



CERTIFICATION TEST REPORT

Report Number. : 4789754188-E1V1

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

Model : SCG10

FCC ID : A3LSMG996JPN

EUT Description : GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, UWB,
WPT and NFC

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

Date Of Issue:
February 05, 2021

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION.....	6
4.2. SAMPLE CALCULATION.....	6
4.3. MEASUREMENT UNCERTAINTY	6
4.4. DECISION RULE	6
5. EQUIPMENT UNDER TEST	7
5.1. DESCRIPTION OF EUT.....	7
5.2. TEST MODE.....	7
5.3. WORST-CASE ORIENTATION AND MODE.....	7
5.4. DESCRIPTION OF TEST SETUP.....	8
6. TEST AND MEASUREMENT EQUIPMENT	9
7. APPLICABLE LIMITS AND TEST RESULTS	10
7.1. Above 1 GHz in the GSM850.....	11
7.2. Above 1 GHz in the WCDMA Band 5.....	14
7.3. Above 1 GHz in the LTE Band 5	15
7.4. Above 1 GHz in the LTE Band 12	18
7.5. Above 1 GHz in the LTE Band 13	21
7.6. Below 1 GHz in the GSM850.....	22
7.7. Below 1 GHz in the WCDMA Band 5.....	25
7.8. Below 1 GHz in the LTE Band 5.....	26
7.9. Below 1 GHz in the LTE Band 12.....	29
7.10. Below 1 GHz in the LTE Band 13.....	32

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/ax, UWB, WPT and NFC
MODEL NUMBER: SCG10
SERIAL NUMBER: R3CNC02XC1F (RADIATED)
DATE TESTED: JAN 14, 2021 –JAN 15, 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/ax, UWB, WPT and NFC. This test report addresses the WWAN receiver 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)

5.3. WORST-CASE ORIENTATION AND MODE

For GSM850 / WCDMA B5 / LTE B5 / LTE B12 / LTE B13, 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.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

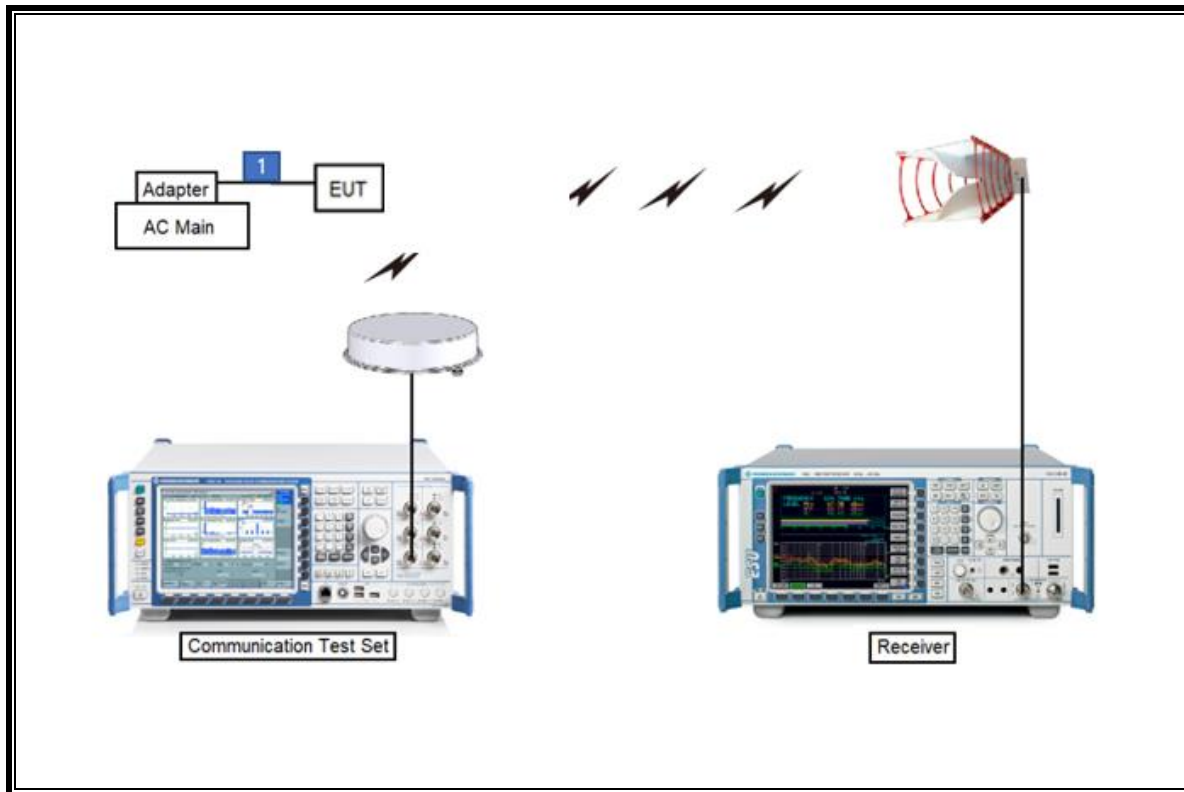
I/O CABLE

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

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:

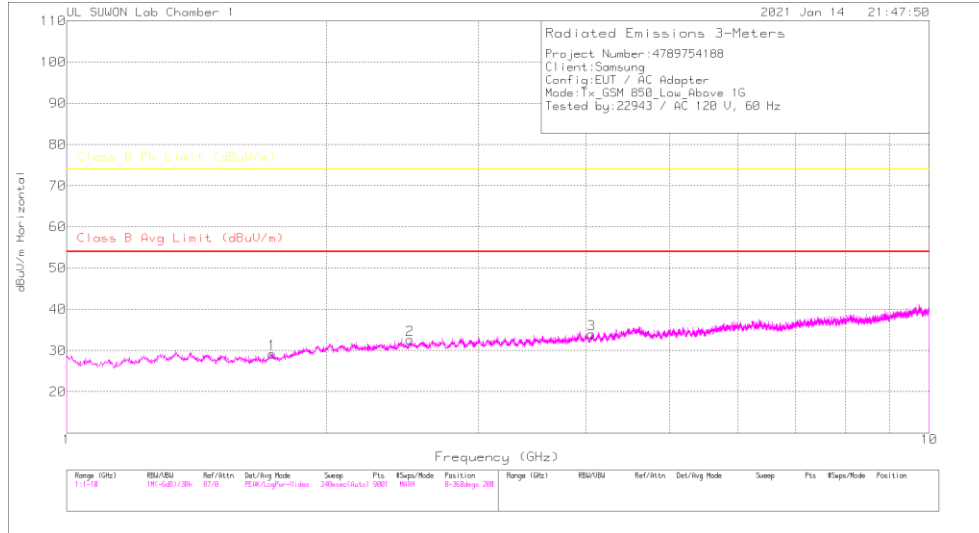
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

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

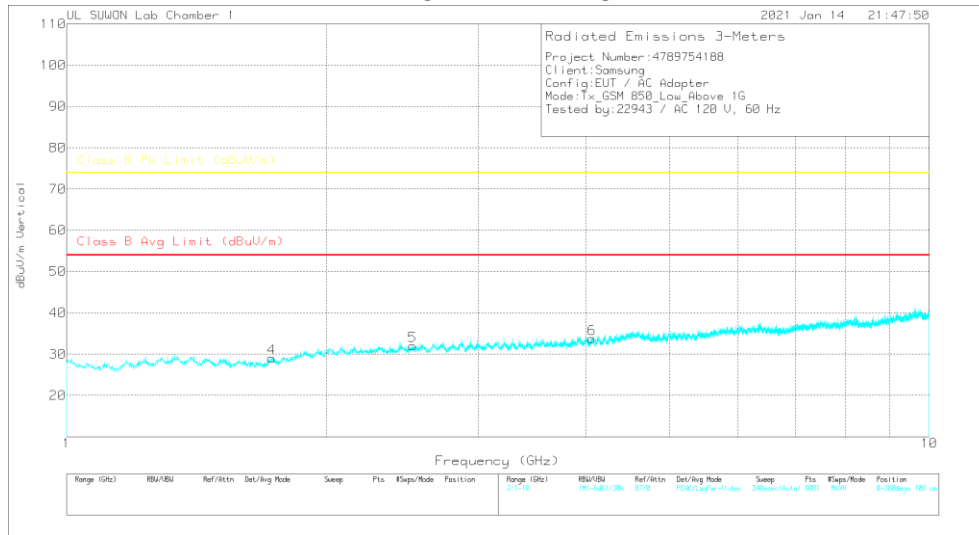
7.1. Above 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

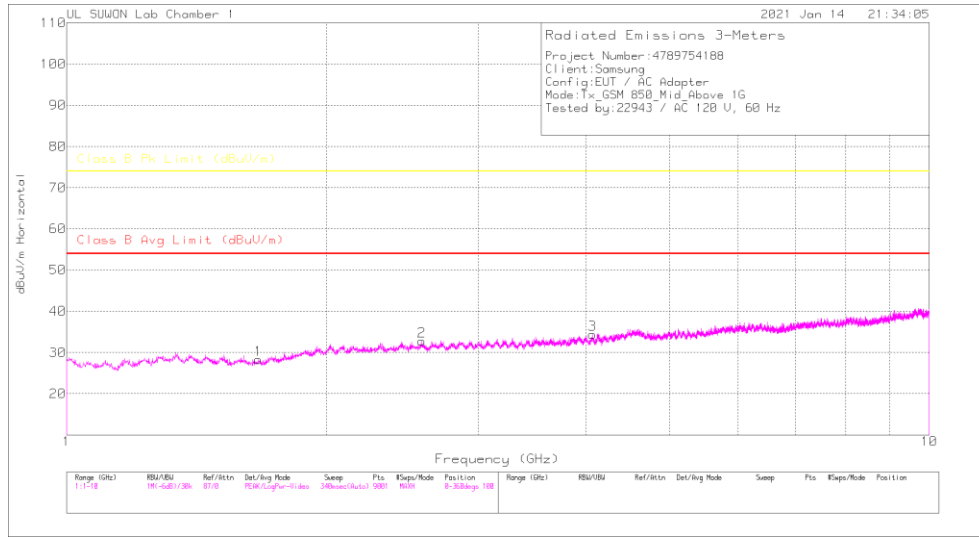
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18Hz(dB)	1GHz_HPF	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(DISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.731	36.01	PK	28.8	-36.4	.8	29.21	-	-	74	-44.79	0-360	100	H
2	2.501	36.06	PK	32	-34.9	.5	32.66	-	-	74	-41.34	0-360	200	H
3	4.061	32.82	PK	33.5	-32.7	.4	34.02	-	-	74	-39.98	0-360	200	H
4	1.729	35.88	PK	28.8	-36.4	.8	29.08	-	-	74	-44.92	0-360	100	V
5	2.517	34.36	PK	32	-34.9	.6	32.06	-	-	74	-41.94	0-360	100	V
6	4.067	32.54	PK	33.5	-32.7	.4	33.74	-	-	74	-40.26	0-360	100	V

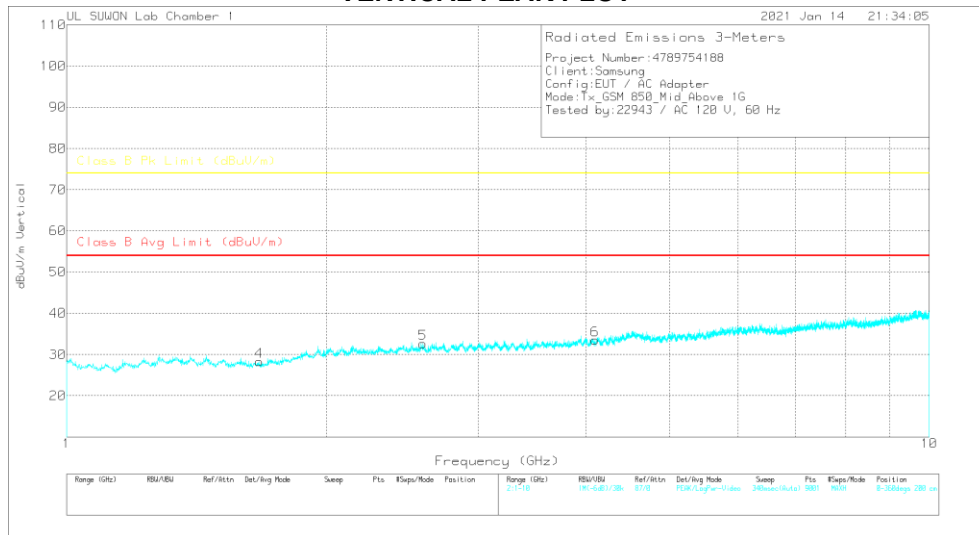
PK-Peak Detector

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

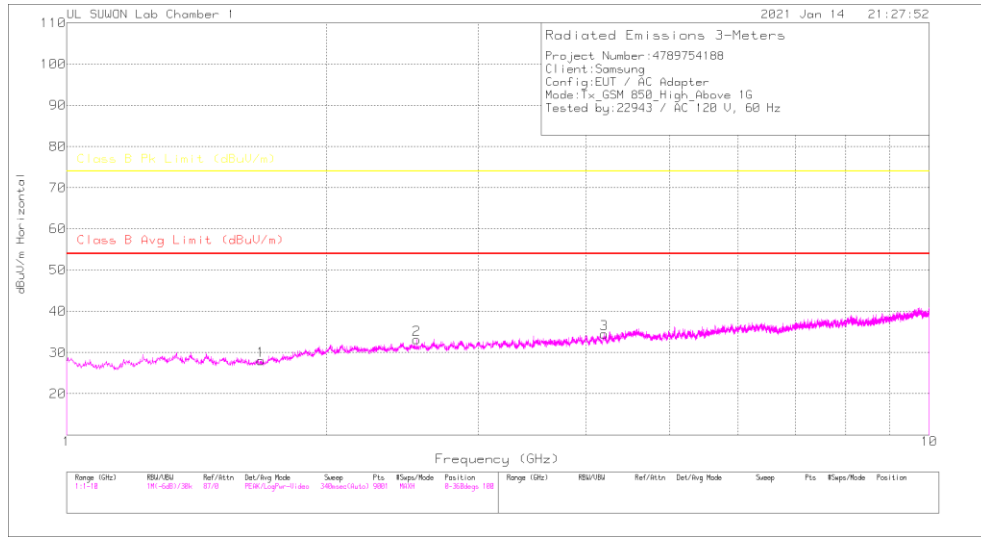
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	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	1.688	35.63	PK	29.5	-36.6	.5	28.23	-	-	74	-45.77	0-360	100	H
2	2.582	35.02	PK	32.1	-35	.7	32.82	-	-	74	-41.18	0-360	100	H
3	4.068	33.17	PK	33.5	-32.7	.4	34.37	-	-	74	-39.63	0-360	200	H
4	1.673	35.84	PK	28.5	-36.6	.5	28.24	-	-	74	-45.76	0-360	100	V
5	2.586	34.75	PK	32.1	-34.9	.7	32.65	-	-	74	-41.35	0-360	200	V
6	4.097	32.36	PK	33.5	-32.7	.4	33.56	-	-	74	-40.44	0-360	200	V

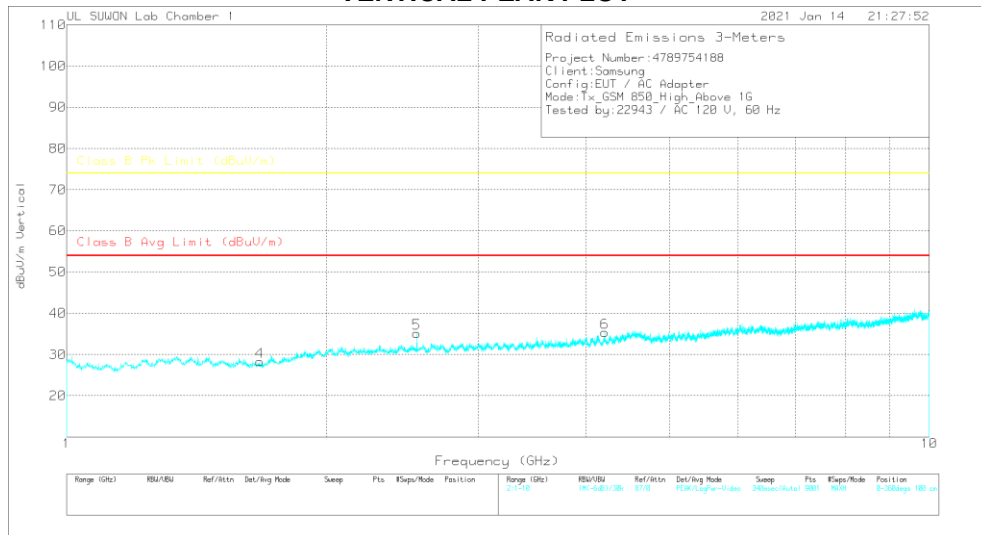
PK – Peak Detector

HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

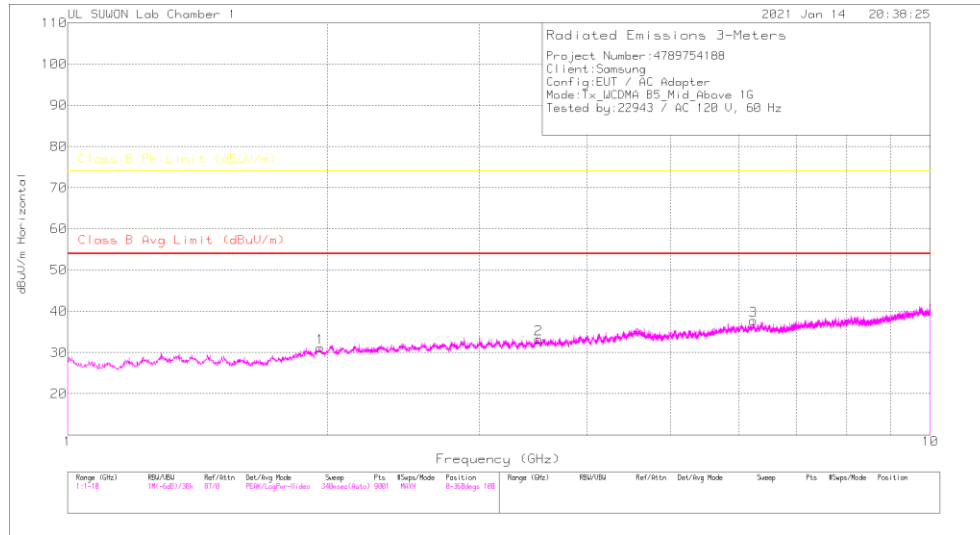
Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPFF	Corrected Reading (dBu/m)	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.68	35.68	PK	28.5	-36.6	.5	28.08	-	-	74	-45.92	0-360	100	H
2	2.546	35.23	PK	32	-34.8	.7	33.13	-	-	74	-40.87	0-360	100	H
3	4.201	33.05	PK	33.6	-32.5	.4	34.55	-	-	74	-39.45	0-360	100	H
4	1.674	35.87	PK	28.5	-36.6	.5	28.27	-	-	74	-45.73	0-360	100	V
5	2.546	37.29	PK	32	-34.8	.7	35.19	-	-	74	-38.81	0-360	100	V
6	4.207	34.03	PK	33.6	-32.6	.4	35.43	-	-	74	-38.57	0-360	200	V

PK – Peak Detector

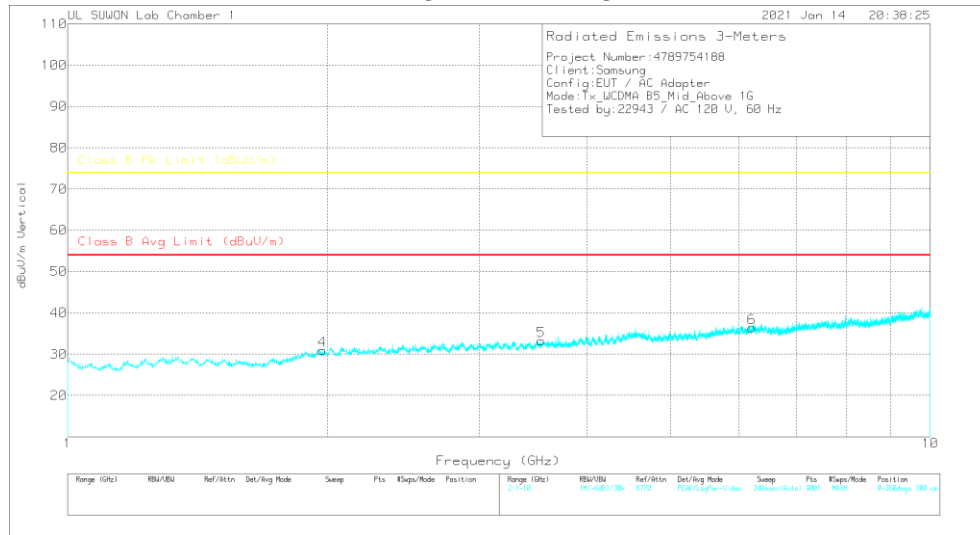
7.2. Above 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

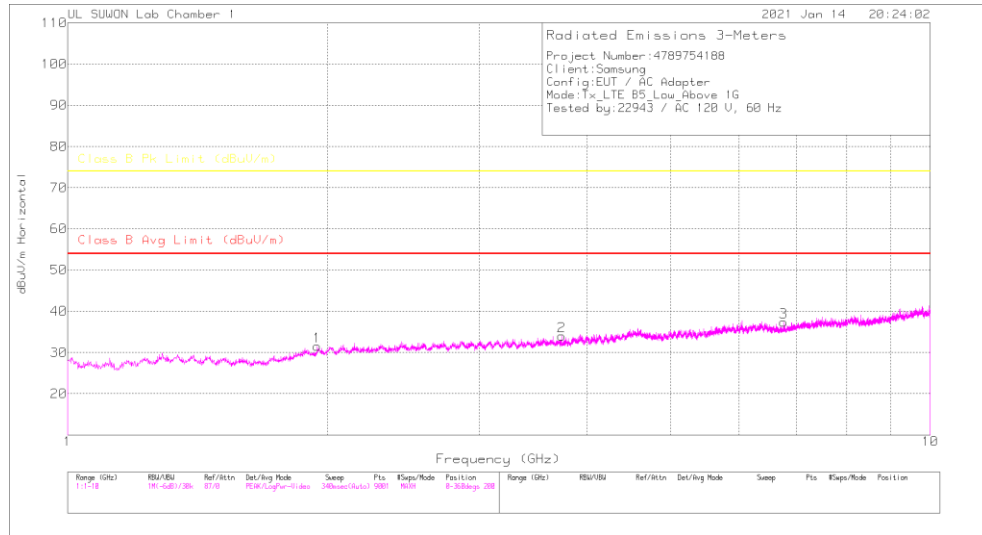
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPFF	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Asimuth (Degs)	Height (cm)	Polarity
1	1.964	35.47	PK	31.2	-36	.5	31.17	-	-	74	-42.83	0-360	200	H
2	3.514	33.16	PK	32.9	-33.4	.6	33.26	-	-	74	-40.74	0-360	100	H
3	6.236	31.84	PK	35.5	-30.1	.5	37.74	-	-	74	-36.26	0-360	200	H
4	1.973	35.08	PK	31.3	-36	.5	30.88	-	-	74	-43.12	0-360	200	V
5	3.54	33.11	PK	33	-33.5	.6	33.21	-	-	74	-40.79	0-360	100	V
6	6.208	30.55	PK	35.5	-30.2	.5	36.35	-	-	74	-37.65	0-360	200	V

PK – Peak Detector

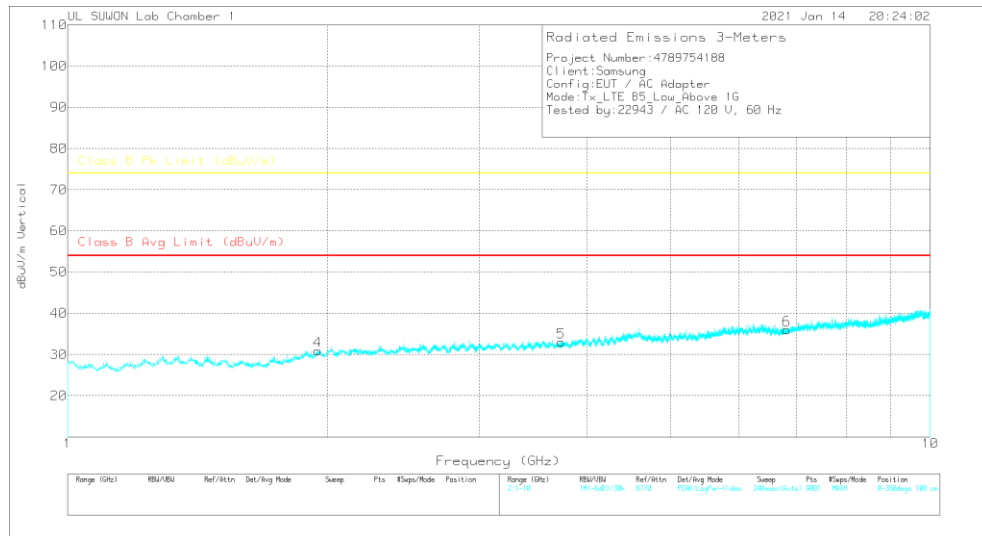
7.3. Above 1 GHz in the LTE Band 5

LOW CHANNEL(870.5MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

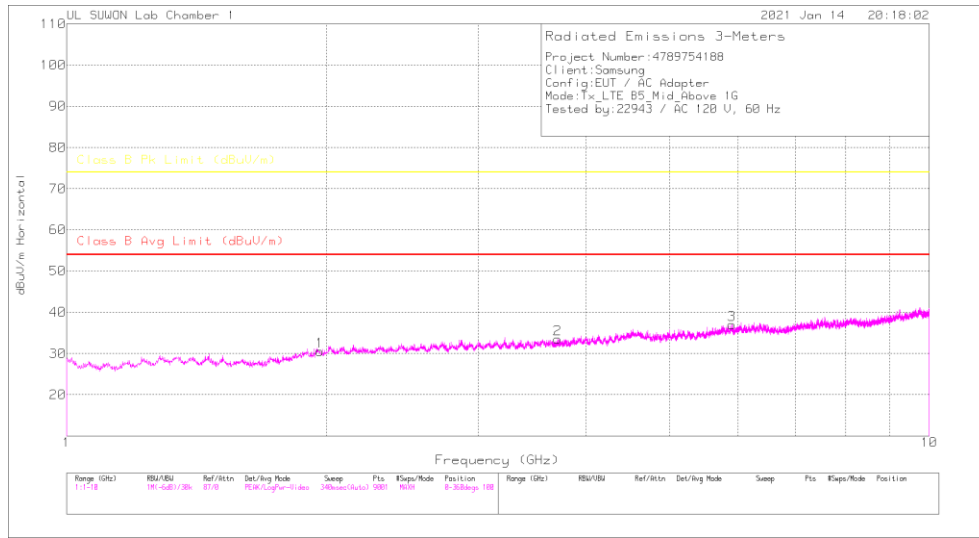
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-10GHz(dB)	1GHz_HPF	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	AviDISPRMargin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.947	35.87	PK	31.1	-36	.5	31.47	-	-	74	-42.53	0-360	200	H
2	3.737	33.91	PK	33	-33.4	.5	34.01	-	-	74	-39.99	0-360	100	H
3	6.762	30.52	PK	35.5	-29.1	.5	37.42	-	-	74	-36.58	0-360	200	H
4	1.949	35.3	PK	31.1	-36	.5	30.9	-	-	74	-43.1	0-360	200	V
5	3.734	33.03	PK	33	-33.5	.5	33.03	-	-	74	-40.97	0-360	200	V
6	6.813	29.12	PK	35.5	-29	.4	36.02	-	-	74	-37.98	0-360	100	V

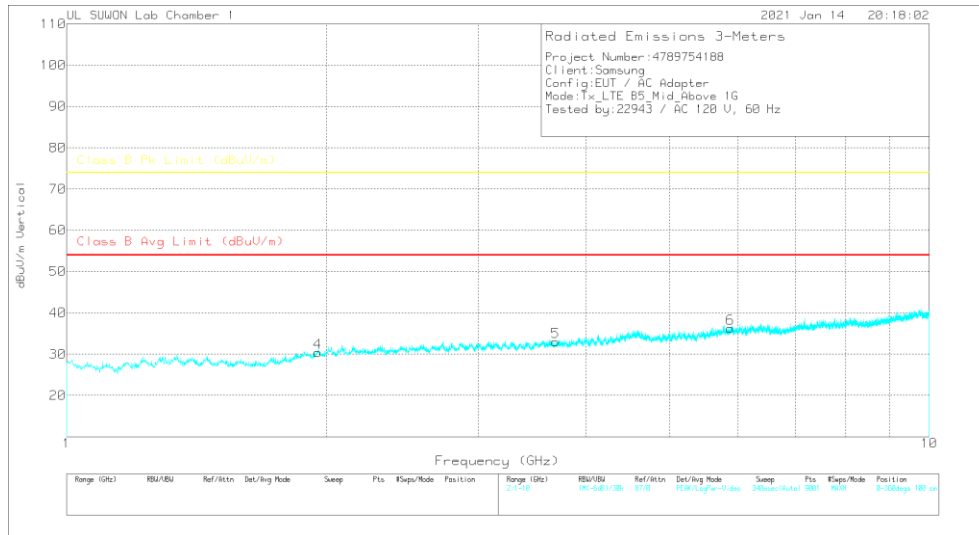
PK – Peak Detector

MID CHANNEL(881.5MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

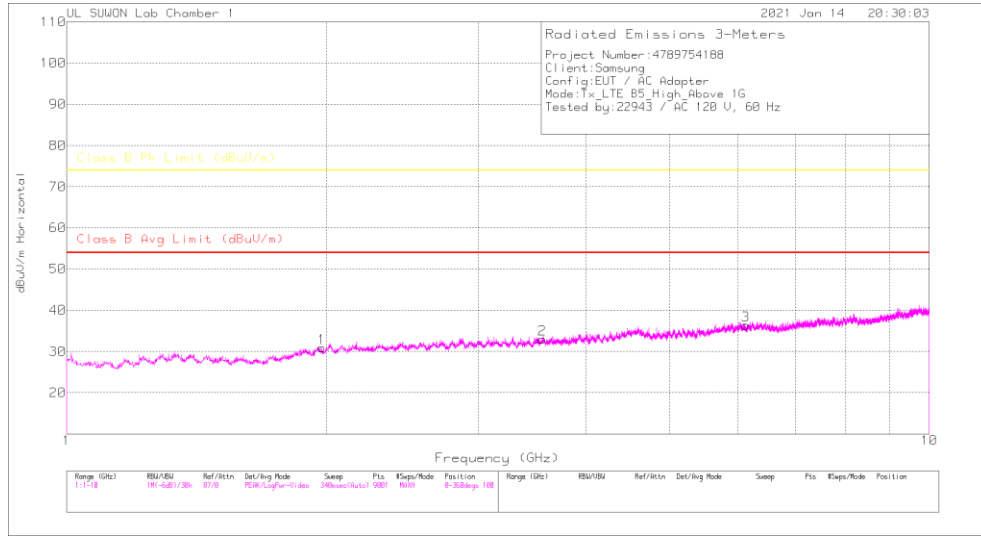
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(DISPR)(Margin (dB))	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.965	34.85	PK	31.2	-36	.5	30.55	-	-	74	-43.45	0-360	200	H
2	3.71	33.37	PK	33	-33.4	.5	33.47	-	-	74	-40.53	0-360	200	H
3	5.901	32.28	PK	35.1	-30.9	.5	36.98	-	-	74	-37.02	0-360	200	H
4	1.954	34.92	PK	31.1	-36.1	.5	30.42	-	-	74	-43.58	0-360	200	V
5	3.687	32.99	PK	33	-33.5	.5	32.99	-	-	74	-41.01	0-360	100	V
6	5.878	31.52	PK	35.1	-30.9	.5	36.22	-	-	74	-37.78	0-360	100	V

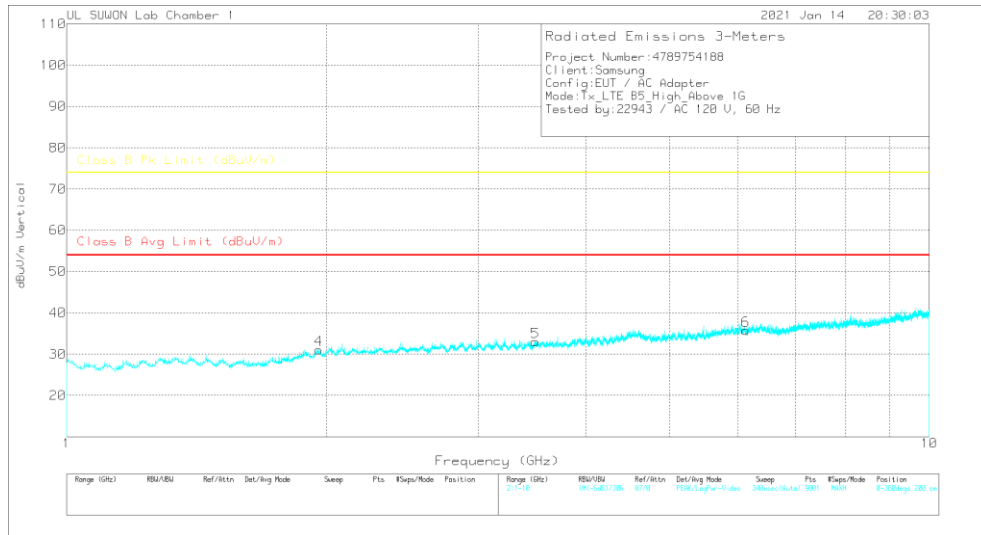
PK – Peak Detector

HIGH CHANNEL(892.5MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

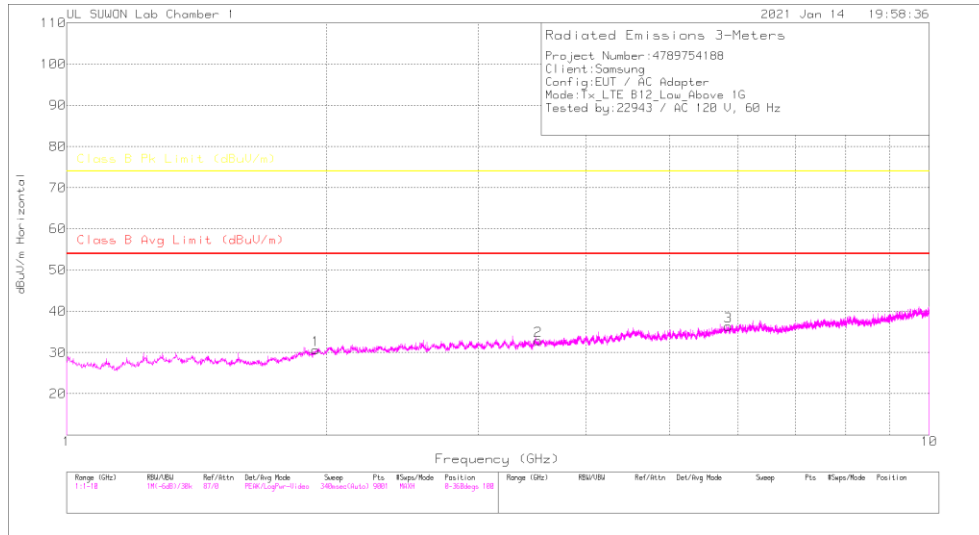
Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	Corrected Reading (dBu/m)	Class B Avg Limit (dBu/m)	Av(DISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.976	35.06	PK	31.3	-36	.5	30.86	-	-	74	-43.14	0-360	100	H
2	3.559	32.86	PK	33	-33.4	.6	33.06	-	-	74	-40.94	0-360	100	H
3	6.131	30.99	PK	35.4	-30.4	.4	36.39	-	-	74	-37.61	0-360	100	H
4	1.961	35.38	PK	31.2	-36	.5	31.08	-	-	74	-42.92	0-360	200	V
5	3.494	33.09	PK	32.8	-33.4	.5	32.99	-	-	74	-41.01	0-360	200	V
6	6.126	30.33	PK	35.4	-30.4	.4	35.73	-	-	74	-38.27	0-360	200	V

PK – Peak Detector

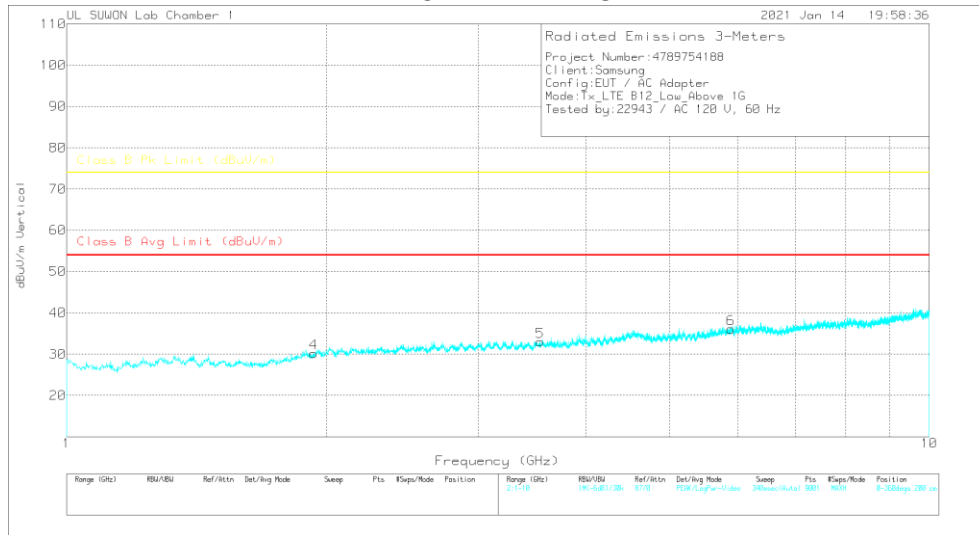
7.4. Above 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

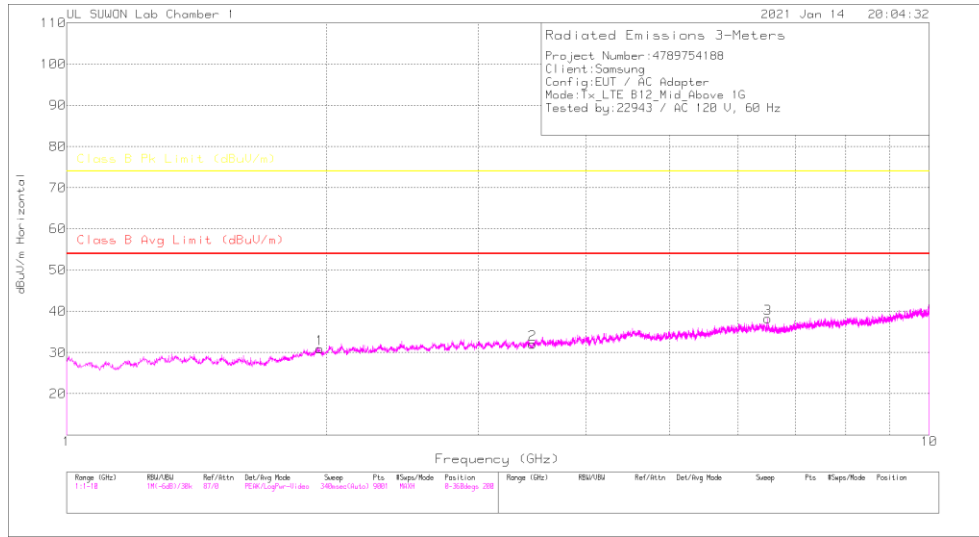
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(DISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.945	34.99	PK	31.1	-35.9	.5	30.69	-	-	74	-43.31	0-360	100	H
2	3.522	32.93	PK	32.9	-33.5	.6	32.93	-	-	74	-41.07	0-360	100	H
3	5.851	31.64	PK	35.1	-30.9	.5	36.34	-	-	74	-37.66	0-360	200	H
4	1.934	34.61	PK	31	-35.9	.5	30.21	-	-	74	-43.79	0-360	200	V
5	3.541	32.77	PK	33	-33.4	.6	32.97	-	-	74	-41.03	0-360	100	V
6	5.888	31.37	PK	35.1	-30.9	.5	36.07	-	-	74	-37.93	0-360	100	V

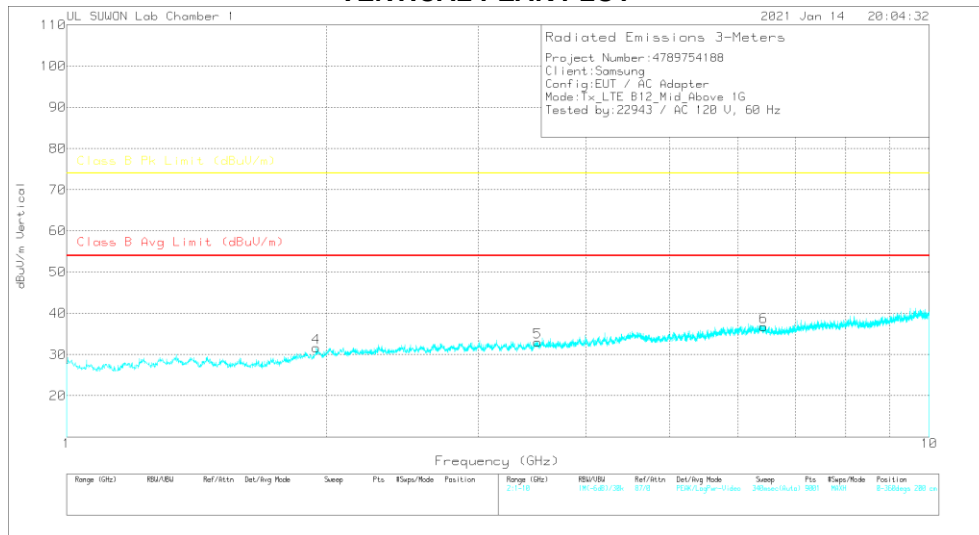
PK – Peak Detector

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

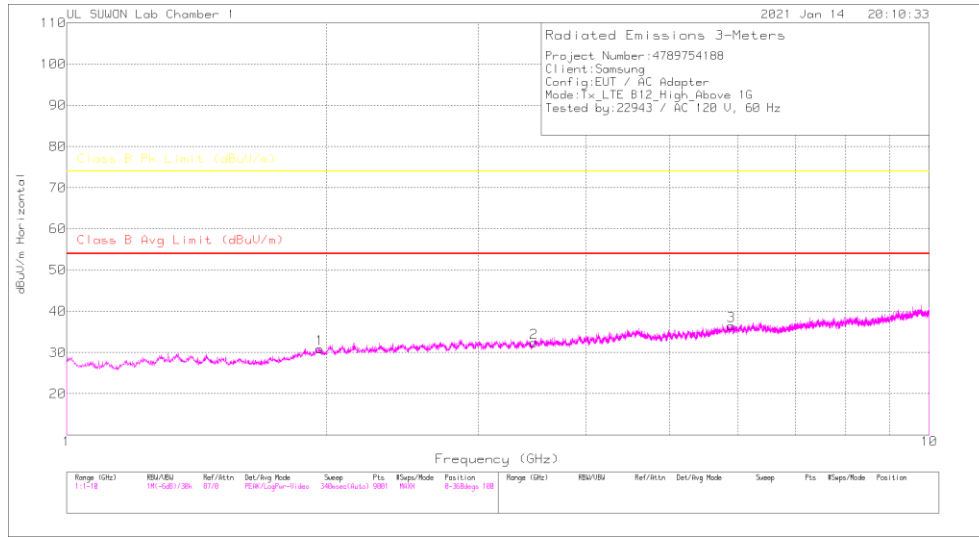
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	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	1.966	35.16	PK	31.2	-36	.5	30.86	-	-	74	-43.14	0-360	200	H
2	3.467	32.22	PK	32.7	-33.4	.5	32.02	-	-	74	-41.98	0-360	100	H
3	6.496	31.99	PK	35.4	-29.6	.4	38.19	-	-	74	-35.81	0-360	200	H
4	1.948	36.04	PK	31.1	-36	.5	31.64	-	-	74	-42.36	0-360	200	V
5	3.517	32.97	PK	32.9	-33.5	.6	32.97	-	-	74	-41.03	0-360	200	V
6	6.431	30.68	PK	35.5	-29.8	.4	36.78	-	-	74	-37.22	0-360	200	V

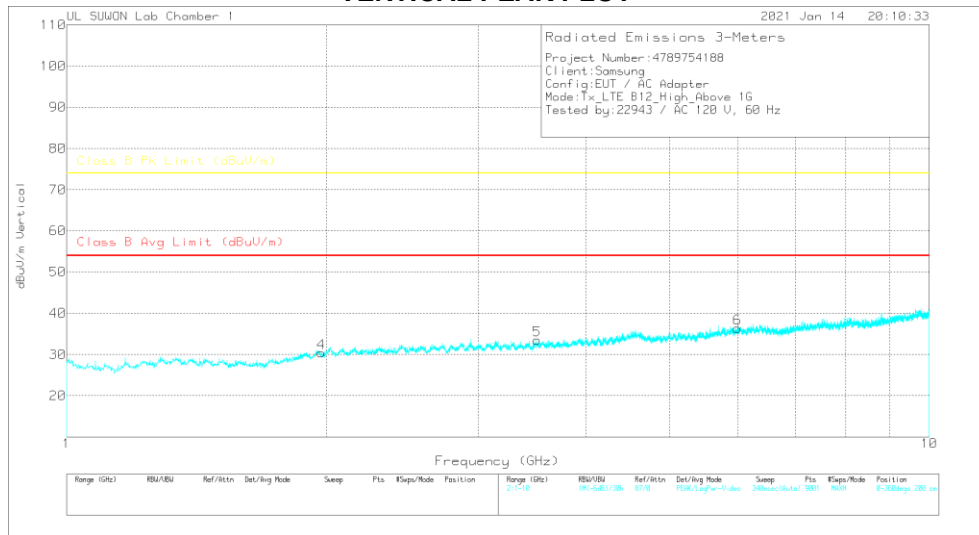
PK – Peak Detector

HIGH CHANNEL(744.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

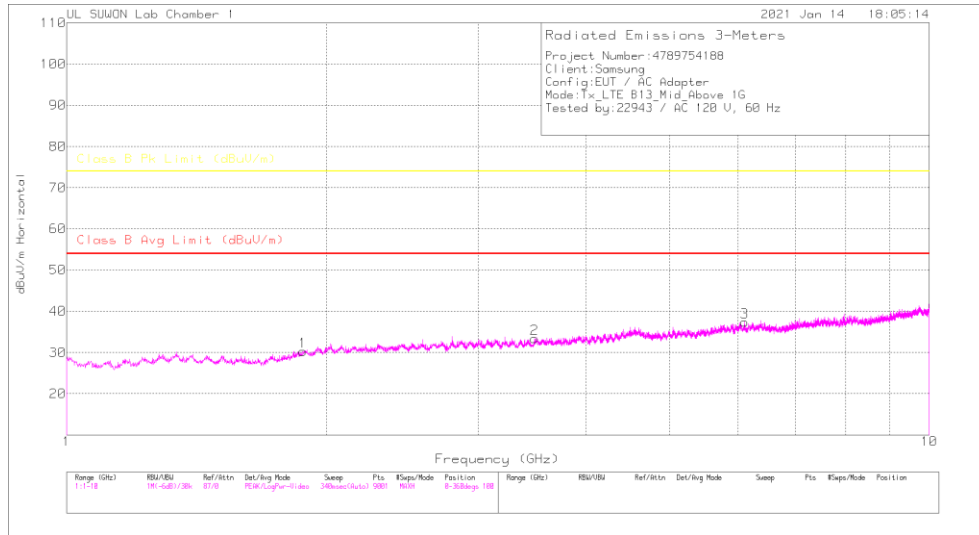
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.966	35.21	PK	31.2	-36	.5	30.91	-	-	74	-43.09	0-360	200	H
2	3.48	32.45	PK	32.8	-33.4	.5	32.35	-	-	74	-41.65	0-360	100	H
3	5.896	31.75	PK	35.1	-30.9	.5	36.45	-	-	74	-37.55	0-360	100	H
4	1.973	34.6	PK	31.3	-36	.5	30.4	-	-	74	-43.6	0-360	100	V
5	3.512	33.46	PK	32.8	-33.4	.6	33.46	-	-	74	-40.54	0-360	200	V
6	5.991	31.52	PK	35.2	-30.7	.4	36.42	-	-	74	-37.58	0-360	200	V

PK – Peak Detector

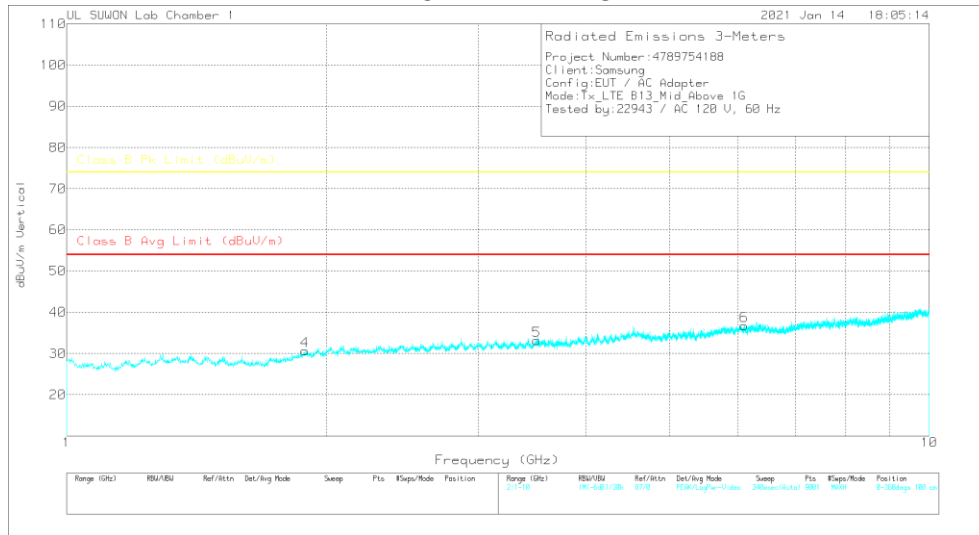
7.5. Above 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

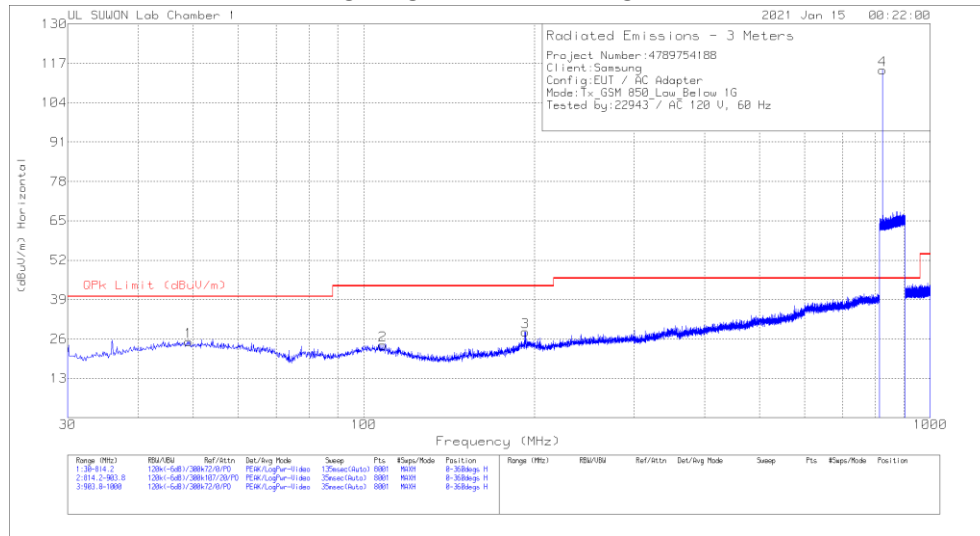
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HPF	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av/CISPRMargin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.879	35.32	PK	30.5	-36.2	.7	30.32	-	-	74	-43.68	0-360	200	H
2	3.488	33.53	PK	32.8	-33.4	.5	33.43	-	-	74	-40.57	0-360	100	H
3	6.107	31.86	PK	35.4	-30.3	.4	37.36	-	-	74	-36.64	0-360	100	H
4	1.889	35.52	PK	30.6	-36.2	.7	30.62	-	-	74	-43.38	0-360	100	V
5	3.508	33.16	PK	32.8	-33.4	.6	33.16	-	-	74	-40.84	0-360	200	V
6	6.106	31.3	PK	35.4	-30.4	.4	36.7	-	-	74	-37.3	0-360	100	V

PK – Peak Detector

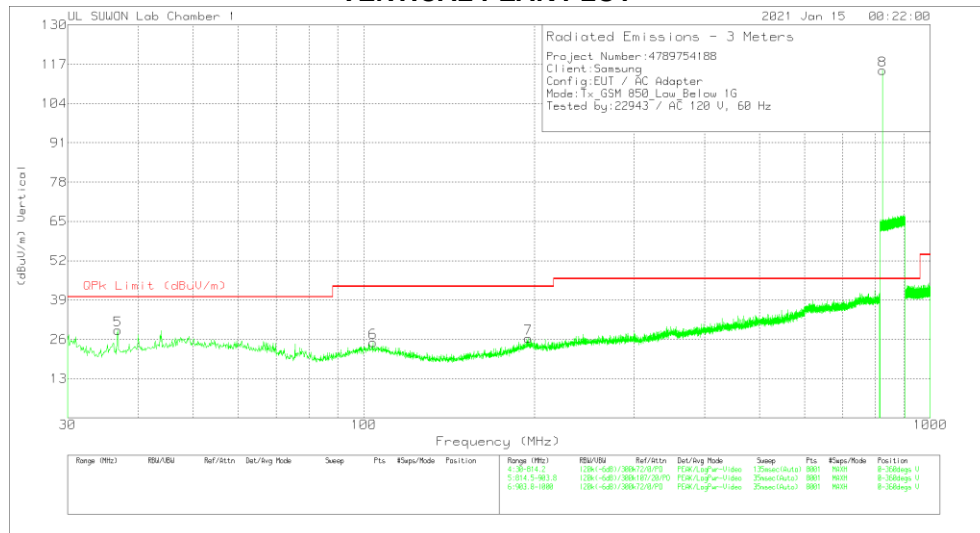
7.6. Below 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

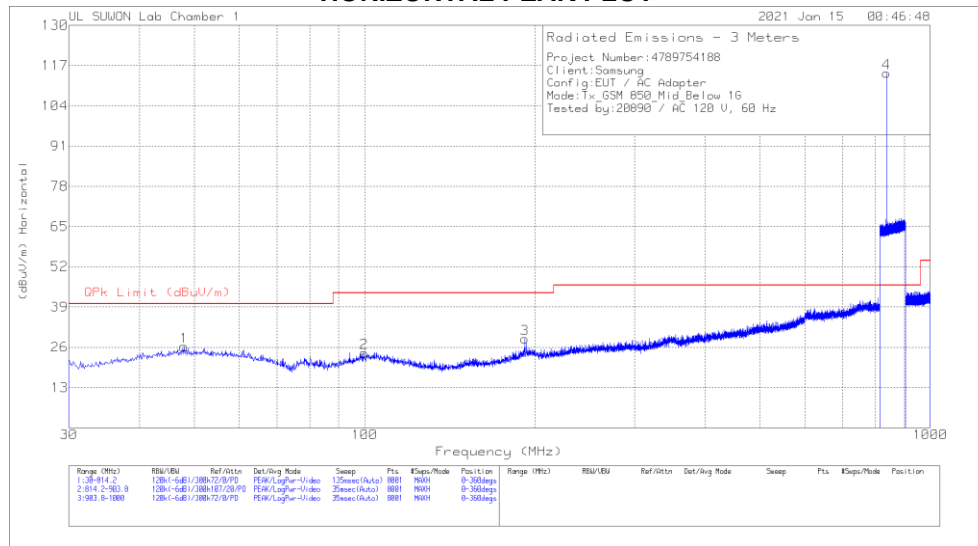
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	49.0169	3.53	Pk	19.8	1.8	25.13	40	-14.87	0-360	100	H
2	107.9299	3.79	Pk	17.5	2.7	23.99	43.52	-19.53	0-360	100	H
3	192.9176	7.53	Pk	17	3.9	28.43	43.52	-15.09	0-360	100	H
4	824.1344	80.16	Pk	27.1	7.6	114.86	46.02	68.84	0-360	200	H
5	36.7637	9.98	Pk	17.4	1.6	28.98	40	-11.02	0-360	100	V
6	103.8128	4.46	Pk	17.7	2.8	24.96	43.52	-18.56	0-360	400	V
7	195.0741	5.27	Pk	17.4	3.6	26.27	43.52	-17.25	0-360	300	V
8	824.1448	80.28	Pk	27.1	7.6	114.98	46.02	68.96	0-360	100	V

Pk - Peak detector

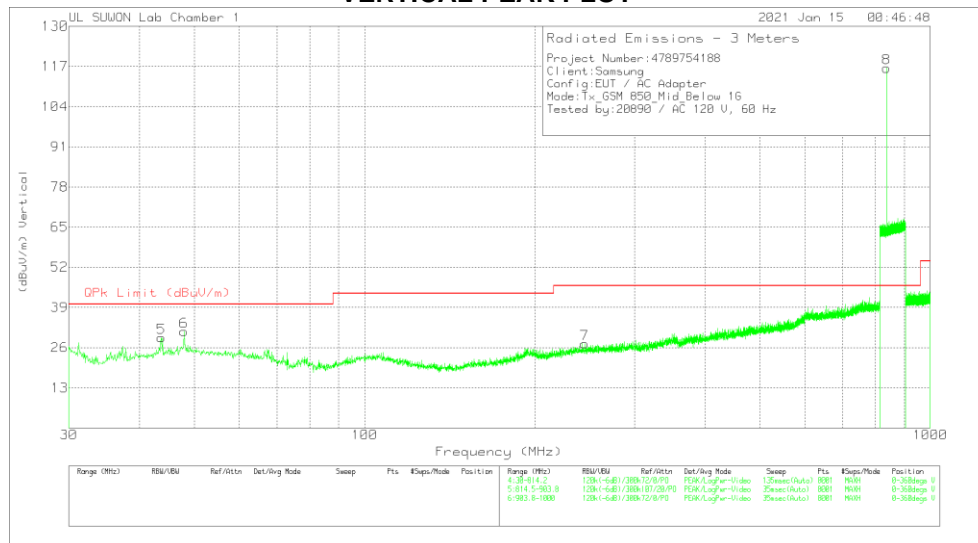
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

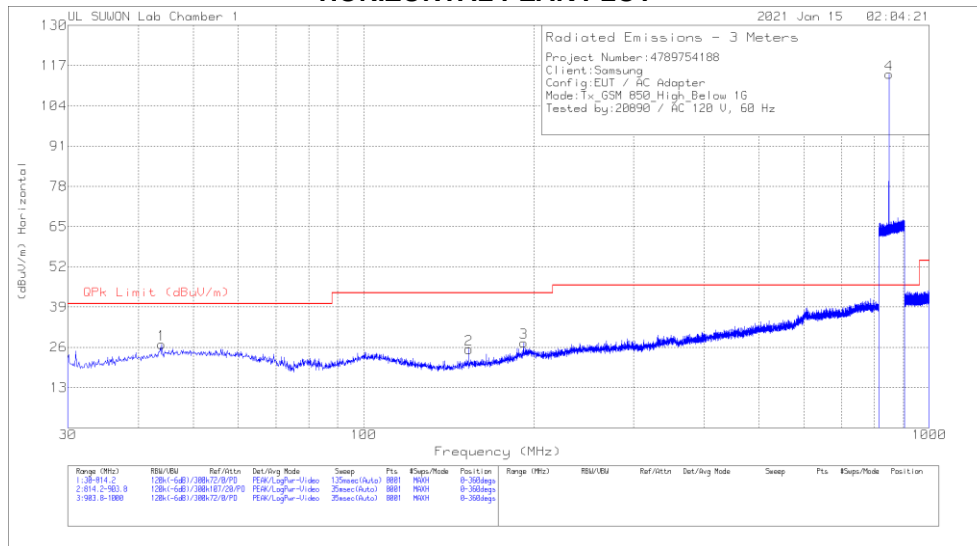
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.9386	4.58	Pk	19.9	1.7	26.18	40	-13.82	0-360	300	H
2	99.8918	3.98	Pk	17.5	2.7	24.18	43.52	-19.34	0-360	300	H
3	192.0353	8.34	Pk	16.8	3.6	28.74	43.52	-14.78	0-360	100	H
4	836.6448	79.84	Pk	27.1	7.6	114.54	46.02	68.52	0-360	100	H
5	43.7235	8.12	Pk	19.4	1.7	29.22	40	-10.78	0-360	100	V
6	47.9386	9.62	Pk	19.9	1.7	31.22	40	-8.78	0-360	200	V
7	244.9688	4.63	Pk	18.4	4.2	27.23	46.02	-18.79	0-360	200	V
8	836.5358	81.77	Pk	27.1	7.6	116.47	46.02	70.45	0-360	100	V

Pk - Peak detector

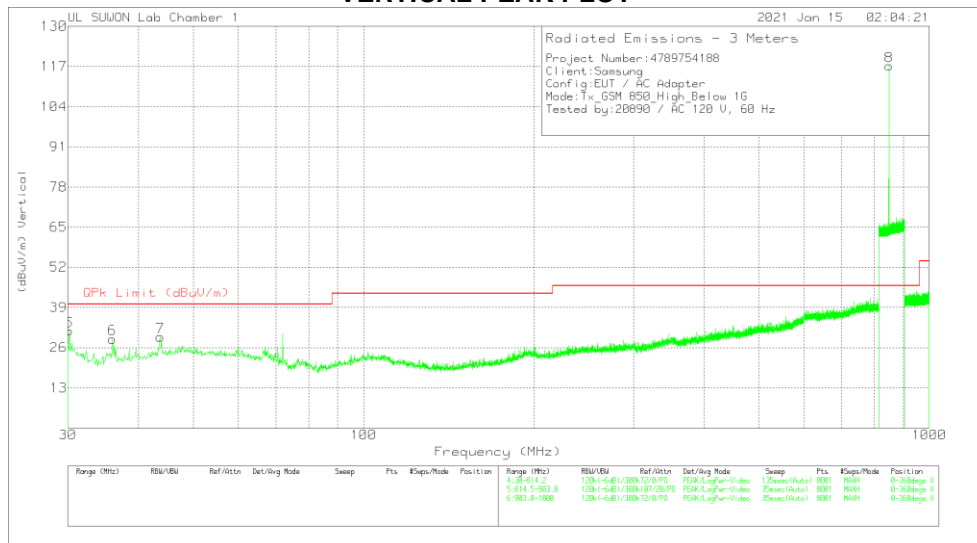
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(893.8 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	43.9196	5.74	Pk	19.5	1.7	26.94	40	-13.06	0-360	200	H
2	153.5115	7.96	Pk	14.1	3.3	25.36	43.52	-18.16	0-360	200	H
3	191.9373	7.09	Pk	16.8	3.6	27.49	43.52	-16.03	0-360	200	H
4	848.8528	79.07	Pk	27.4	7.7	114.17	46.02	68.15	0-360	300	H
5	30.1961	13.97	Pk	15.9	1.5	31.37	40	-8.63	0-360	100	V
6	35.9795	9.92	Pk	17.1	1.8	28.82	40	-11.18	0-360	100	V
7	43.7235	8.33	Pk	19.4	1.7	29.43	40	-10.57	0-360	100	V
8	848.8709	82.07	Pk	27.4	7.7	117.17	46.02	71.15	0-360	100	V

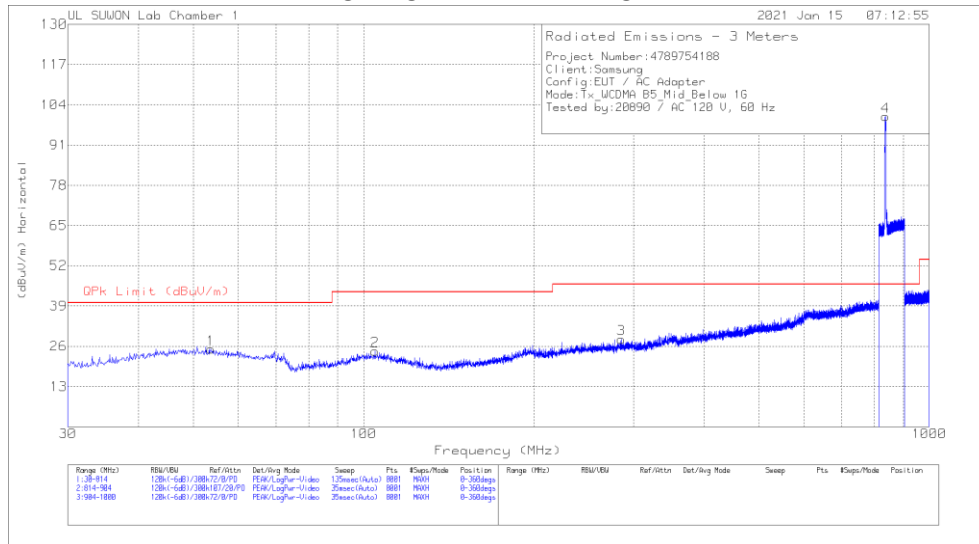
Pk - Peak detector

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

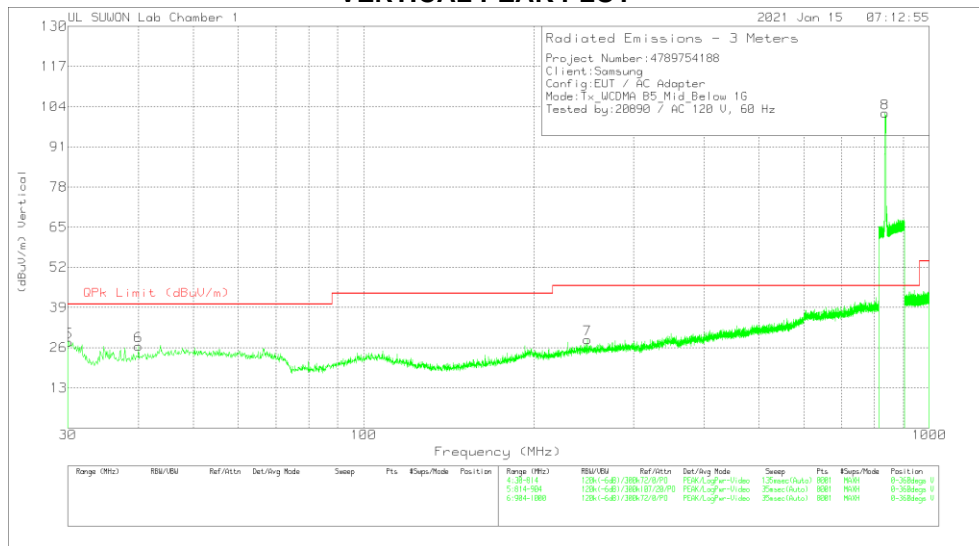
7.7. Below 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	53.716	3.47	Pk	19.5	2.1	25.07	40	-14.93	0-360	400	H
2	104.774	4.05	Pk	17.7	2.7	24.45	43.52	-19.07	0-360	400	H
3	285.486	4.73	Pk	18.9	4.7	28.33	46.02	-17.69	0-360	400	H
4	837.2988	65.51	Pk	27.1	7.6	100.21	46.02	54.19	0-360	100	H
5	30.098	10.07	Pk	16	1.7	27.77	40	-12.23	0-360	100	V
6	39.996	6.09	Pk	18.7	1.7	26.49	40	-13.51	0-360	100	V
7	248.736	6.06	Pk	18.5	4.1	28.66	46.02	-17.36	0-360	400	V
8	835.69	67.28	Pk	27	7.6	101.88	46.02	55.86	0-360	100	V

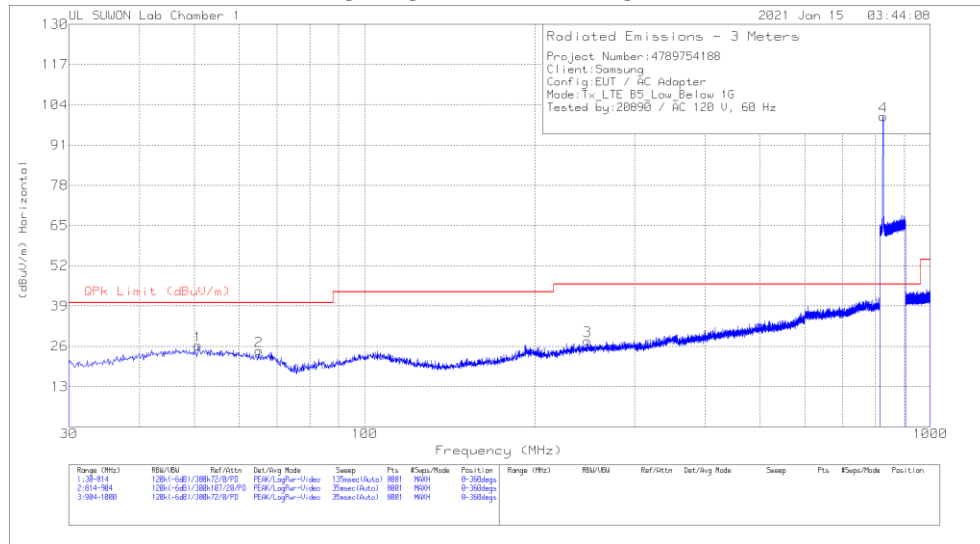
Pk - Peak detector

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

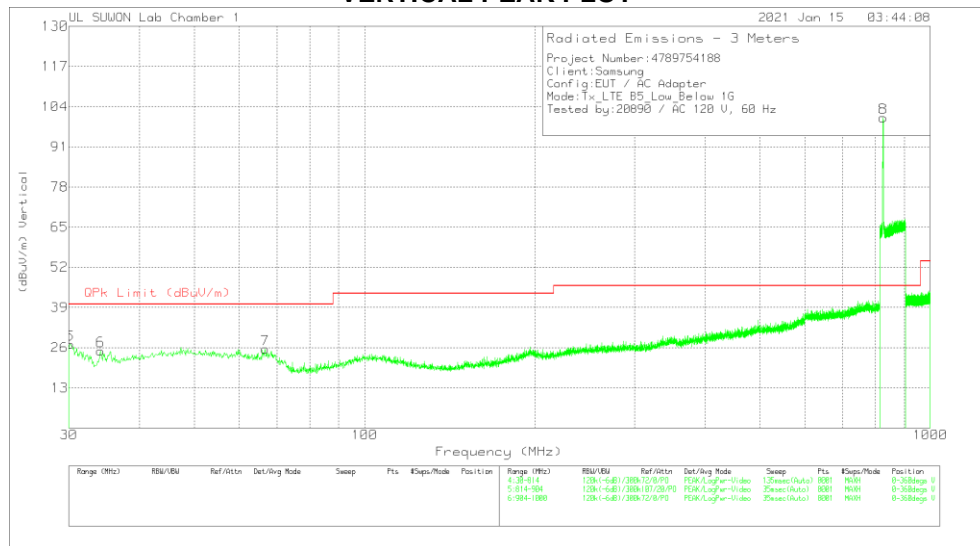
7.8. Below 1 GHz in the LTE Band 5

LOW CHANNEL(871.4MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

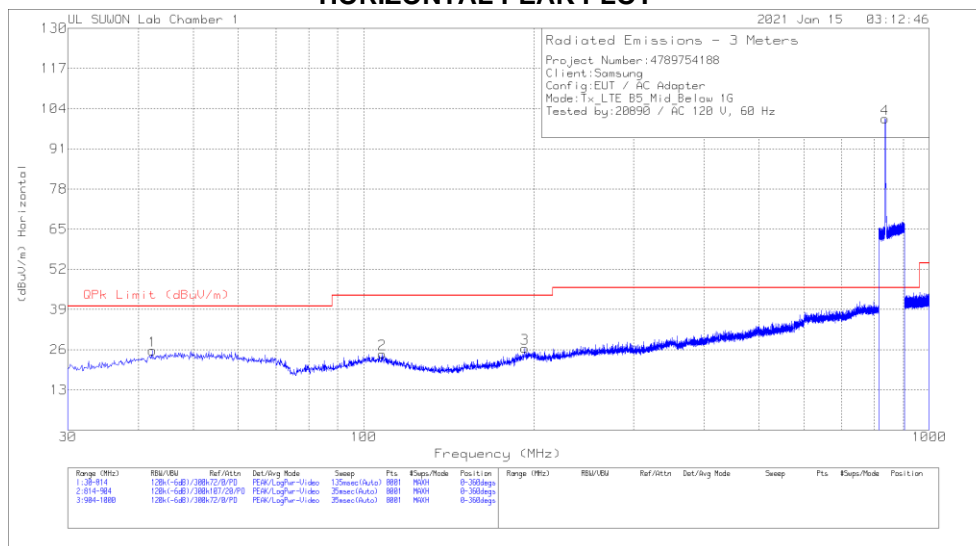
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	50.776	4.4	Pk	19.8	2	26.2	40	-13.8	0-360	200	H
2	65.084	5.16	Pk	17.2	2.2	24.56	40	-15.44	0-360	400	H
3	247.756	5.1	Pk	18.5	4.2	27.8	46.02	-18.22	0-360	400	H
4	825.9475	65.54	Pk	27.1	7.6	100.24	46.02	54.22	0-360	100	H
5	30.196	9.65	Pk	15.9	1.5	27.05	40	-12.95	0-360	100	V
6	34.116	7.27	Pk	16.2	1.5	24.97	40	-15.03	0-360	100	V
7	66.75	6.68	Pk	16.7	2.2	25.58	40	-14.42	0-360	200	V
8	825.7	65.74	Pk	27.1	7.6	100.44	46.02	54.42	0-360	100	V

Pk - Peak detector

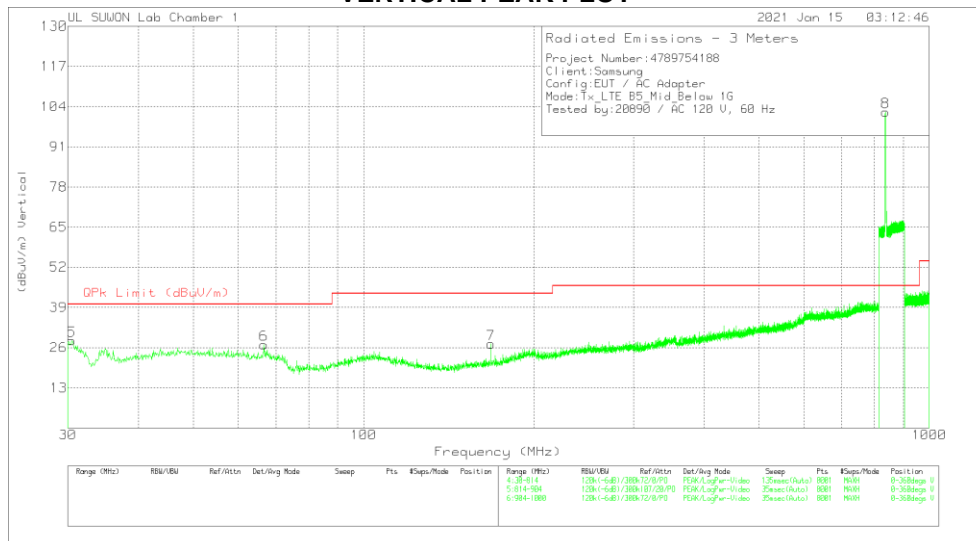
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.6MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

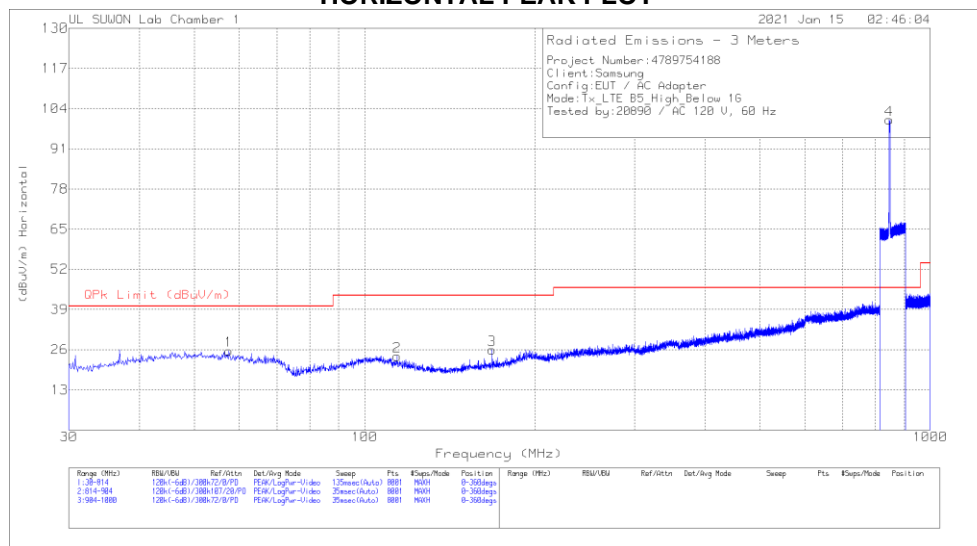
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	42.348	4.89	Pk	19.2	1.6	25.69	40	-14.31	0-360	100	H
2	107.91	4.42	Pk	17.5	2.7	24.62	43.52	-18.9	0-360	100	H
3	192.68	5.86	Pk	16.9	3.7	26.46	43.52	-17.06	0-360	100	H
4	835.6563	66.08	Pk	27	7.6	100.68	46.02	54.66	0-360	100	H
5	30.49	10.99	Pk	15.9	1.4	28.29	40	-11.71	0-360	100	V
6	66.652	8	Pk	16.7	2.3	27	40	-13	0-360	100	V
7	167.984	9.2	Pk	14.5	3.5	27.2	43.52	-16.32	0-360	100	V
8	836.6238	67.56	Pk	27.1	7.6	102.26	46.02	56.24	0-360	100	V

Pk - Peak detector

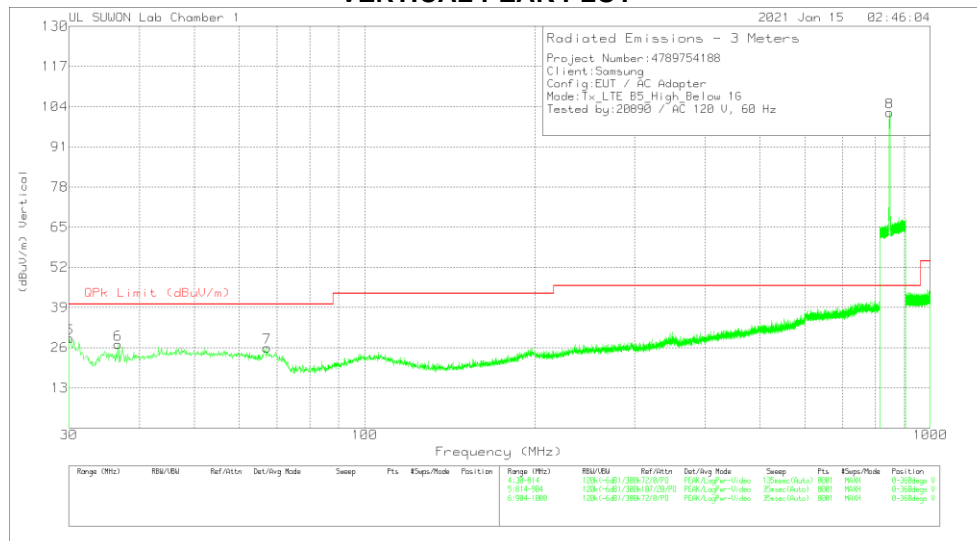
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(891.6MHz)

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	57.538	4.67	Pk	19.1	1.9	25.67	40	-14.33	0-360	300	H
2	114.182	4.56	Pk	16.3	3	23.86	43.52	-19.66	0-360	400	H
3	168.082	8.13	Pk	14.5	3.3	25.93	43.52	-17.59	0-360	200	H
4	846.6475	65.45	Pk	27.3	7.6	100.35	46.02	54.33	0-360	300	H
5	30.098	11.33	Pk	16	1.7	29.03	40	-10.97	0-360	100	V
6	36.664	8.08	Pk	17.4	1.6	27.08	40	-12.92	0-360	100	V
7	67.24	7.29	Pk	16.5	2.2	25.99	40	-14.01	0-360	100	V
8	847.705	67.13	Pk	27.4	7.6	102.13	46.02	56.11	0-360	100	V

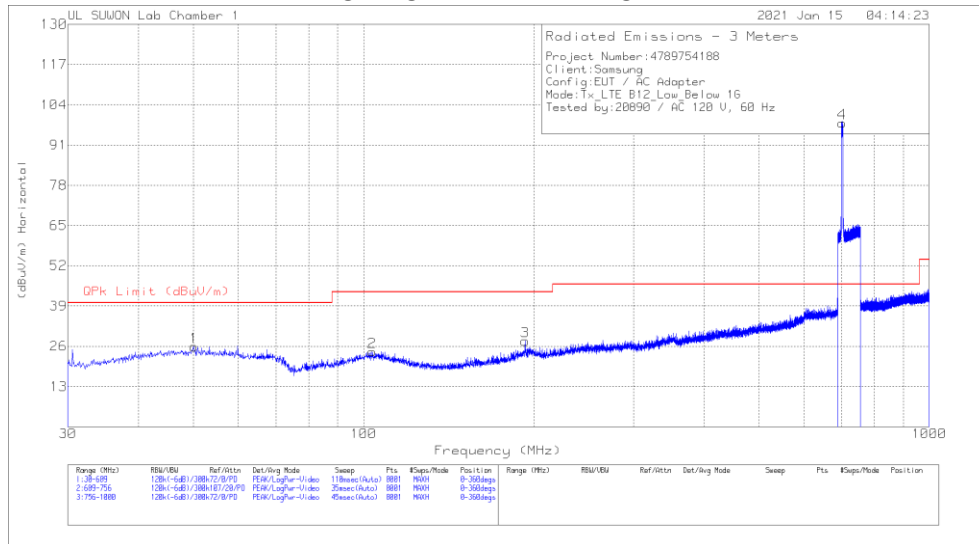
Pk - Peak detector

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

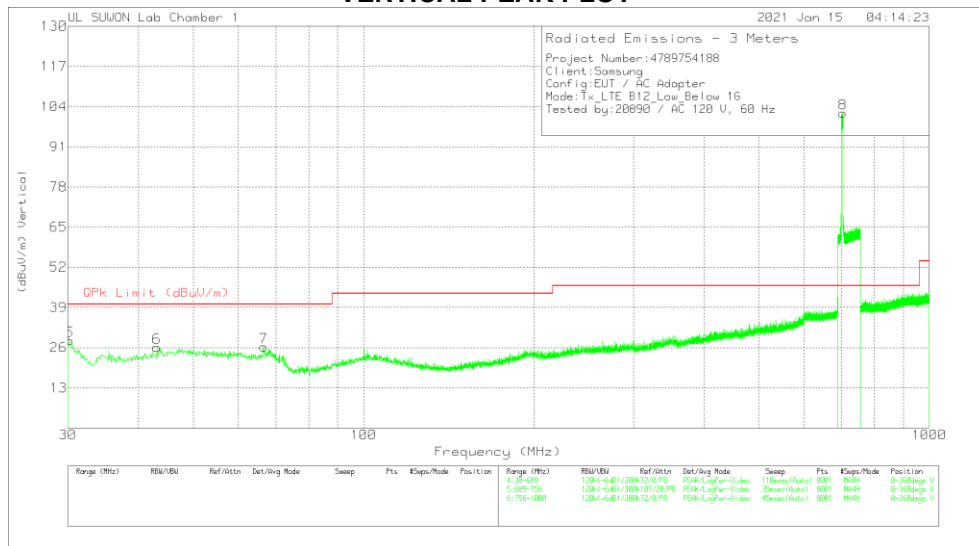
7.9. Below 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

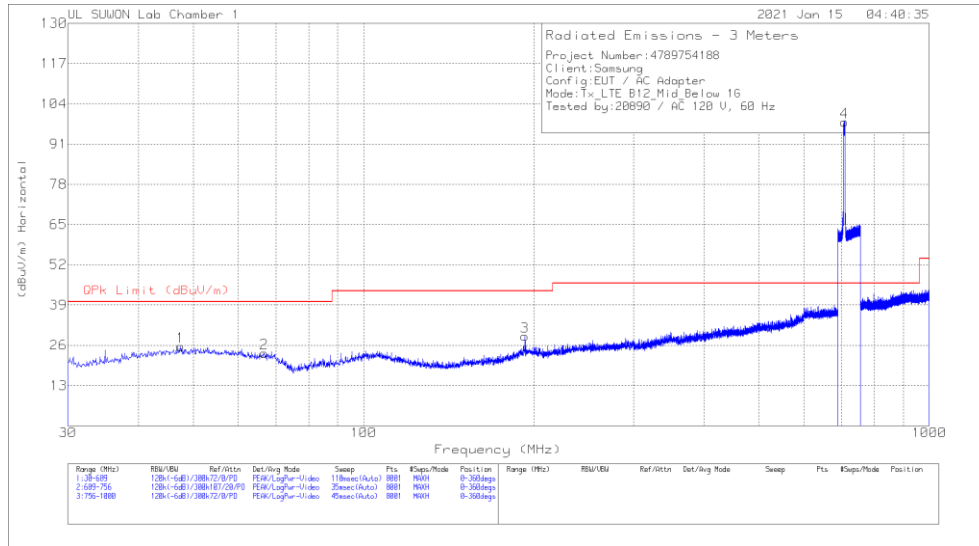
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	50.0995	3.97	Pk	19.9	2	25.87	40	-14.13	0-360	300	H
2	103.5609	3.75	Pk	17.7	2.8	24.25	43.52	-19.27	0-360	300	H
3	193.0201	6.98	Pk	17	3.7	27.68	43.52	-15.84	0-360	100	H
4	701.7384	65.61	Pk	25.6	6.9	98.11	46.02	52.09	0-360	100	H
5	30.2471	10.76	Pk	15.9	1.6	28.26	40	-11.74	0-360	100	V
6	43.0976	4.75	Pk	19.3	2	26.05	40	-13.95	0-360	100	V
7	66.5745	7.21	Pk	16.7	2.3	26.21	40	-13.79	0-360	100	V
8	703.673	69.26	Pk	25.6	7	101.86	46.02	55.84	0-360	100	V

Pk - Peak detector

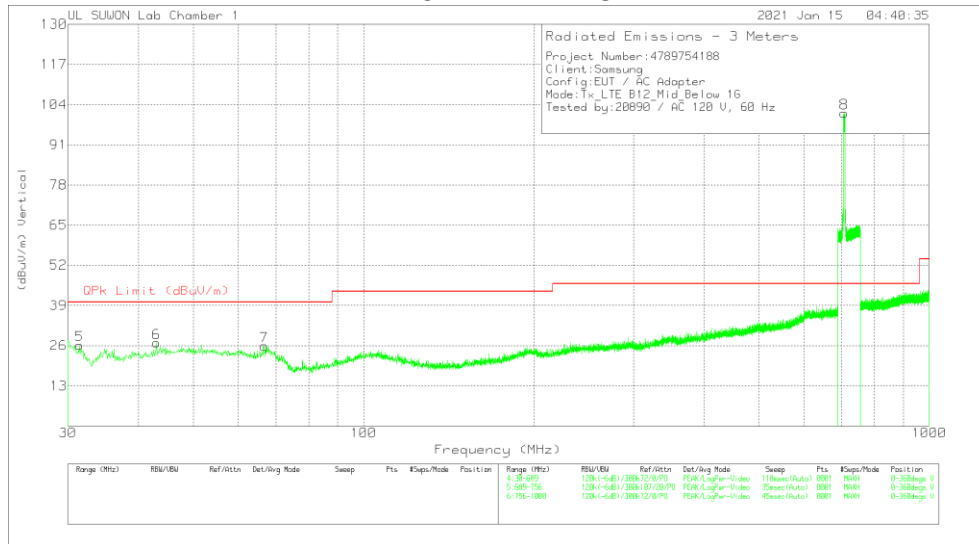
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

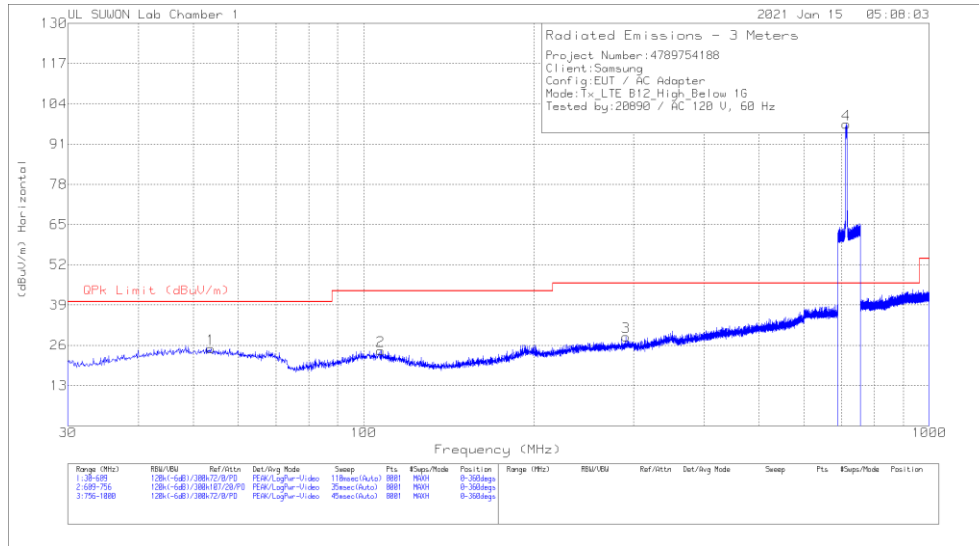
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.4635	3.71	Pk	19.9	2	25.61	40	-14.39	0-360	200	H
2	66.7393	4.55	Pk	16.7	2.2	23.45	40	-16.55	0-360	300	H
3	192.9378	8.11	Pk	17	3.8	28.91	43.52	-14.61	0-360	100	H
4	708.3798	65.38	Pk	25.7	7	98.08	46.02	52.06	0-360	100	H
5	31.4828	9.05	Pk	15.7	1.4	26.15	40	-13.85	0-360	100	V
6	43.0153	5.9	Pk	19.3	1.7	26.9	40	-13.1	0-360	100	V
7	66.7393	6.95	Pk	16.7	2.2	25.85	40	-14.15	0-360	100	V
8	707.6344	68.55	Pk	25.7	7	101.25	46.02	55.23	0-360	100	V

Pk - Peak detector

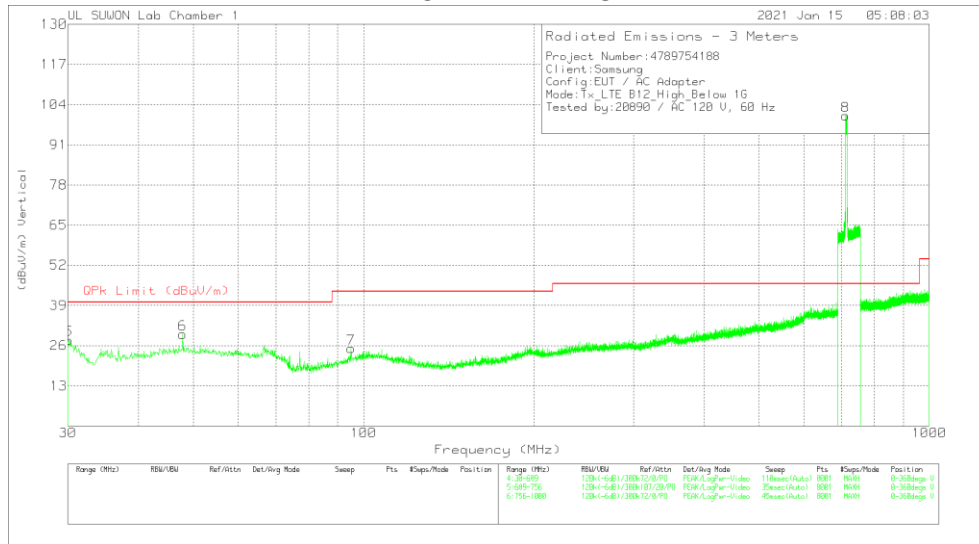
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(744.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	53.724	3.46	Pk	19.5	2	24.96	40	-15.04	0-360	100	H
2	107.2678	3.82	Pk	17.6	2.9	24.32	43.52	-19.2	0-360	100	H
3	291.1288	5.2	Pk	19.1	4.5	28.8	46.02	-17.22	0-360	400	H
4	713.6309	64.62	Pk	25.7	7.1	97.42	46.02	51.4	0-360	100	H
5	30.0824	10.12	Pk	16	1.7	27.82	40	-12.18	0-360	100	V
6	47.8754	8.08	Pk	19.9	1.7	29.68	40	-10.32	0-360	100	V
7	95.0763	5.79	Pk	16.6	2.7	25.09	43.52	-18.43	0-360	100	V
8	711.378	67.69	Pk	25.7	7	100.39	46.02	54.37	0-360	100	V

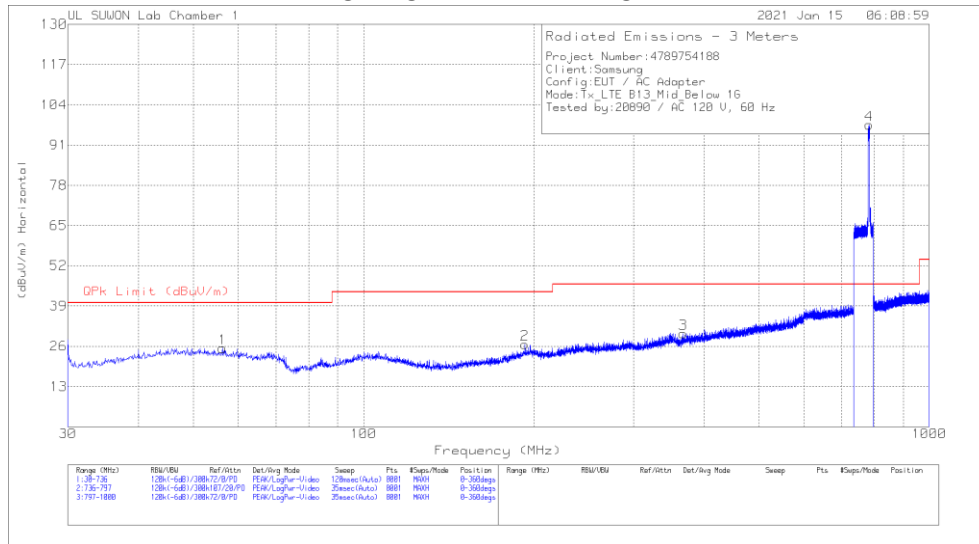
Pk - Peak detector

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

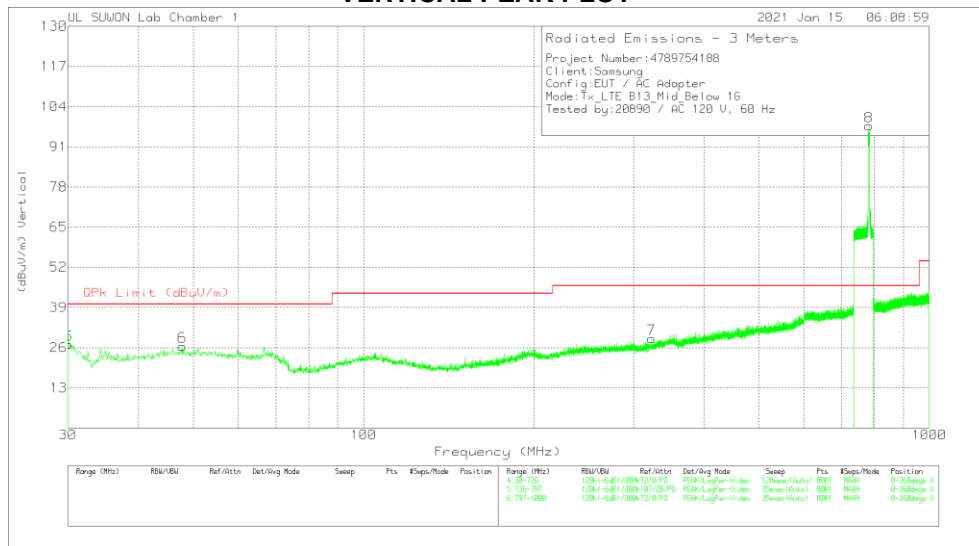
7.10. Below 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	56.2985	4.17	PK	19.3	1.9	25.37	40	-14.63	0-360	300	H
2	192.9095	5.74	PK	17	3.9	26.64	43.52	-16.88	0-360	100	H
3	367.2033	4.62	PK	20.5	5	30.12	46.02	-15.9	0-360	300	H
4	782.8709	63.62	PK	26.6	7.3	97.52	46.02	51.5	0-360	100	H
5	30.0883	9.37	PK	16	1.7	27.07	40	-12.93	0-360	100	V
6	47.8265	4.58	PK	19.9	2	26.48	40	-13.52	0-360	400	V
7	323.0783	4.57	PK	19.7	4.7	28.97	46.02	-17.05	0-360	300	V
8	782.3371	63.59	PK	26.7	7.4	97.69	46.02	51.67	0-360	100	V

Pk - Peak detector

END OF TEST REPORT