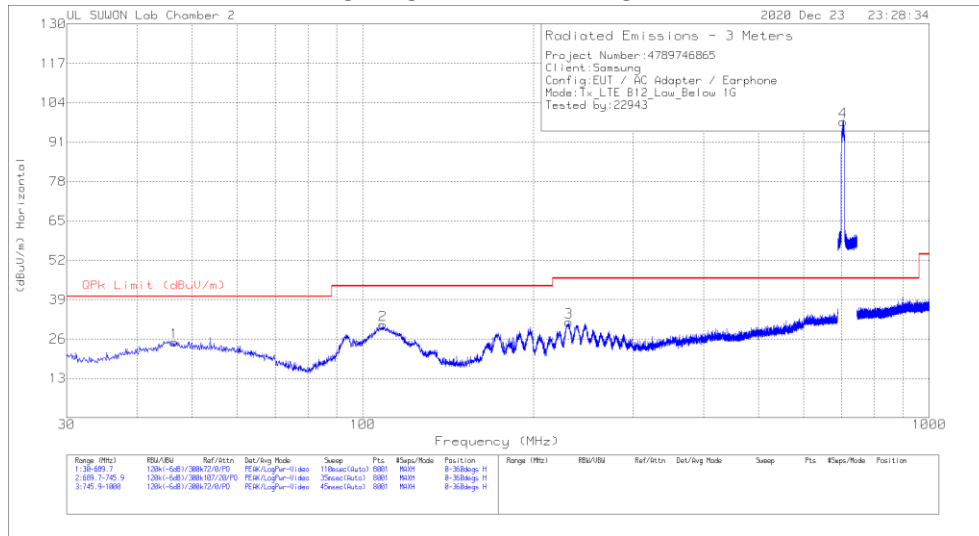
Pk - Peak detector

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

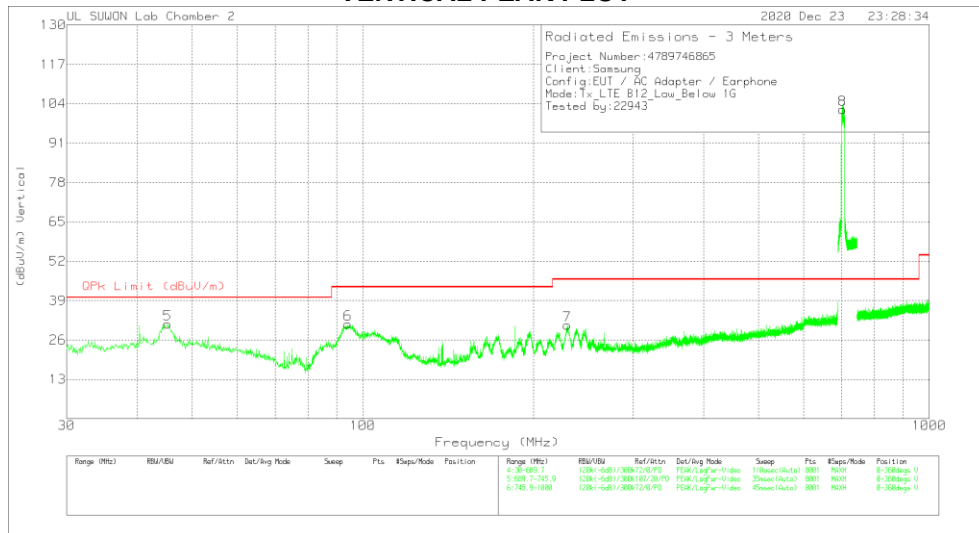
7.7. Below 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

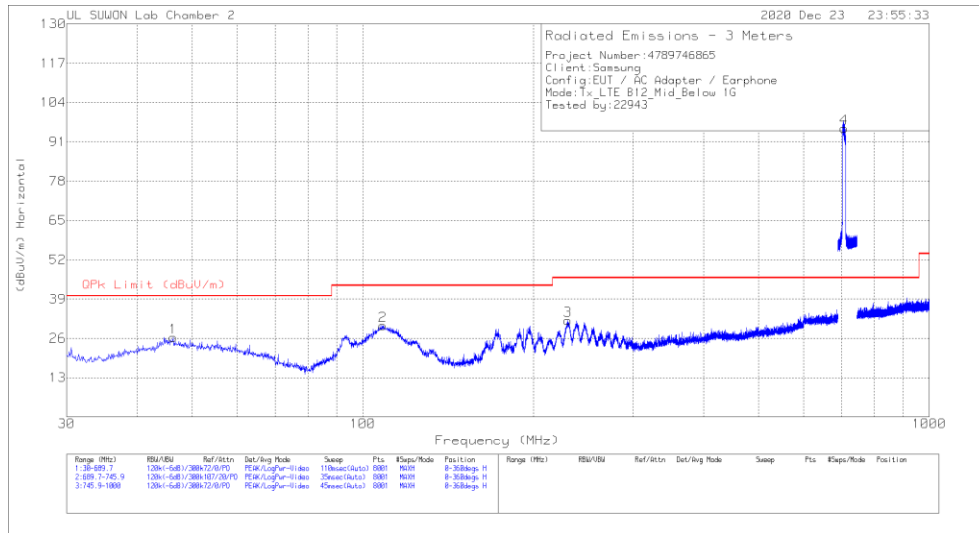
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	46.4101	4.56	Pk	19.7	.7	24.96	40	-15.04	0-360	400	H
2	108.4223	12.08	Pk	17.3	1.3	30.68	43.52	-12.84	0-360	300	H
3	230.8799	12.25	Pk	17.7	1.7	31.65	46.02	-14.37	0-360	100	H
4	704.6703	69.36	Pk	25.5	2.9	97.76	46.02	51.74	0-360	100	H
5	45.2557	10.91	Pk	19.6	.8	31.31	40	-8.69	0-360	100	V
6	94.0738	13.71	Pk	16.4	1.1	31.21	43.52	-12.31	0-360	100	V
7	229.7254	11.67	Pk	17.6	1.7	30.97	46.02	-15.05	0-360	100	V
8	703.743	73.53	Pk	25.5	3	102.03	46.02	56.01	0-360	100	V

Pk - Peak detector

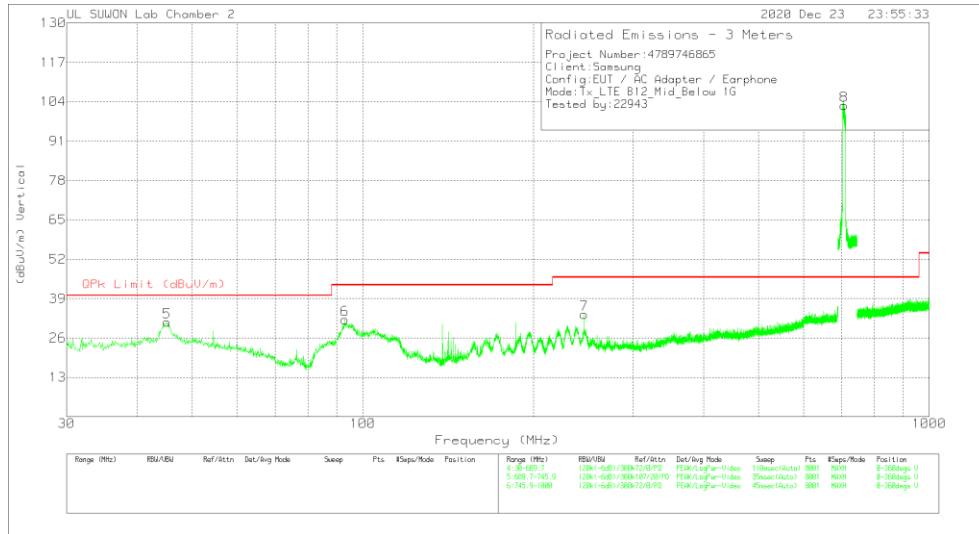
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

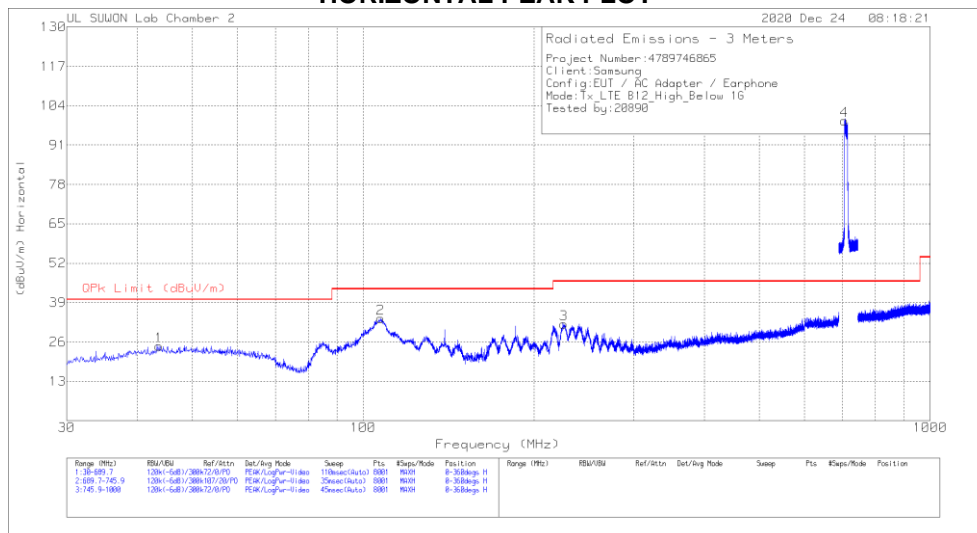
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	46.2452	5.86	Pk	19.7	.7	26.26	40	-13.74	0-360	400	H
2	108.4223	11.67	Pk	17.3	1.3	30.27	43.52	-13.25	0-360	300	H
3	229.9728	12.65	Pk	17.6	1.6	31.85	46.02	-14.17	0-360	100	H
4	707.67	66.88	Pk	25.6	3	95.48	46.02	49.46	0-360	100	H
5	45.0907	10.86	Pk	19.6	.8	31.26	40	-8.74	0-360	100	V
6	93.0017	14.85	Pk	16.2	1	32.05	43.52	-11.47	0-360	100	V
7	246.1355	13.61	Pk	18.4	1.8	33.81	46.02	-12.21	0-360	200	V
8	707.8667	74.16	Pk	25.6	3	102.76	46.02	56.74	0-360	100	V

Pk - Peak detector

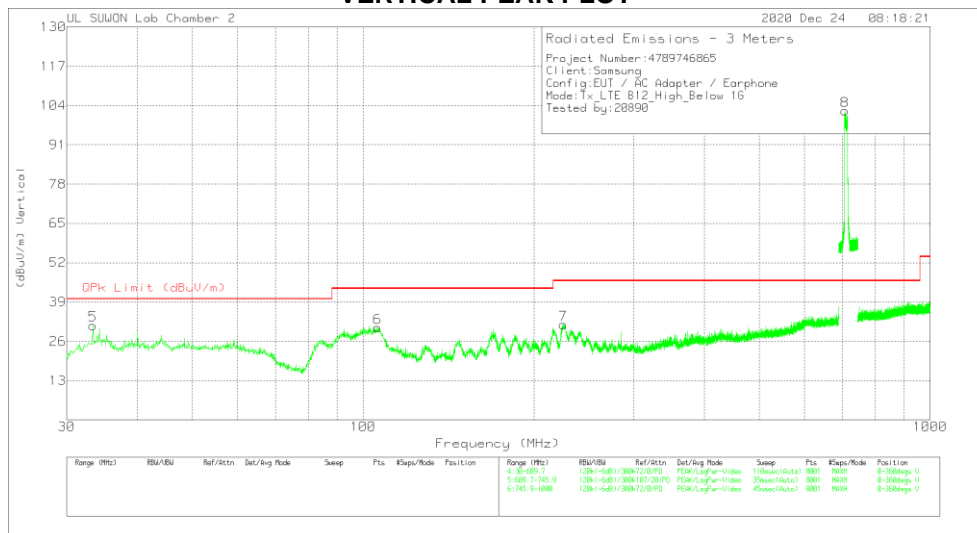
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(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	43.6064	4.47	Pk	19.4	.8	24.67	40	-15.33	0-360	400	H
2	107.3503	15.23	Pk	17.4	1.2	33.83	43.52	-9.69	0-360	300	H
3	225.7672	12.8	Pk	17.3	1.8	31.9	46.02	-14.12	0-360	100	H
4	706.6724	70.55	Pk	25.5	3	99.05	46.02	53.03	0-360	100	H
5	33.381	15.13	Pk	15.8	.4	31.33	40	-8.67	0-360	100	V
6	106.0309	11.87	Pk	17.5	1.2	30.57	43.52	-12.95	0-360	100	V
7	225.2724	12.47	Pk	17.3	1.8	31.57	46.02	-14.45	0-360	200	V
8	707.5997	73.71	Pk	25.6	3	102.31	46.02	56.29	0-360	100	V

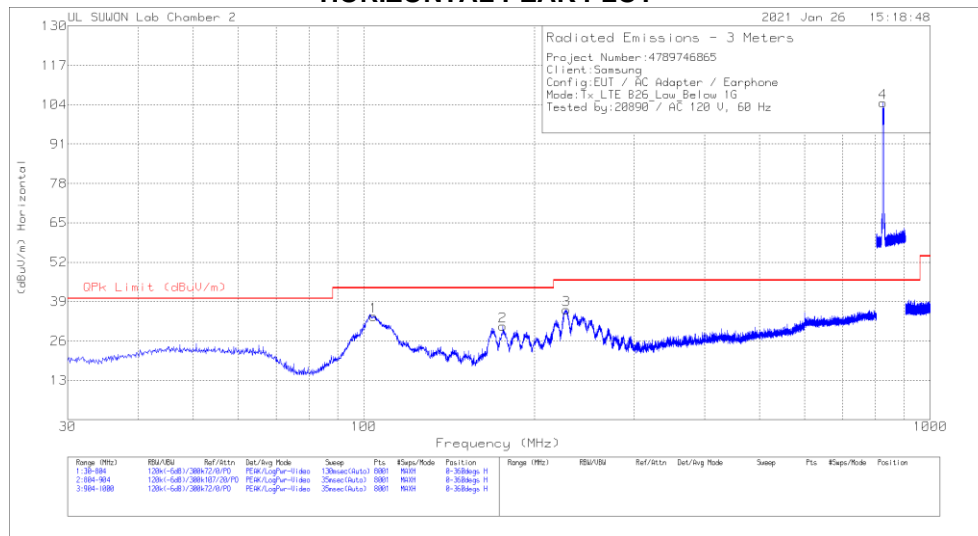
Pk - Peak detector

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

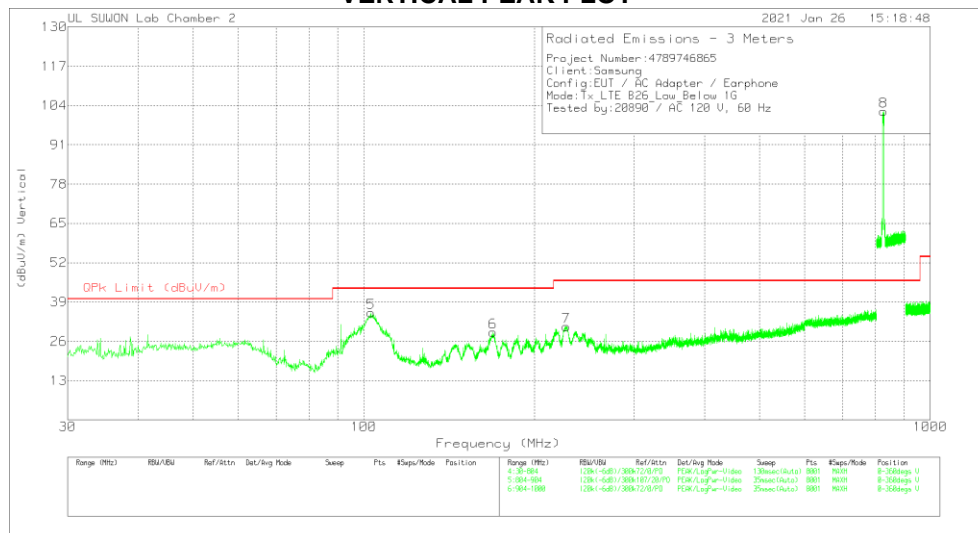
7.8. Below 1 GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

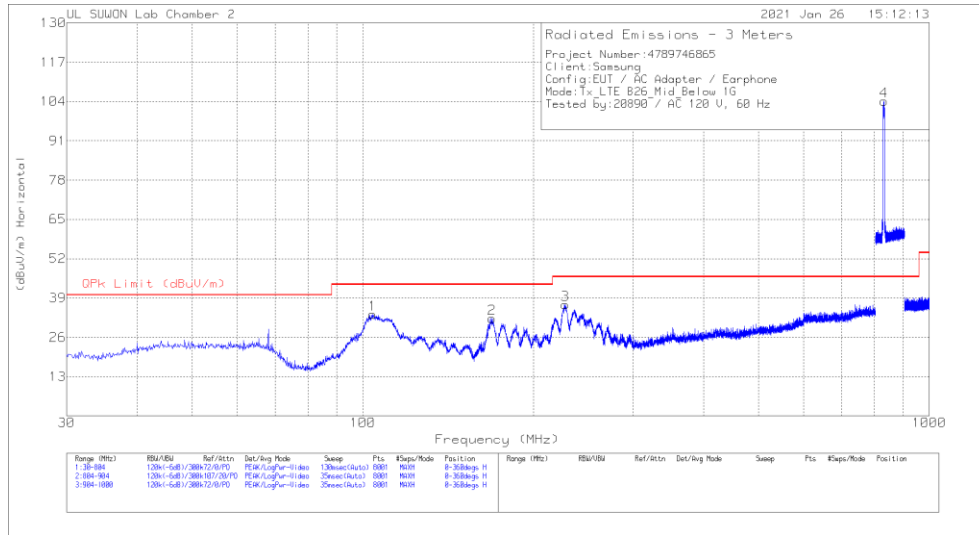
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	104.1105	15.48	Pk	17.6	1.1	34.18	43.52	-9.34	0-360	300	H
2	175.9958	14.26	Pk	14.9	1.7	30.86	43.52	-12.66	0-360	200	H
3	227.757	17.09	Pk	17.5	1.7	36.29	46.02	-9.73	0-360	100	H
4	824.925	74.8	Pk	26.7	3.2	104.7	46.02	58.68	0-360	100	H
5	102.9495	16.74	Pk	17.6	1.2	35.54	43.52	-7.98	0-360	100	V
6	168.933	13.04	Pk	14.5	1.5	29.04	43.52	-14.48	0-360	100	V
7	227.5635	11.56	Pk	17.5	1.8	30.86	46.02	-15.16	0-360	100	V
8	827.775	71.99	Pk	26.8	3.3	102.09	46.02	56.07	0-360	100	V

Pk - Peak detector

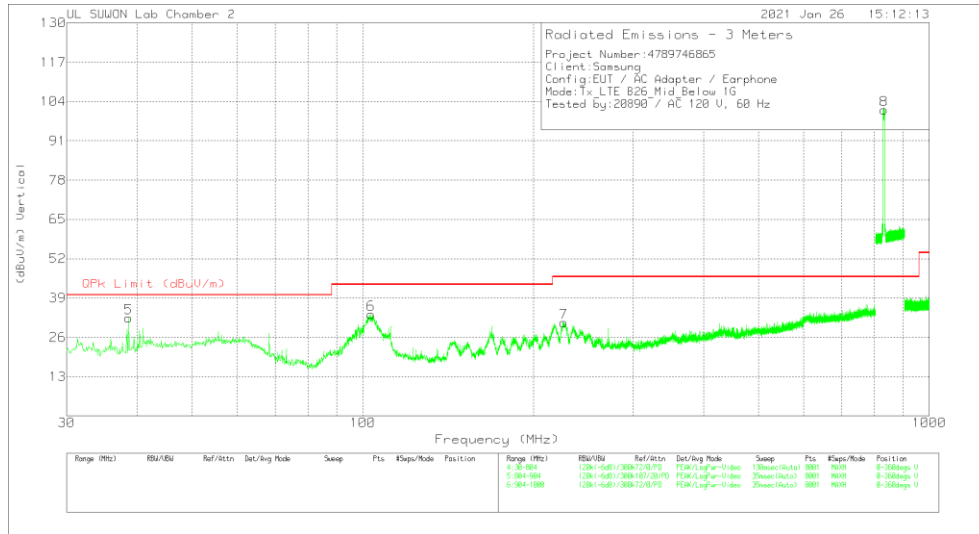
Note: Unwanted emissions captured from 814MHz to 849MHz and from 859MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

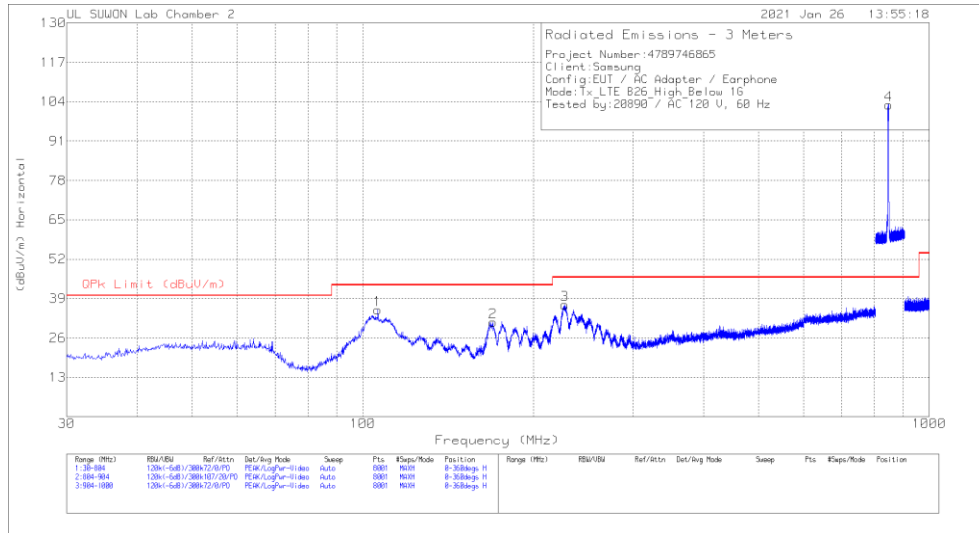
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	104.1105	14.93	Pk	17.6	1.1	33.63	43.52	-9.89	0-360	300	H
2	169.0298	16.31	Pk	14.5	1.5	32.31	43.52	-11.21	0-360	200	H
3	227.757	17.6	Pk	17.5	1.7	36.8	46.02	-9.22	0-360	100	H
4	832.3	74.02	Pk	26.8	3.3	104.12	46.02	58.1	0-360	100	H
5	38.6108	13.57	Pk	18.1	.8	32.47	40	-7.53	0-360	100	V
6	103.3365	14.97	Pk	17.6	1.1	33.67	43.52	-9.85	0-360	100	V
7	226.4993	11.79	Pk	17.4	1.7	30.89	46.02	-15.13	0-360	100	V
8	832.5	71.19	Pk	26.9	3.2	101.29	46.02	55.27	0-360	200	V

Pk - Peak detector

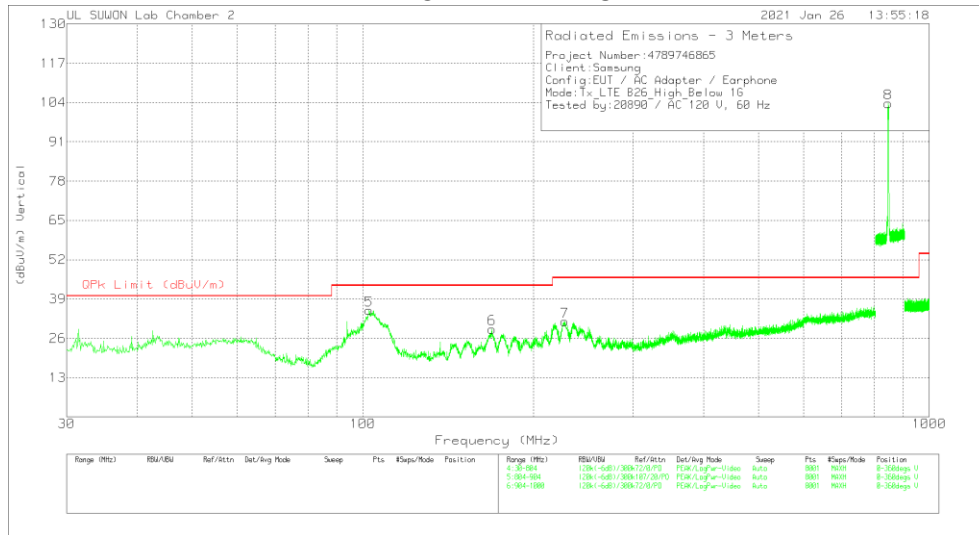
Note: Unwanted emissions captured from 814MHz to 849MHz and from 859MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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 (Degs)	Height (cm)	Polarity
1	106.3358	16.58	Pk	17.5	1.2	35.28	43.52	-8.24	0-360	300	H
2	169.707	15.4	Pk	14.5	1.4	31.3	43.52	-12.22	0-360	200	H
3	227.1765	17.93	Pk	17.4	1.6	36.93	46.02	-9.09	0-360	100	H
4	847.5375	72.28	Pk	27.3	3.3	102.88	46.02	56.86	0-360	100	H
5	102.5625	16.58	Pk	17.6	1.2	35.38	43.52	-8.14	0-360	100	V
6	168.933	13.13	Pk	14.5	1.5	29.13	43.52	-14.39	0-360	100	V
7	227.0798	12.4	Pk	17.4	1.8	31.6	46.02	-14.42	0-360	200	V
8	846.3	73.2	Pk	27.2	3.3	103.7	46.02	57.68	0-360	100	V

Pk - Peak detector

Note: Unwanted emissions captured from 814MHz to 849MHz and from 859MHz to 894MHz were the TX and RX signals generated from the call-simulator.

END OF TEST REPORT