



CERTIFICATION TEST REPORT

Report Number. : 4790089631-E1V1

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

Model : SM-S908B/DS

FCC ID : A3LSMS908B

EUT Description : GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax,
NFC, WPT and UWB

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

Date Of Issue:

2021-10-29

Prepared by:

UL Korea, Ltd.

26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory

218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea

TEL: (031) 337-9902

FAX: (031) 213-5433



ACCREDITED

Testing Laboratory

TL-637

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	2021-10-29	Initial issue	Hyunsik Yun

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.....	8
5.4. DESCRIPTION OF TEST SETUP	9
6. TEST AND MEASUREMENT EQUIPMENT	10
7. APPLICABLE LIMITS AND TEST RESULTS	11
7.1. RADIATED EMISSIONS	11
7.1.1. Above 1 GHz in the GSM850.....	12
7.1.2. Above 1 GHz in the WCDMA Band 5.....	15
7.1.3. Above 1 GHz in the LTE Band 12	16
7.1.4. Above 1 GHz in the LTE Band 13	19
7.1.5. Above 1 GHz in the LTE Band 26	20
7.1.6. Above 1 GHz in the 5G NR Band 5.....	23
7.1.7. Below 1 GHz in the GSM850	24
7.1.8. Below 1 GHz in the WCDMA Band 5	27
7.1.9. Below 1 GHz in the LTE Band 12	28
7.1.10. Below 1 GHz in the LTE Band 13	31
7.1.11. Below 1 GHz in the LTE Band 26	32
7.1.12. Below 1 GHz in the 5G NR Band 5.....	35

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/ax, NFC, WPT and UWB
MODEL NUMBER: SM-S908B/DS
SERIAL NUMBER: R3CR80AB39Y, R3CR80AB3ME, R3CR06LSLL (RADIATED)
DATE TESTED: 2021-09-15 ~ 2021-10-29;

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:



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	4.05 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/ax, NFC, WPT and UWB. This test report addresses the WWAN receiver mode.

5.2. TEST MODE

Mode	Description
GSM 850	Communicating with Call simulator(CMW500)
WCDMA BAND 5	Communicating with Call simulator(CMW500)
LTE BAND 12	Communicating with Call simulator(CMW500)
LTE BAND 13	Communicating with Call simulator(CMW500)
LTE BAND 26	Communicating with Call simulator(CMW500)
5G NR BAND n5	Communicating with Call simulator(E7515B)

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.

Band	Worst Case		
	X	Y	Z
GSM 850	O	-	-
WCDMA B5	-	-	O
LTE B12	-	O	-
LTE B13	-	O	-
LTE B26	-	-	O
NR B5	-	-	O

WCDMA Band5

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

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.

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-TA800	R37N9BV0382HM3	N/A
Data Cable	SAMSUNG	EP-DN980BBE	N/A	N/A

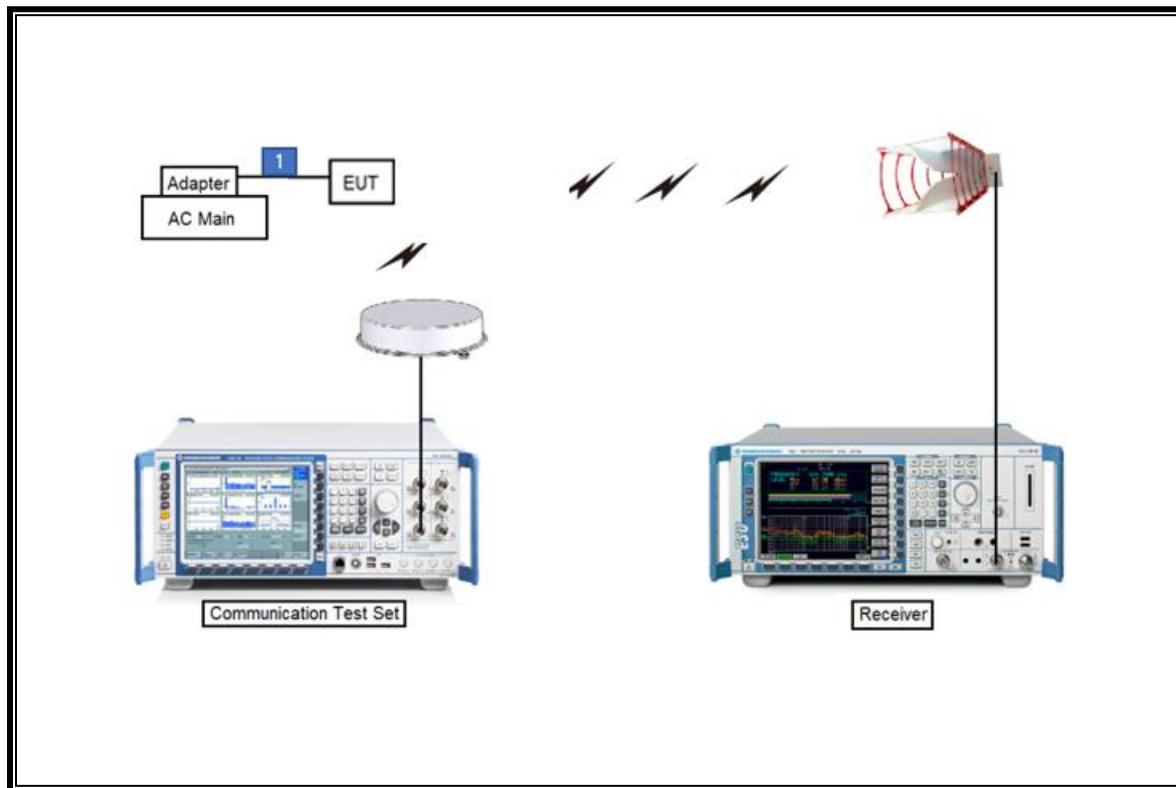
I/O CABLE

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	2023-02-08
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2022-08-04
Antenna, Horn, 40 GHz	ETS	3116C	00168645	2023-10-13
Preamplifier	ETS	3116C-PA	00168841	2022-08-04
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	2022-01-27
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
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022-08-02
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	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
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2022-08-02
LISN	R&S	ENV-216	101836	2022-08-05
LISN	R&S	ENV-216	101837	2022-08-05
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY58120110	2022-01-13
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4-2014

LIMIT

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

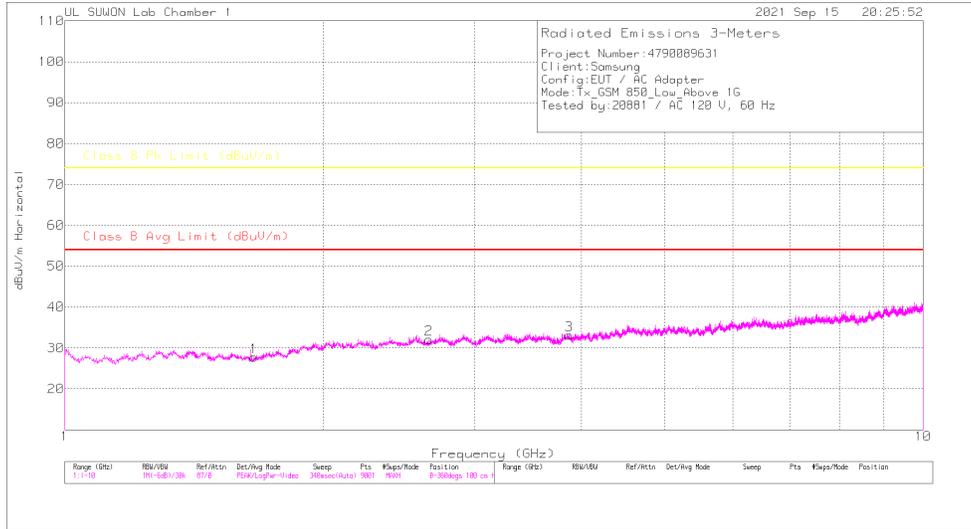
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

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

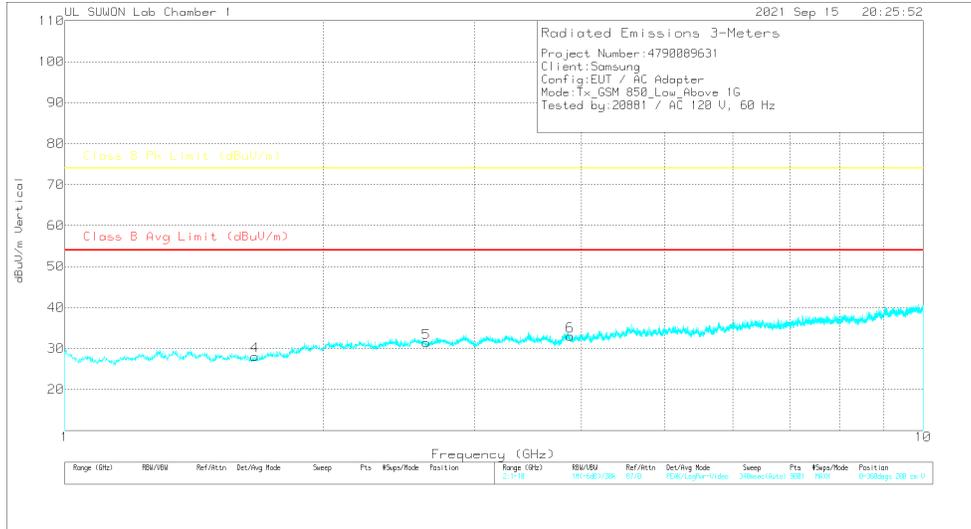
7.1.1. Above 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

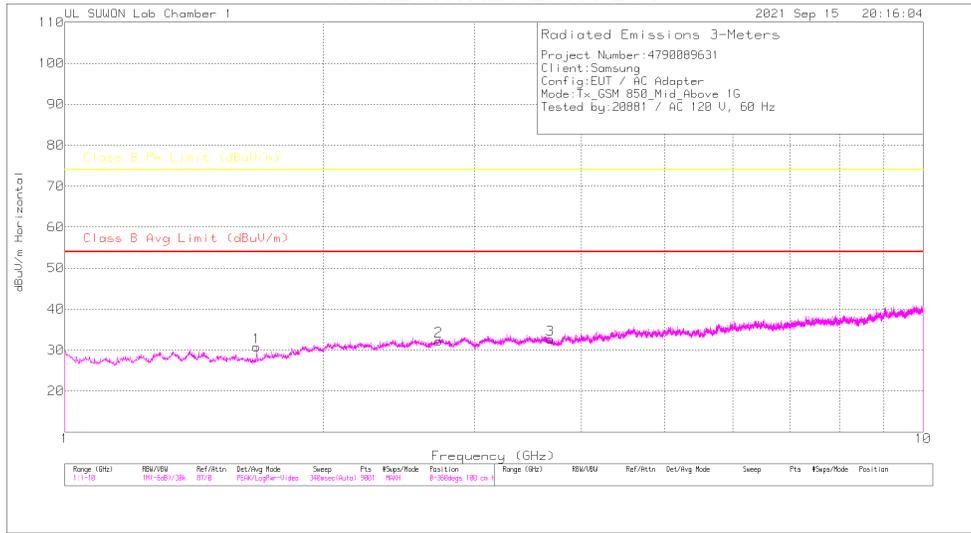
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz[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	1.661	33.09	PK	28.4	-36.5	.8	27.79	-	-	74	-46.21	0-360	100	H
2	2.656	33.58	PK	32.1	-34.5	.9	32.08	-	-	74	-41.92	0-360	100	H
3	3.867	32.14	PK	33.3	-32.9	.6	33.14	-	-	74	-40.86	0-360	100	H
4	1.666	35.29	PK	28.4	-36.4	.8	28.09	-	-	74	-45.91	0-360	200	V
5	2.639	32.91	PK	32.1	-34.5	.9	31.41	-	-	74	-42.59	0-360	200	V
6	3.88	31.97	PK	33.3	-32.8	.6	33.07	-	-	74	-40.93	0-360	200	V

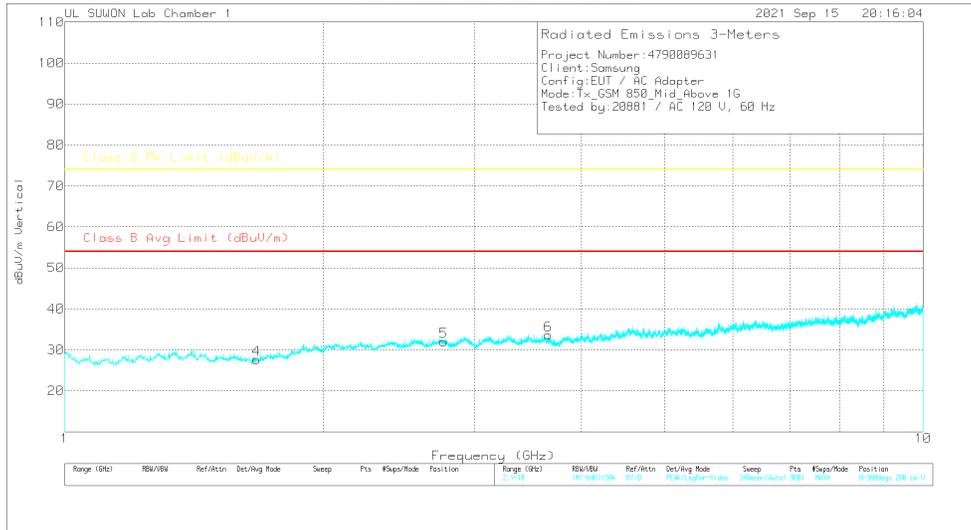
PK – Peak Detector

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

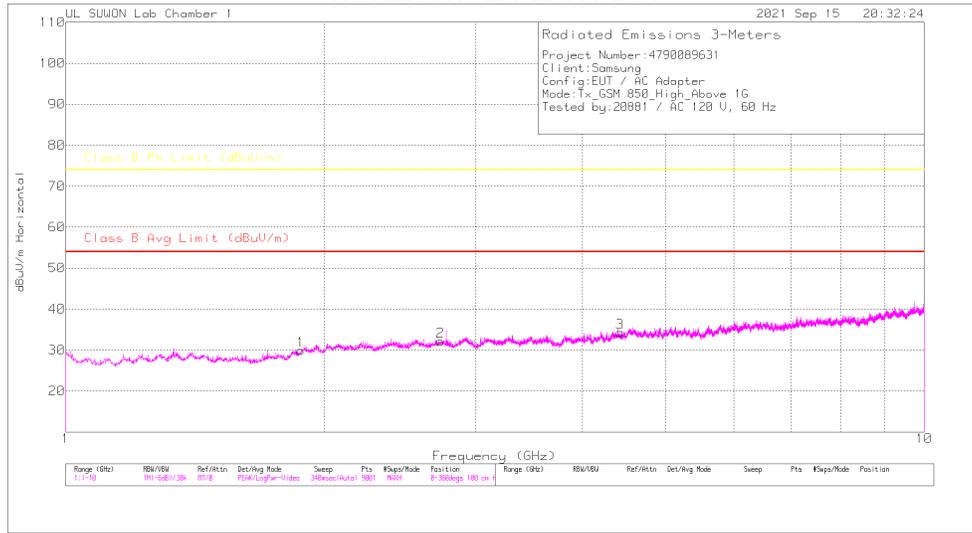
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168717	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	1.673	37.91	PK		-36.4	.8	30.81	-	-	74	-43.19	0-360	100	H
2	2.725	33.8	PK		-34.3	.6	32.2	-	-	74	-41.8	0-360	100	H
3	3.678	32.35	PK		-33.2	.5	32.65	-	-	74	-41.35	0-360	100	H
4	1.672	34.74	PK		-36.4	.8	27.64	-	-	74	-46.36	0-360	200	V
5	2.764	33.49	PK		-34.3	.6	31.99	-	-	74	-42.01	0-360	200	V
6	3.658	33.21	PK		-33.3	.6	33.61	-	-	74	-40.59	0-360	200	V

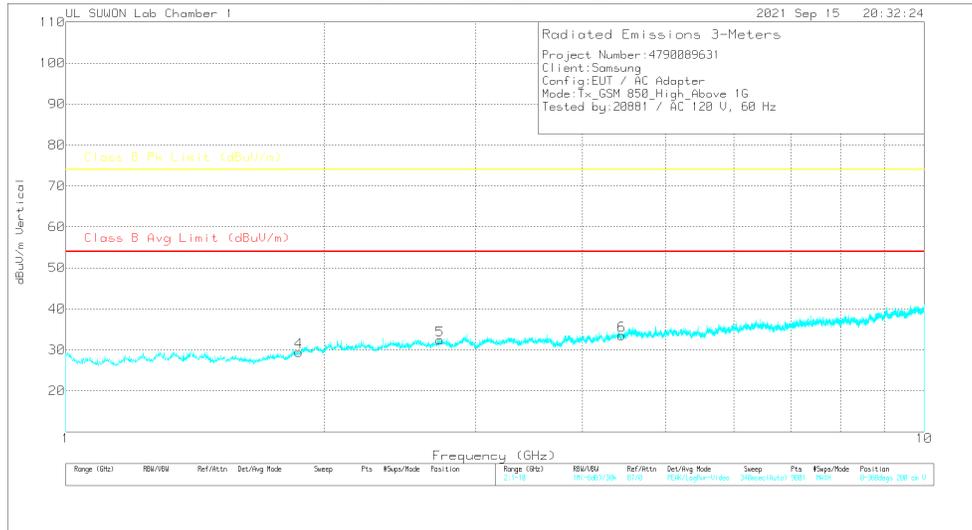
PK – Peak Detector

HIGH CHANNEL(893.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

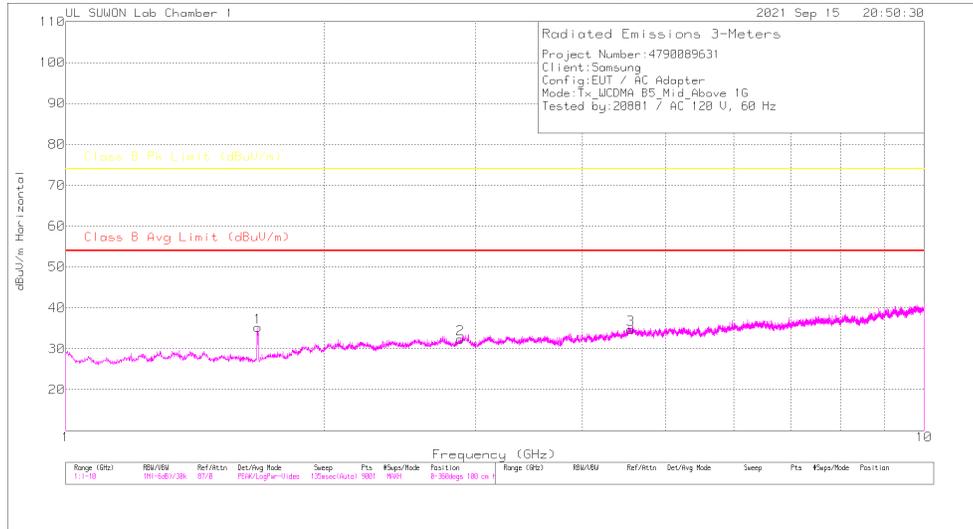
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	S117_00168717	1-18GHz(dB)	1GHz_HIP(dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	AvCISPR(Margin (dB)	Class B PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.879	34.66	PK	30.5	-36	.7	29.86	-	-	74	-44.14	0-360	100	H
2	2.732	33.68	PK	32.2	-34.3	.6	32.18	-	-	74	-41.82	0-360	100	H
3	4.425	31.91	PK	34.1	-32.2	.4	34.21	-	-	74	-39.79	0-360	100	H
4	1.869	34.56	PK	30.4	-36.1	.6	29.46	-	-	74	-44.54	0-360	200	V
5	2.729	33.97	PK	32.1	-34.3	.6	32.37	-	-	74	-41.63	0-360	200	V
6	4.445	31.28	PK	34.1	-32.2	.3	33.48	-	-	74	-40.52	0-360	200	V

PK – Peak Detector

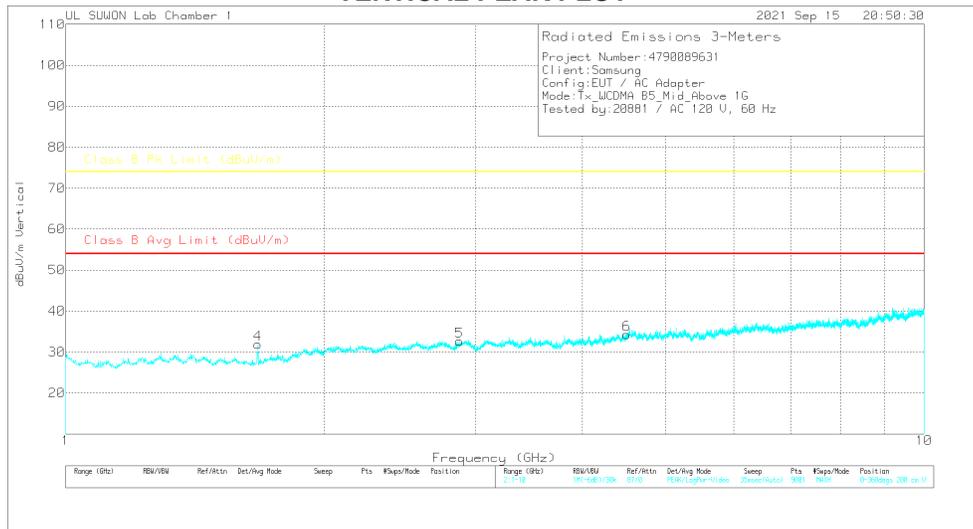
7.1.2. Above 1 GHz in the WCDMA Band 5

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meas Reading (dBuV)	Det	3117_00168717	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	1.674	42.4	PK	28.5	-36.4	.8	35.3	-	-	74	-38.7	0-360	100	H
2	2.883	33.27	PK	32.3	-34	.8	32.37	-	-	74	-41.63	0-360	100	H
3	4.556	32.04	PK	34.2	-32	.5	34.74	-	-	74	-39.26	0-360	200	H
4	1.675	39.02	PK	28.5	-36.4	.8	31.92	-	-	74	-42.08	0-360	200	V
5	2.875	33.65	PK	32.3	-34.1	.8	32.65	-	-	74	-41.35	0-360	200	V
6	4.506	31.75	PK	34.2	-32.1	.4	34.25	-	-	74	-39.75	0-360	200	V

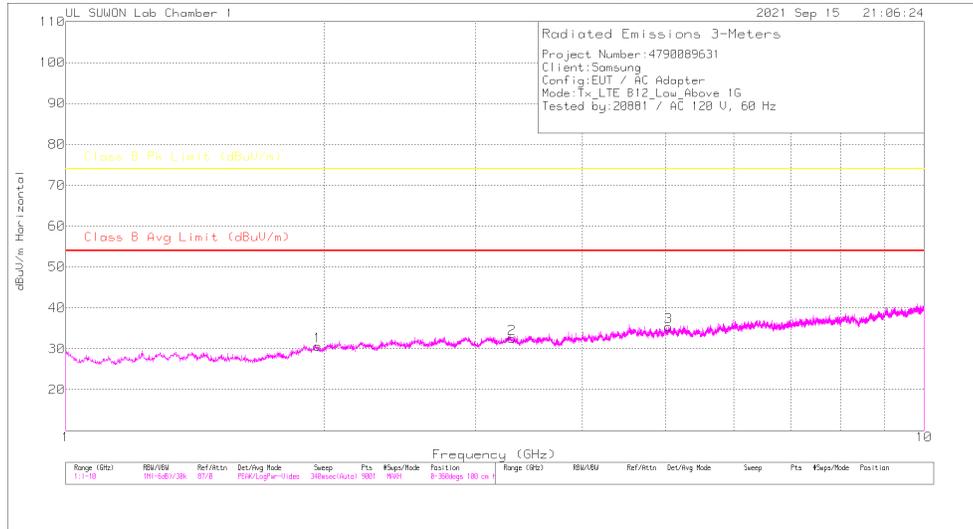
PK – Peak Detector

Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

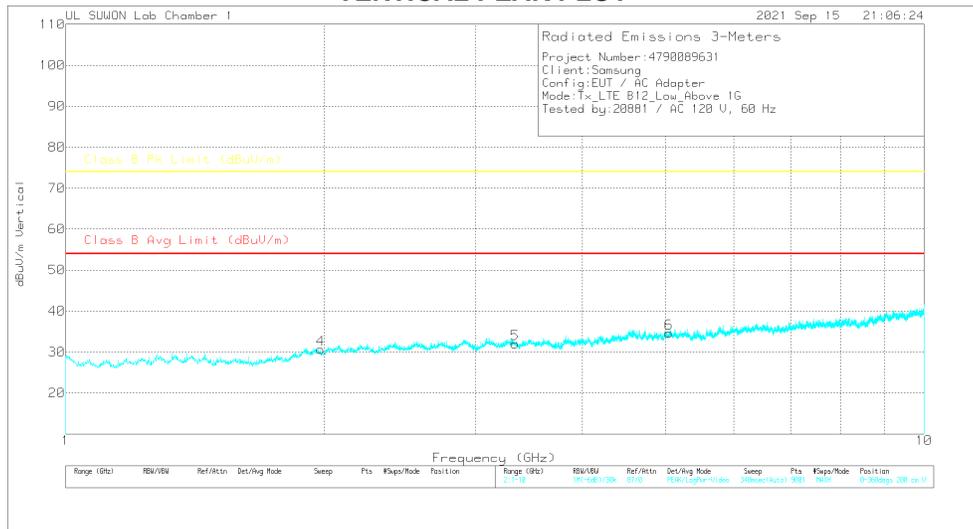
7.1.3. Above 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

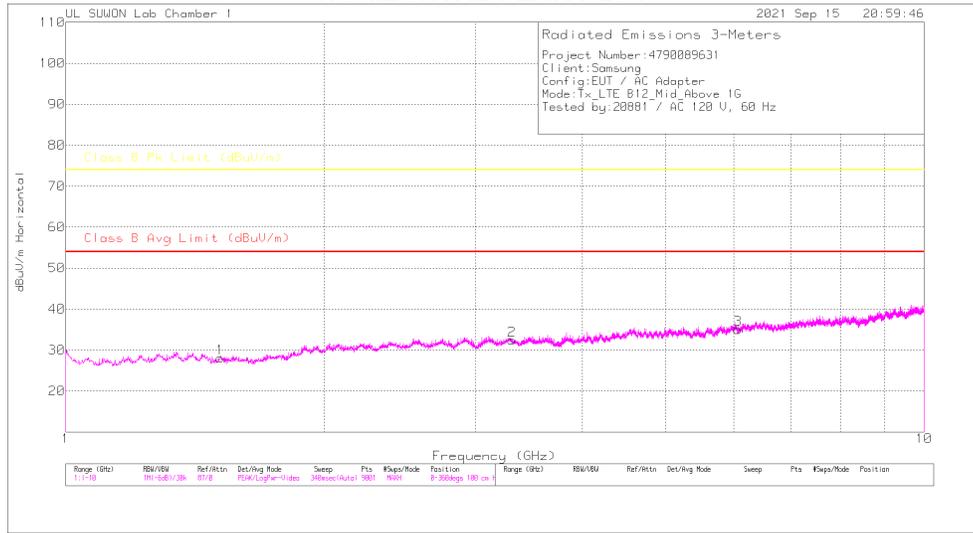
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HP(dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.965	34.61	PK	31.2	-35.8	.6	30.61	-	-	74	-43.39	0-360	100	H
2	3.31	33.07	PK	32.6	-33.8	.6	32.47	-	-	74	-41.53	0-360	100	H
3	5.039	32.41	PK	34.2	-31.6	.4	35.41	-	-	74	-38.59	0-360	100	H
4	1.981	34.39	PK	31.3	-35.7	.6	30.59	-	-	74	-43.41	0-360	200	V
5	3.338	32.47	PK	32.6	-33.7	.7	32.07	-	-	74	-41.93	0-360	200	V
6	5.043	31.58	PK	34.2	-31.6	.5	34.68	-	-	74	-39.32	0-360	200	V

PK – Peak Detector

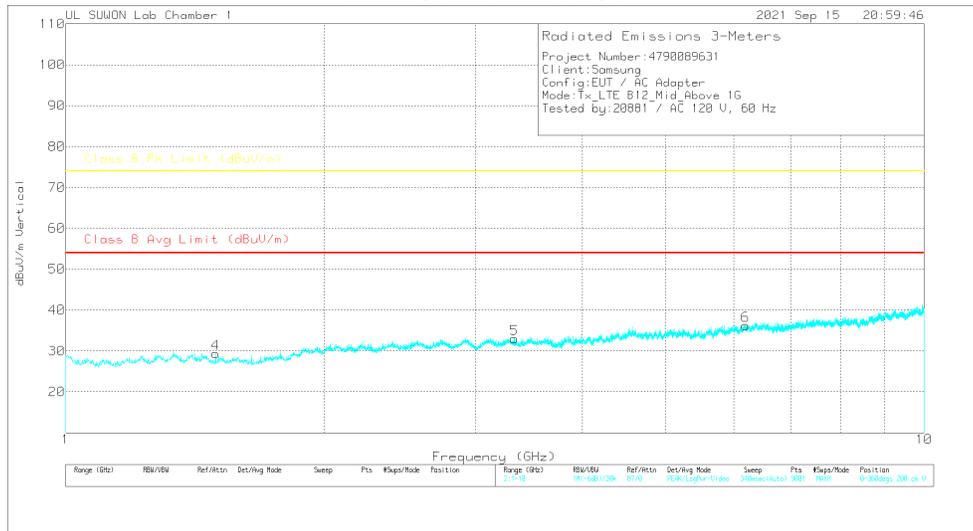
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

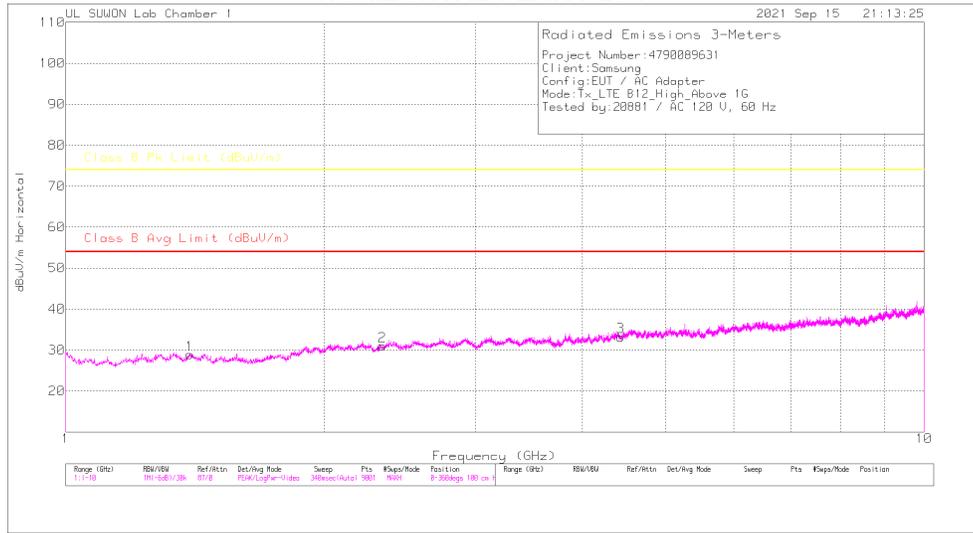
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	1-18GHz(dB)	1GHz_HP(dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.514	35.14	PK	28.8	-36.7	.8	28.04	-	-	74	-45.96	0-360	100	H
2	3.31	33	PK	32.6	-33.8	.6	32.4	-	-	74	-41.6	0-360	100	H
3	6.07	29.49	PK	35.3	-30.2	.4	34.99	-	-	74	-39.01	0-360	100	H
4	1.495	36.43	PK	29.9	-36.7	.8	29.43	-	-	74	-46.57	0-360	200	V
5	3.334	33.33	PK	32.6	-33.6	.7	33.03	-	-	74	-40.97	0-360	200	V
6	6.192	30.06	PK	35.5	-29.8	.5	36.26	-	-	74	-37.74	0-360	200	V

PK – Peak Detector

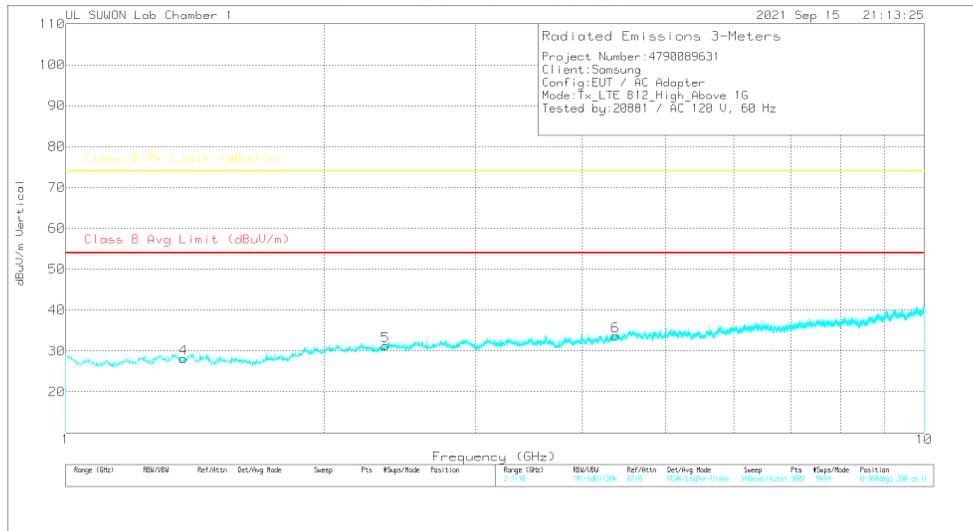
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

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_HP[dB]	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Avi(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Altitude (Degs)	Height (cm)	Polarity
1	1.395	35.71	PK	29.4	-37	.8	28.91	-	-	74	-45.09	0-360	100	H
2	2.34	33.75	PK	31.7	-35.1	.7	31.05	-	-	74	-42.95	0-360	100	H
3	4.428	30.9	PK	34.1	-32.2	.4	33.2	-	-	74	-40.8	0-360	100	H
4	1.371	34.93	PK	29.5	-37.1	.8	28.13	-	-	74	-45.87	0-360	200	V
5	2.358	34.03	PK	31.7	-35.2	.7	31.23	-	-	74	-42.77	0-360	200	V
6	4.369	31.59	PK	34	-32.4	.5	33.69	-	-	74	-40.31	0-360	200	V

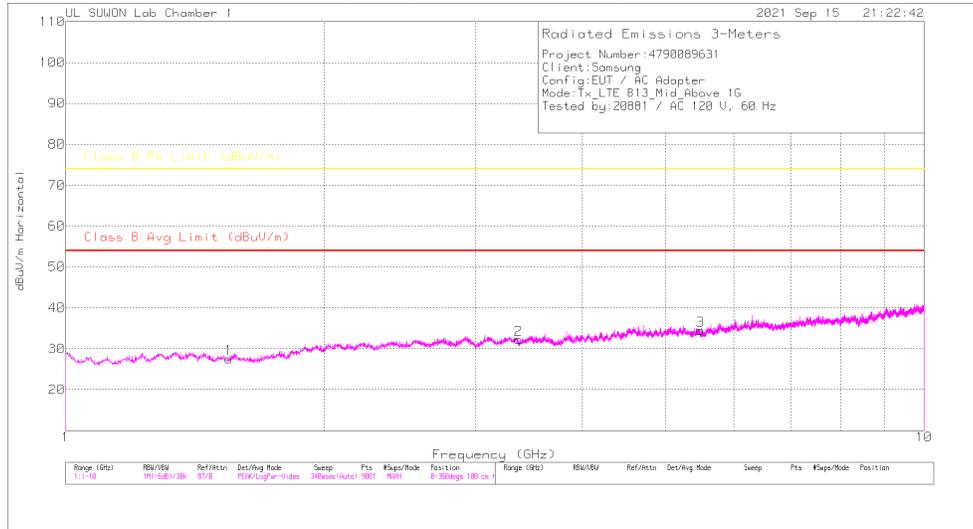
PK – Peak Detector

Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

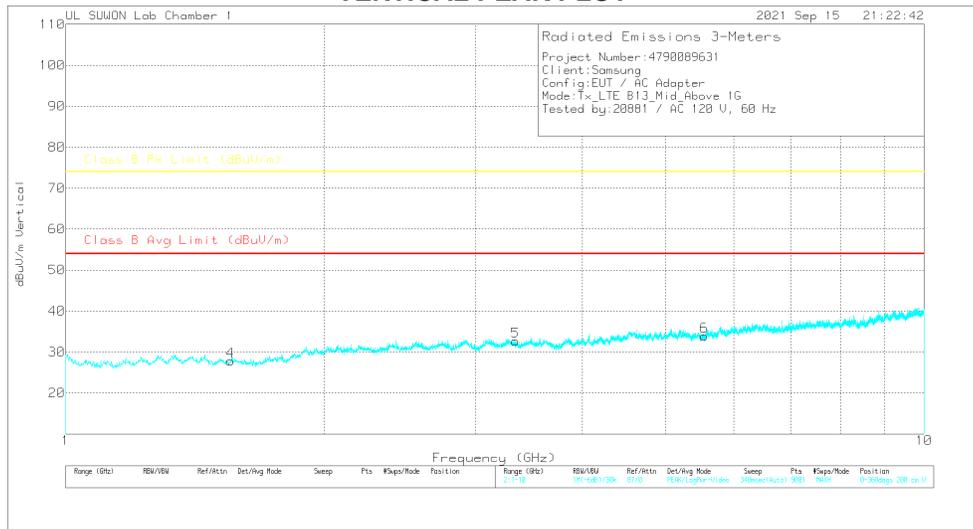
7.1.4. Above 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00188717	1-18Hz(dB)	1GHz_HP(dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	AvCISPR(Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.549	34.79	PK		-36.6	.8	27.59	-	-	74	-46.41	0-360	100	H
2	3.368	32.65	PK		-33.7	.7	32.25	-	-	74	-41.75	0-360	100	H
3	5.488	30.64	PK		-31.1	.4	34.54	-	-	74	-39.46	0-360	100	H
4	1.555	34.83	PK		-36.5	.8	27.73	-	-	74	-46.27	0-360	200	V
5	3.342	32.96	PK		-33.6	.7	32.66	-	-	74	-41.34	0-360	200	V
6	5.547	29.83	PK		-31	.5	33.93	-	-	74	-40.07	0-360	200	V

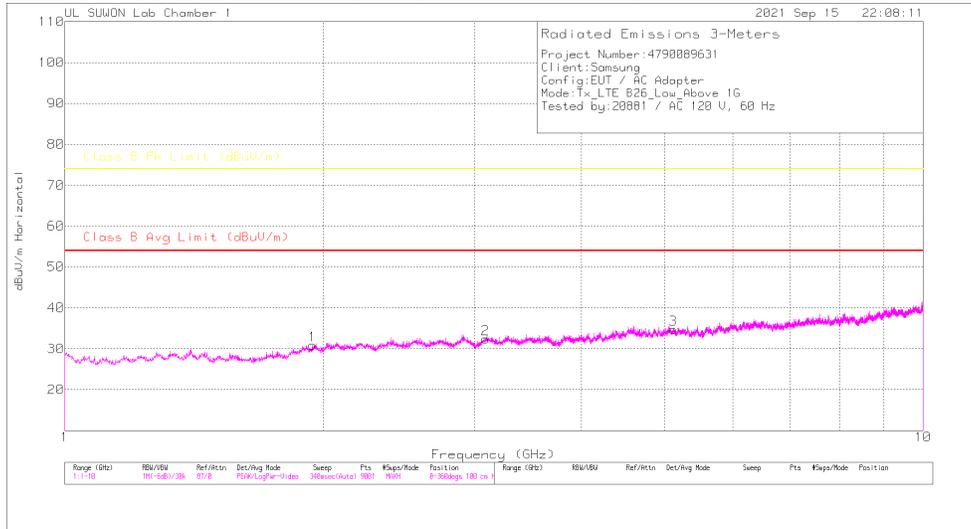
PK – Peak Detector

Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

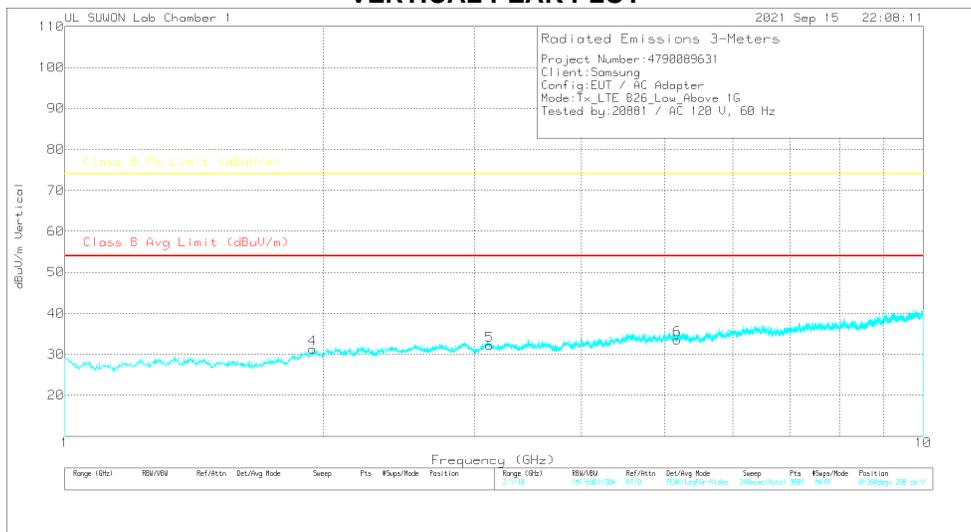
7.1.5. Above 1 GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

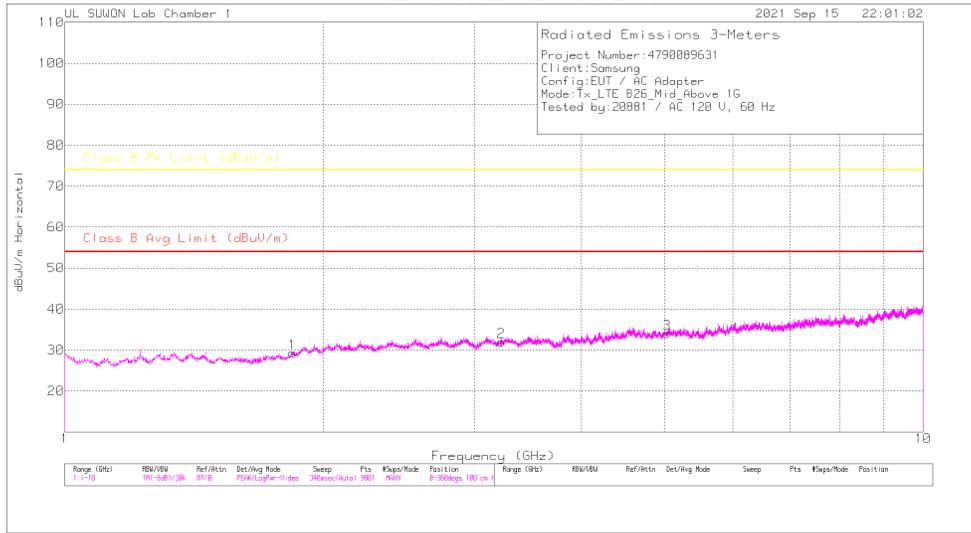
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	-1.8GHz(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	1.945	34.94	PK				30.84	-	-	74	-43.16	0-360	100	H
2	3.09	33.12	PK				32.42	-	-	74	-41.58	0-360	100	H
3	5.115	31.48	PK				34.78	-	-	74	-39.22	0-360	100	H
4	1.943	35.24	PK				31.24	-	-	74	-42.76	0-360	200	V
5	3.125	32.45	PK				32.15	-	-	74	-41.85	0-360	200	V
6	5.17	30.19	PK				33.49	-	-	74	-40.51	0-360	200	V

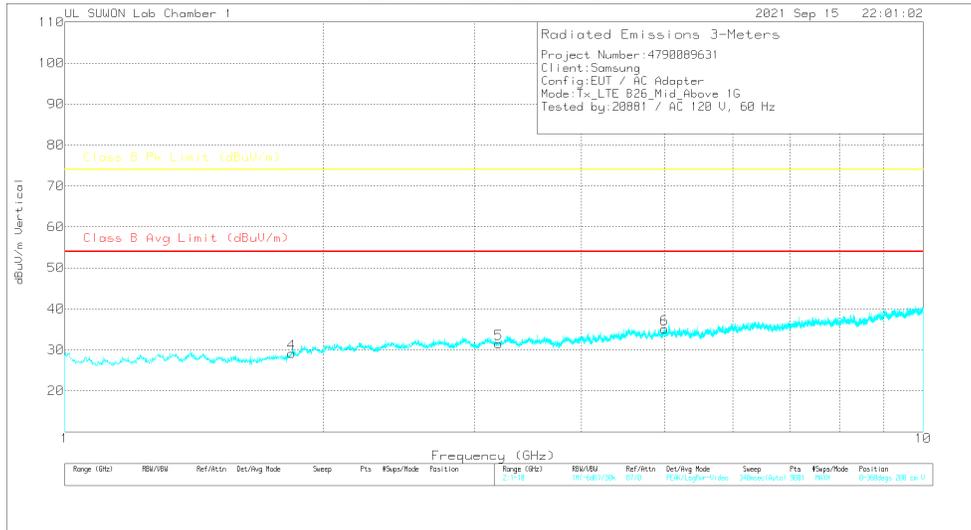
PK – Peak Detector

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

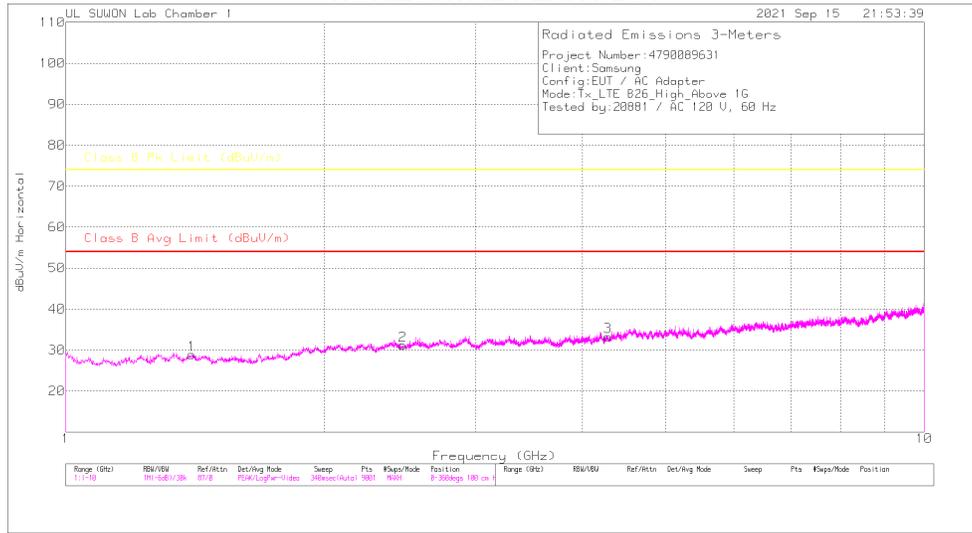
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	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	1.841	34.71	PK		-36.1	.6	29.31	-	-	74	-44.69	0-360	100	H
2	3.224	32.43	PK		-33.8	.7	32.03	-	-	74	-41.97	0-360	100	H
3	5.03	31.02	PK		-31.6	.4	34.02	-	-	74	-39.98	0-360	100	H
4	1.837	34.68	PK		-36.1	.6	29.18	-	-	74	-44.82	0-360	200	V
5	3.204	31.79	PK		-33.7	.7	31.49	-	-	74	-42.51	0-360	200	V
6	4.998	32.08	PK		-31.5	.4	35.08	-	-	74	-38.92	0-360	200	V

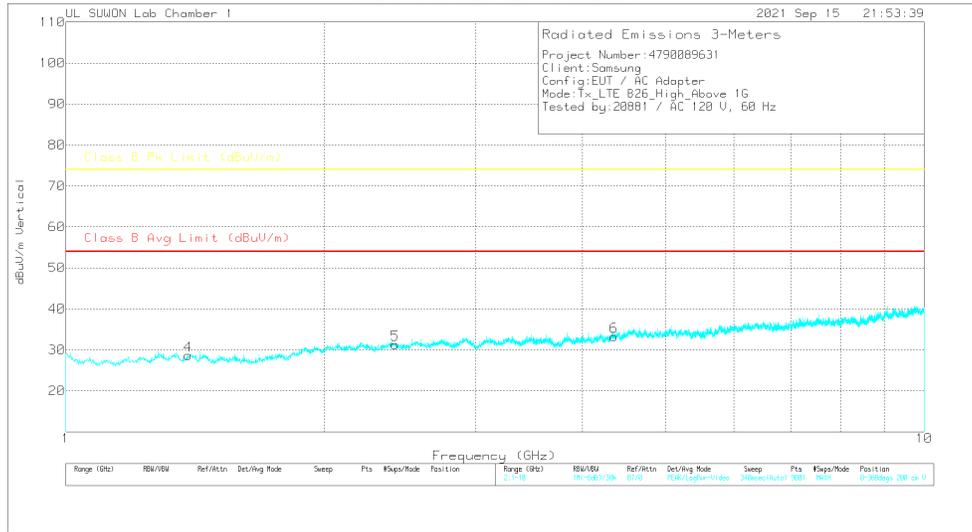
PK – Peak Detector

HIGH CHANNEL(892.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

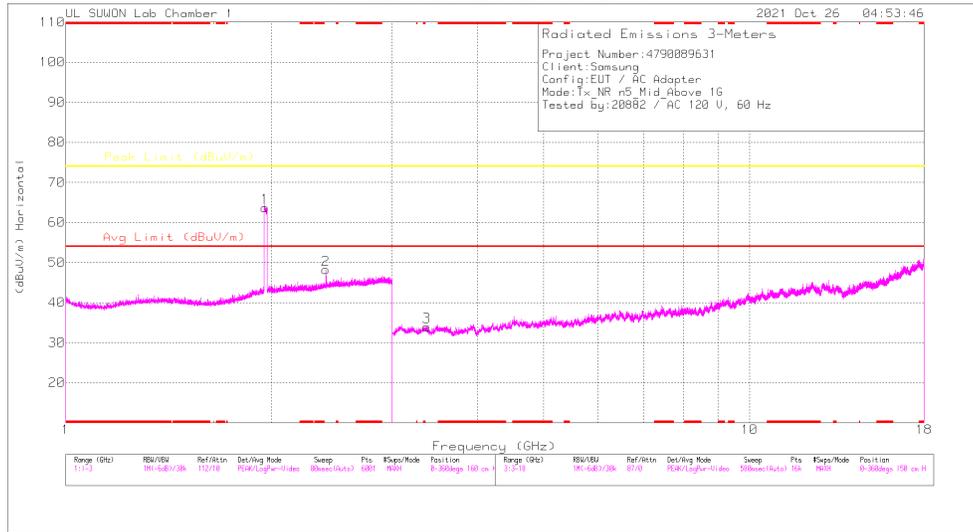
Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168717	1-18GHz(dB)	1GHz_HP(dB)	Corrected Reading dBu/m	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.402	35.67	PK	29.4	-37	.8	28.87	-	-	74	-45.13	0-360	100	H
2	2.471	33.24	PK	31.9	-34.8	.8	31.14	-	-	74	-42.86	0-360	100	H
3	4.282	31.38	PK	33.8	-32.4	.5	33.28	-	-	74	-40.72	0-360	100	H
4	1.389	33.48	PK	29.4	-37	.8	28.68	-	-	74	-45.32	0-360	200	V
5	2.42	33.63	PK	31.9	-35	.8	31.33	-	-	74	-42.87	0-360	200	V
6	4.352	31.11	PK	33.9	-32.3	.6	33.31	-	-	74	-40.69	0-360	200	V

PK – Peak Detector

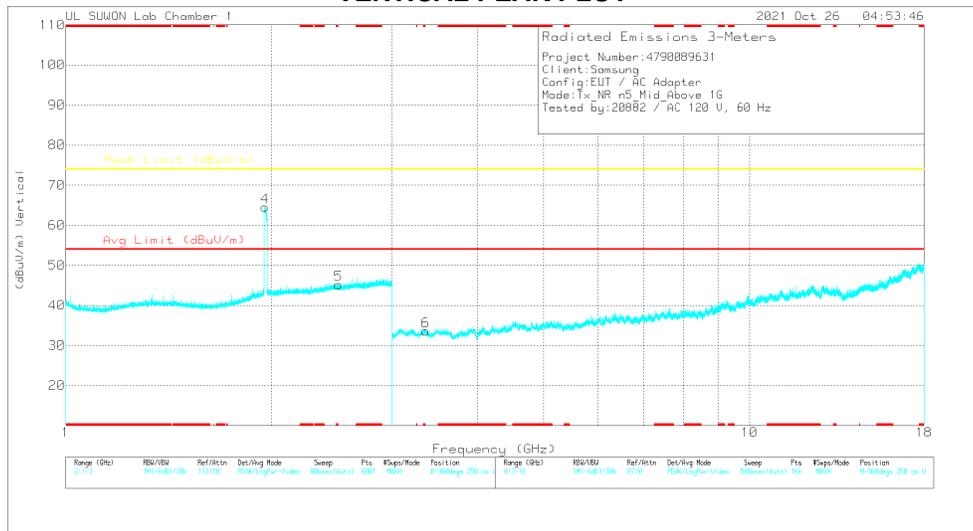
7.1.6. Above 1 GHz in the 5G NR Band 5

MID CHANNEL(881.5MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.957	58.01	PK	31.2	-26.1	.6	63.71	-	-	74	-10.29	0-360	150	H
2	2.402	40.96	PK	31.8	-25.3	.8	48.26	-	-	74	-25.74	0-360	160	H
4	1.95767	58.9	PK	31.2	-26.1	.6	64.6	-	-	74	-9.4	0-360	250	V
5	2.506	37.24	PK	32	-24.9	.8	45.14	-	-	74	-28.86	0-360	250	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	3.37123	33.72	PK	32.6	-33	.7	34.02	-	-	74	-39.98	0-360	150	H
6	3.36373	33.27	PK	32.6	-33	.7	33.57	-	-	74	-40.43	0-360	250	V

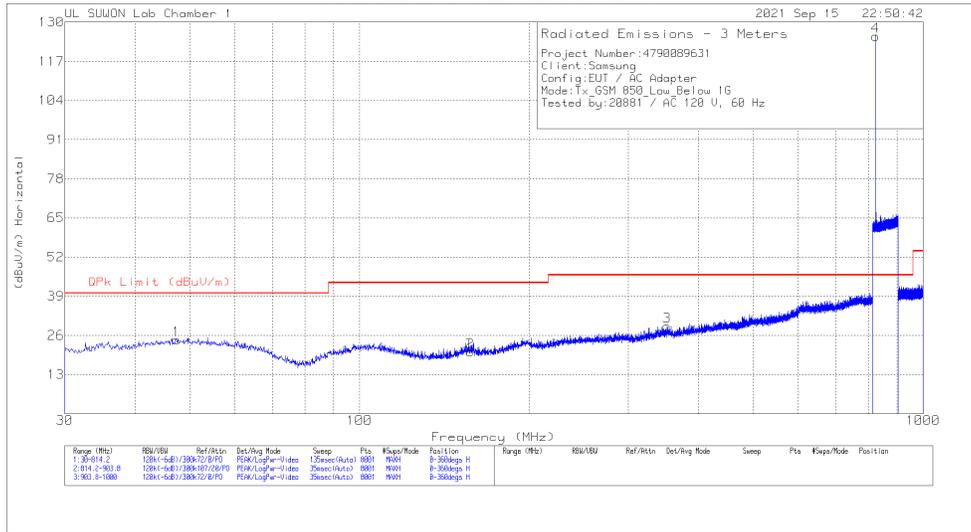
PK – Peak Detector

Note. Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

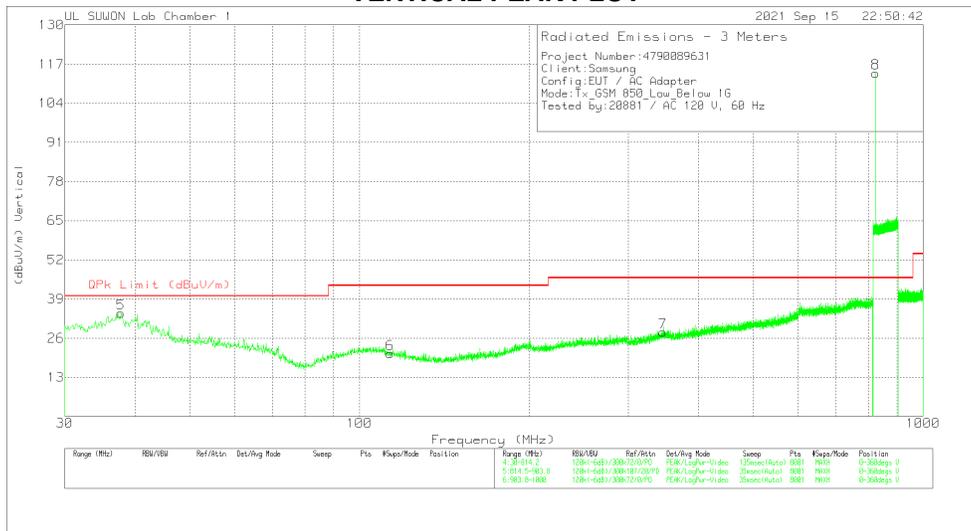
7.1.7. Below 1 GHz in the GSM850

LOW CHANNEL(869.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

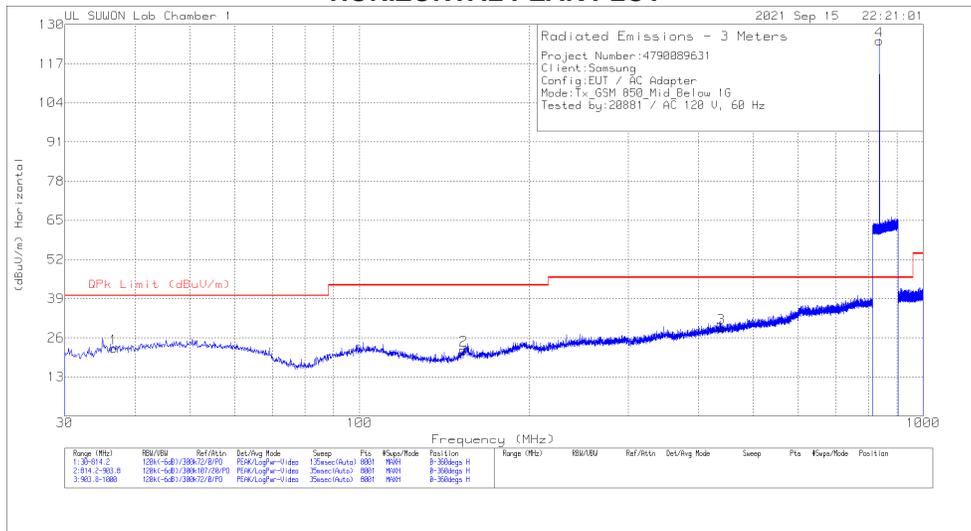
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.3504	2.91	Pk	19.9	1.6	24.41	40	-15.59	0-360	100	H
2	157.3345	3.71	Pk	14.2	2.6	20.51	43.52	-23.01	0-360	100	H
3	351.326	4.09	Pk	21	3.9	28.99	46.02	-17.03	0-360	300	H
4	824.2016	92.26	Pk	27.1	6	125.36	46.02	79.34	0-360	200	H
5	37.744	15.23	Pk	17.8	1.3	34.33	40	-5.67	0-360	200	V
6	113.2232	2.39	Pk	16.3	2.2	20.89	43.52	-22.63	0-360	400	V
7	345.6405	3.36	Pk	20.8	3.9	28.06	46.02	-17.96	0-360	200	V
8	824.2006	80.93	Pk	27.1	6	114.03	46.02	68.01	0-360	100	V

Pk - Peak detector

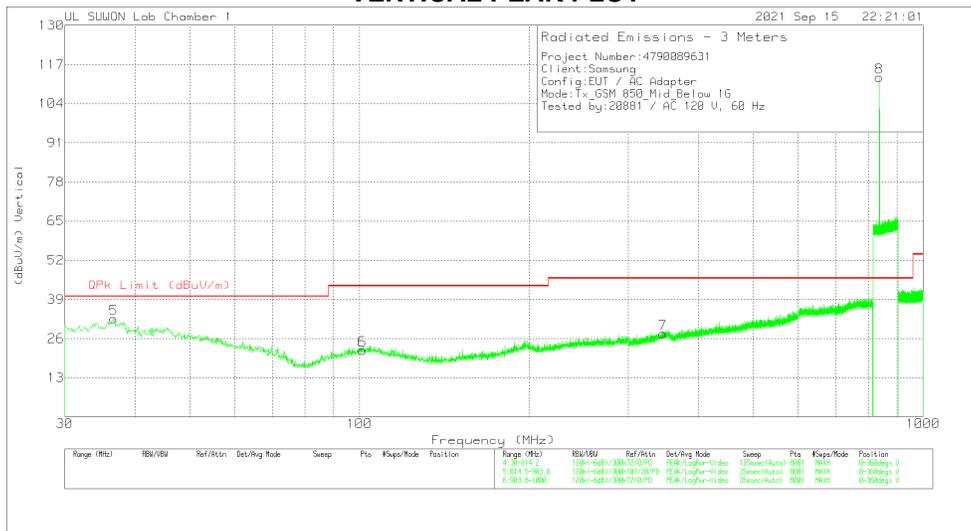
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(881.6 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

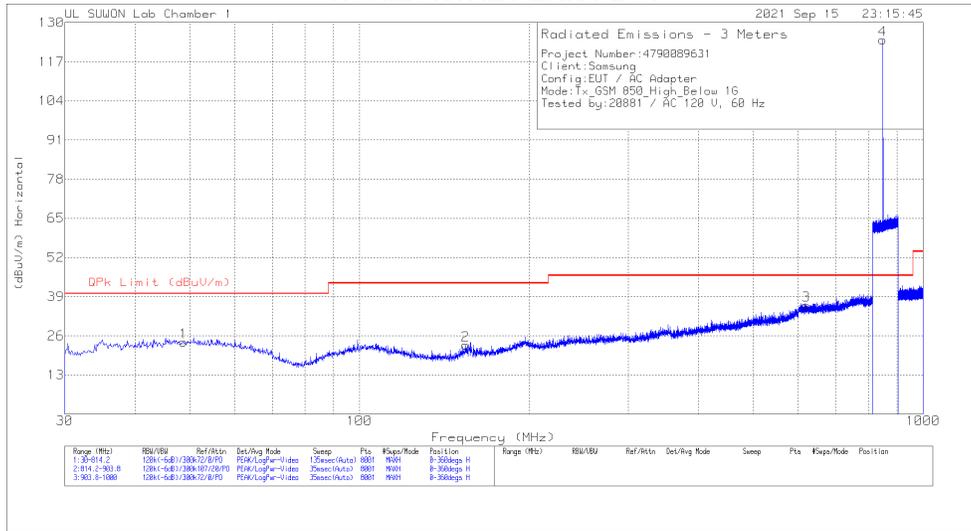
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degr)	Height (cm)	Polarity
1	36.6657	3.88	Pk	17.4	1.3	22.58	40	-17.42	0-360	300	H
2	153.0214	5.41	Pk	14	2.6	22.01	43.52	-21.51	0-360	100	H
3	438.0781	2.99	Pk	22.1	4.3	29.39	46.02	-16.63	0-360	100	H
4	836.5776	91.47	Pk	27.1	6	124.57	46.02	78.55	0-360	200	H
5	36.6657	13.95	Pk	17.4	1.3	32.65	40	-7.35	0-360	200	V
6	101.1662	2.38	Pk	17.7	2.1	22.18	43.52	-21.34	0-360	200	V
7	345.8366	3.07	Pk	20.8	3.8	27.67	46.02	-18.35	0-360	200	V
8	836.5804	79.61	Pk	27.1	6	112.71	46.02	66.69	0-360	100	V

Pk - Peak detector

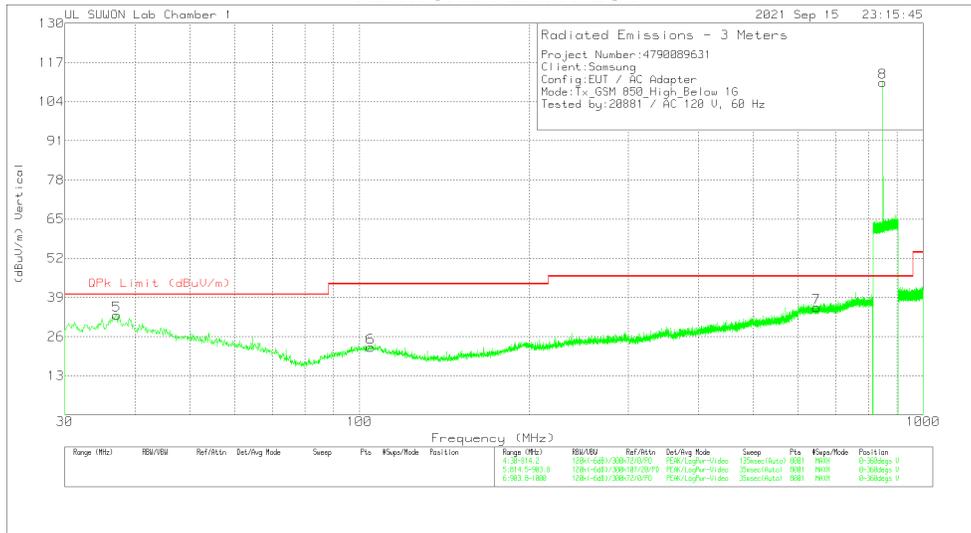
Note: Unwanted emissions captured from 824MHz to 849MHz and from 869MHz to 894MHz were the TX and RX signals generated from the call-simulator.

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	48.7228	2.62	Pk	19.8	1.5	23.92	40	-16.08	0-360	200	H
2	154.2957	6.12	Pk	14.1	2.7	22.92	43.52	-20.6	0-360	100	H
3	620.6006	5.78	Pk	25.2	5.2	36.18	46.02	-9.84	0-360	200	H
4	848.864	90.92	Pk	27.4	6	124.32	46.02	78.3	0-360	200	H
5	37.0578	14.3	Pk	17.5	1.3	33.1	40	-6.9	0-360	200	V
6	104.597	2.58	Pk	17.7	2.1	22.38	43.52	-21.14	0-360	300	V
7	646.8713	5.18	Pk	25.1	5.3	35.58	46.02	-10.44	0-360	200	V
8	848.8262	76.86	Pk	27.4	6.1	110.36	46.02	64.34	0-360	200	V

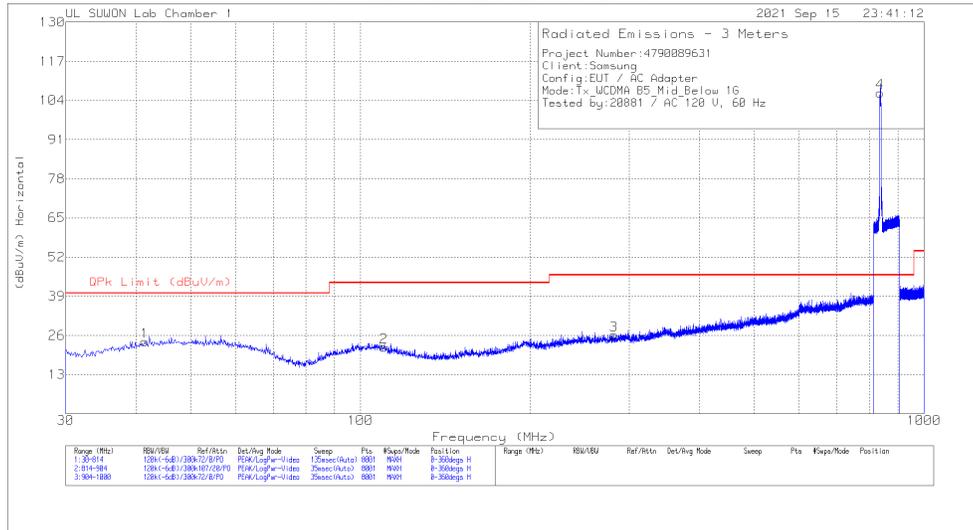
Pk - Peak detector

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

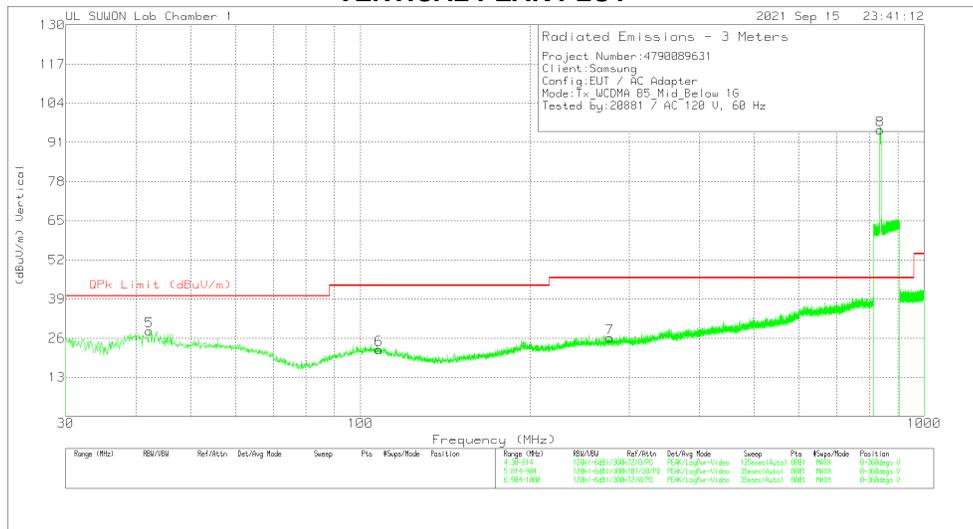
7.1.8. Below 1 GHz in the WCDMA Band 5

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	41.466	3.54	Pk	19	1.4	23.94	40	-16.06	0-360	100	H
2	110.164	2.73	Pk	17.2	2.2	22.13	43.52	-21.39	0-360	100	H
3	281.664	3.89	Pk	18.8	3.5	26.19	46.02	-19.83	0-360	100	H
4	836.635	73.47	Pk	27.1	6	106.57	46.02	60.55	0-360	200	H
5	42.201	7.94	Pk	19.1	1.4	28.44	40	-11.56	0-360	200	V
6	107.714	2.55	Pk	17.5	2.2	22.25	43.52	-21.27	0-360	200	V
7	276.96	4.05	Pk	18.7	3.4	26.15	46.02	-19.87	0-360	300	V
8	836.6688	61.98	Pk	27.1	6	95.08	46.02	49.06	0-360	200	V

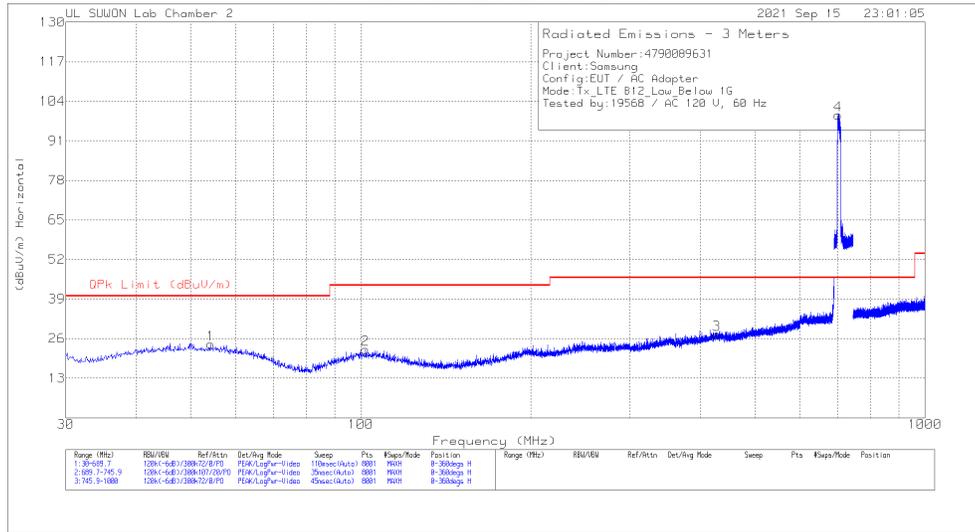
Pk - Peak detector

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

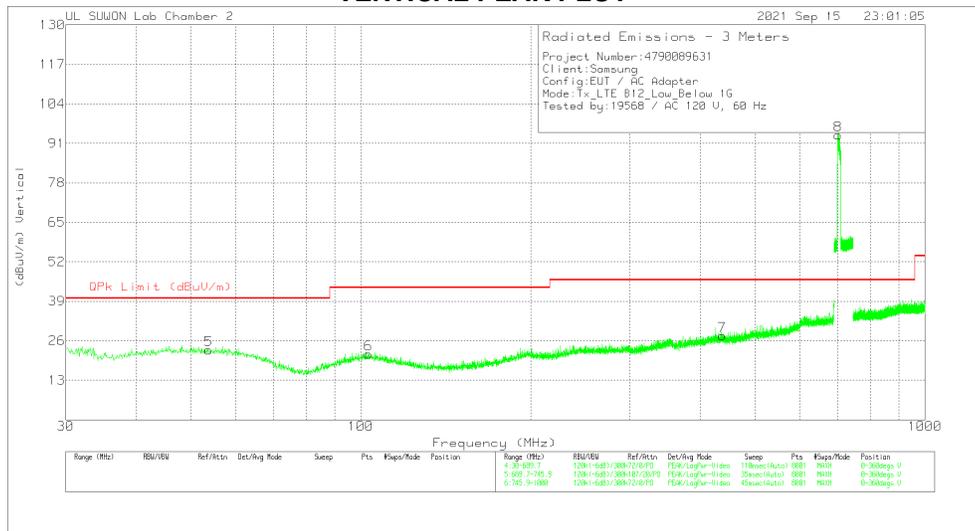
7.1.9. Below 1 GHz in the LTE Band 12

LOW CHANNEL(730.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

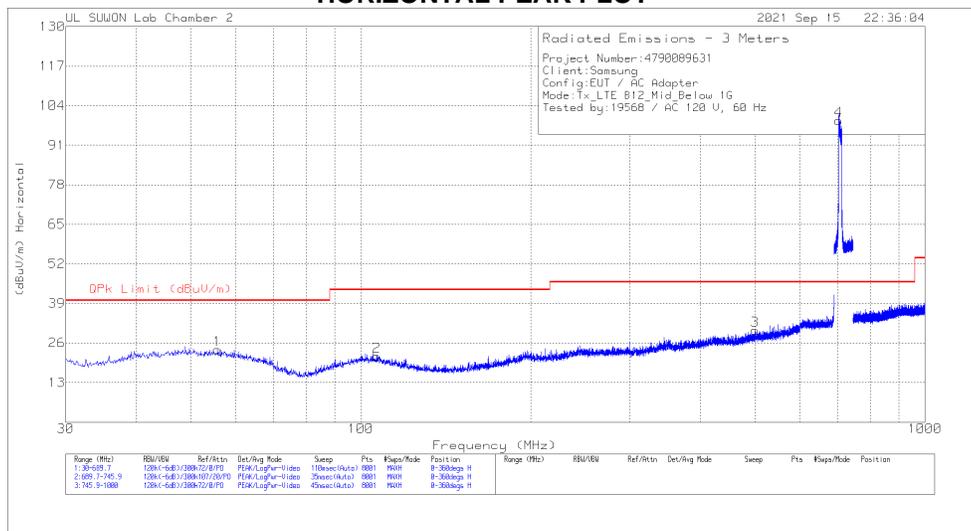
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	54.1617	3.99	Pk	19.4	.8	24.19	40	-15.81	0-360	300	H
2	101.9077	3.83	Pk	17.5	1.1	22.43	43.52	-21.09	0-360	300	H
3	427.6366	2.94	Pk	22.1	2.3	27.34	46.02	-18.68	0-360	300	H
4	701.2632	71.11	Pk	25.4	3	99.51	46.02	53.49	0-360	200	H
5	53.7493	2.59	Pk	19.5	.8	22.89	40	-17.11	0-360	300	V
6	103.2271	2.85	Pk	17.6	1.2	21.65	43.52	-21.87	0-360	200	V
7	436.9549	3.11	Pk	22.1	2.4	27.61	46.02	-18.41	0-360	300	V
8	701.0594	65.35	Pk	25.4	3	93.75	46.02	47.73	0-360	100	V

Pk - Peak detector

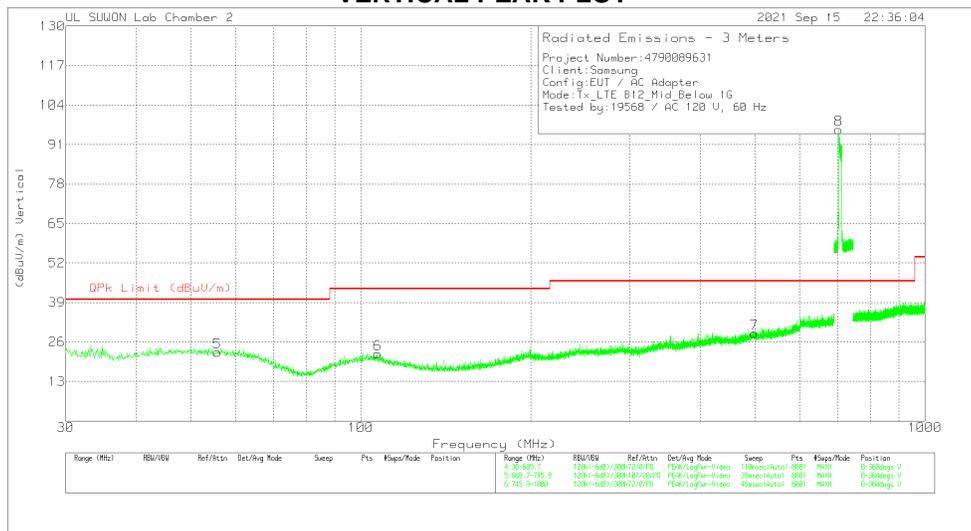
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(737.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

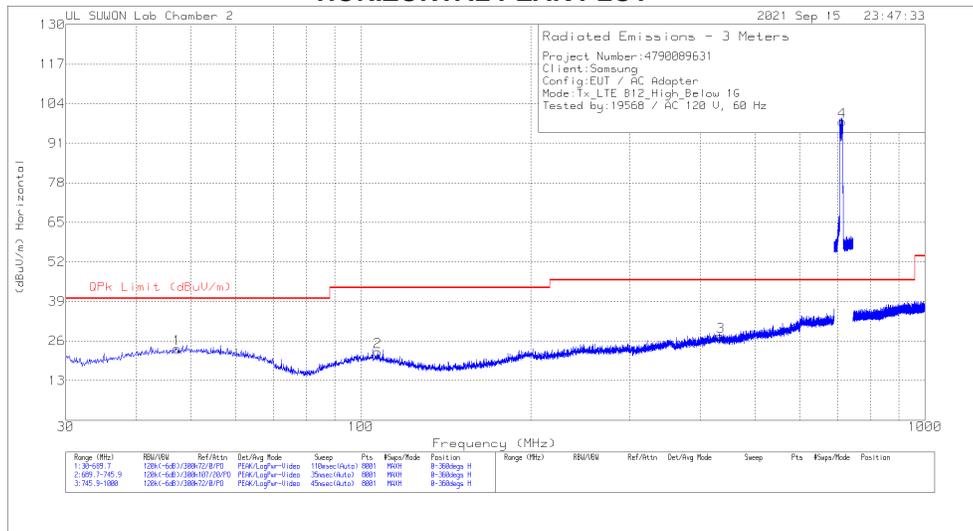
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	55.7285	3.73	Pk	19.2	.9	23.83	40	-16.17	0-360	200	H
2	106.6906	3.03	Pk	17.4	1.2	21.63	43.52	-21.89	0-360	100	H
3	499.2145	4.66	PK	23	2.5	30.16	46.02	-15.86	0-360	100	H
4	703.757	70.63	Pk	25.5	3	99.13	46.02	53.11	0-360	200	H
5	55.646	2.54	Pk	19.2	.9	22.64	40	-17.36	0-360	400	V
6	107.1029	3.48	Pk	17.4	1.2	22.08	43.52	-21.44	0-360	300	V
7	498.8846	3.36	Pk	23	2.5	28.86	46.02	-17.16	0-360	400	V
8	703.1459	67.5	Pk	25.5	3	96	46.02	49.98	0-360	100	V

Pk - Peak detector

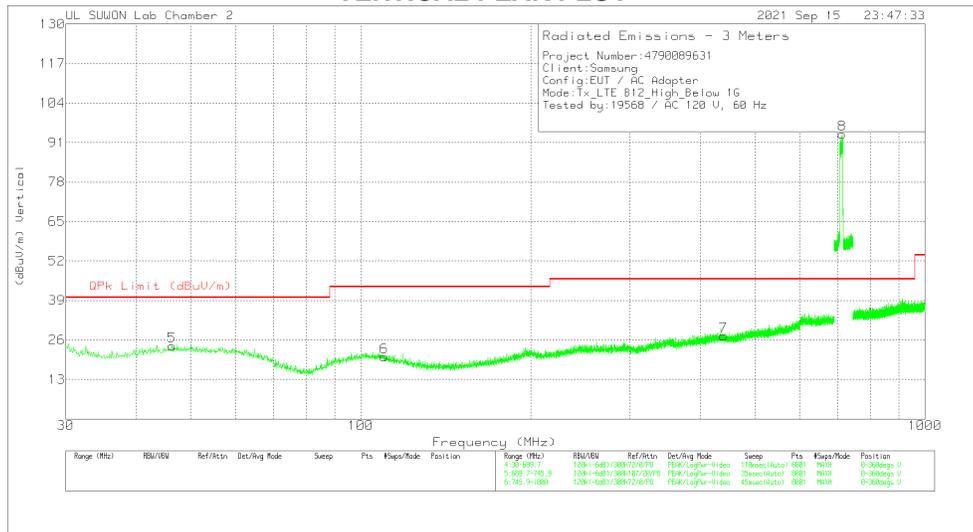
Note: Unwanted emissions captured from 699MHz to 716MHz and from 729MHz to 746MHz were the TX and RX signals generated from the call-simulator.

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	47.2348	2.82	Pk	19.8	.8	23.42	40	-16.58	0-360	300	H
2	107.1854	3.77	Pk	17.4	1.2	22.37	43.52	-21.15	0-360	100	H
3	434.8109	2.94	PK	22.1	2.4	27.44	46.02	-18.58	0-360	300	H
4	713.2057	69.52	Pk	25.6	3	98.12	46.02	52.1	0-360	200	H
5	46.2452	3.42	Pk	19.7	.8	23.92	40	-16.08	0-360	200	V
6	110.154	2.39	Pk	16.9	1.2	20.49	43.52	-23.03	0-360	300	V
7	439.5113	2.99	PK	22	2.4	27.39	46.02	-18.63	0-360	400	V
8	713.6061	65.1	Pk	25.6	3	93.7	46.02	47.68	0-360	100	V

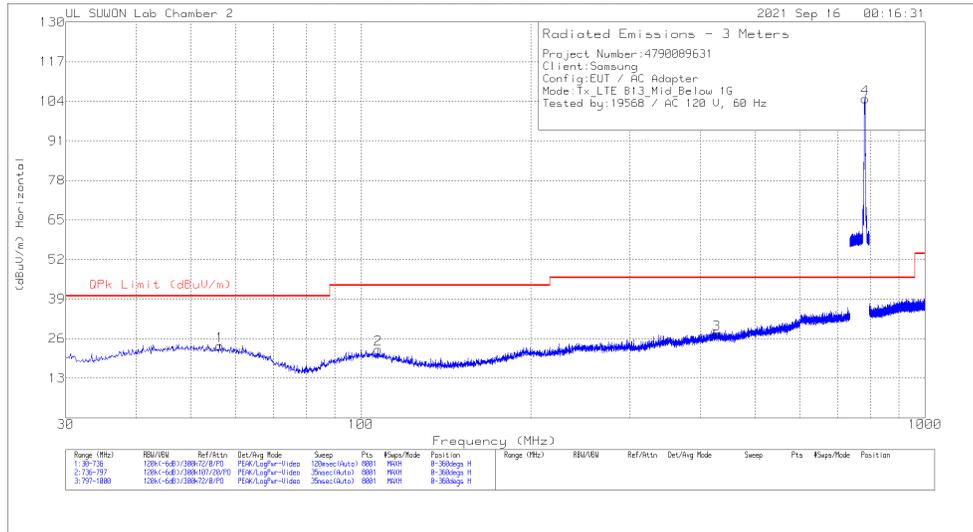
Pk - Peak detector

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

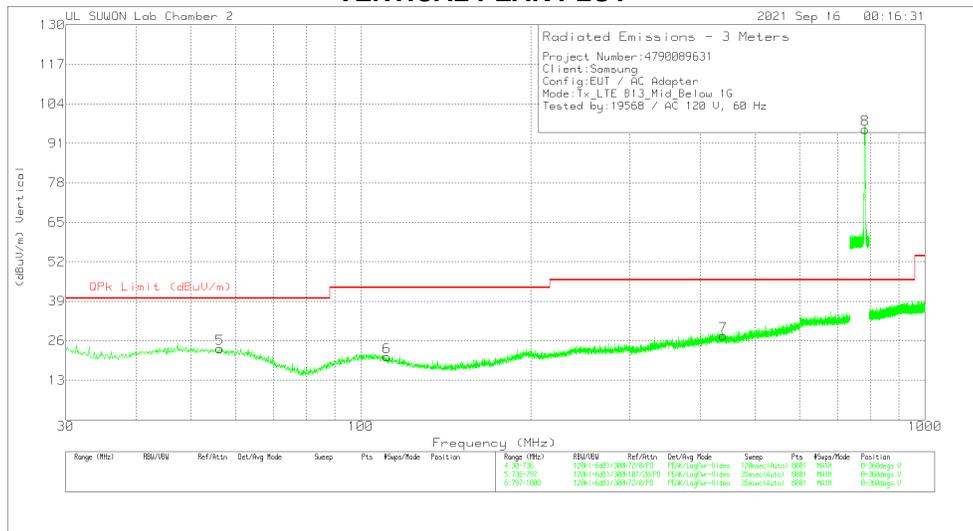
7.1.10. Below 1 GHz in the LTE Band 13

MID CHANNEL(751.0 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	56.2985	3.45	Pk	19.2	.9	23.55	40	-16.45	0-360	200	H
2	107.307	3.86	Pk	17.4	1.2	22.46	43.52	-21.06	0-360	200	H
3	427.0809	3.04	Pk	22.1	2.3	27.44	46.02	-18.58	0-360	100	H
4	784.1748	75.13	Pk	26.5	3.2	104.83	46.02	58.81	0-360	200	H
5	56.2985	3.29	Pk	19.2	.9	23.39	40	-16.61	0-360	400	V
6	111.2783	3.02	Pk	16.6	1.2	20.82	43.52	-22.7	0-360	400	V
7	438.8623	3.28	Pk	22	2.4	27.68	46.02	-18.34	0-360	300	V
8	784.2053	65.96	Pk	26.5	3.2	95.66	46.02	49.64	0-360	100	V

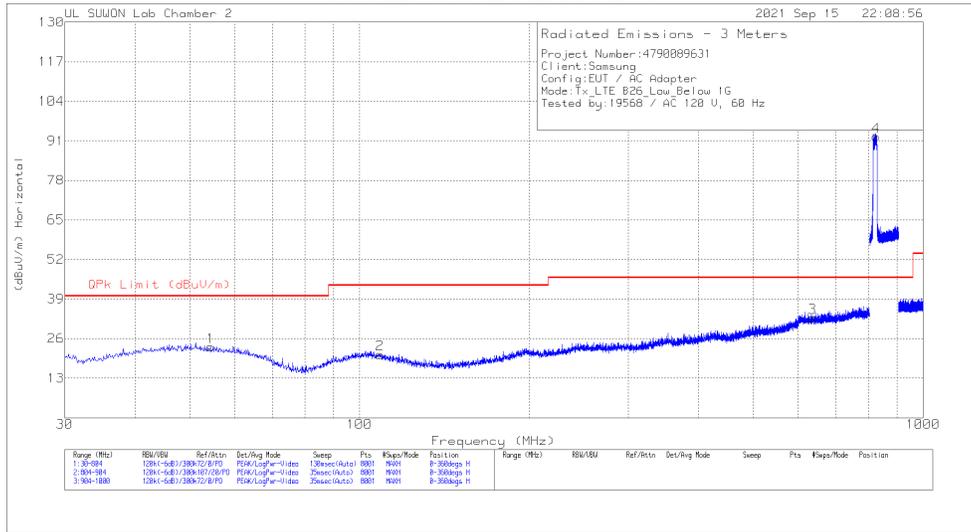
Pk - Peak detector

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

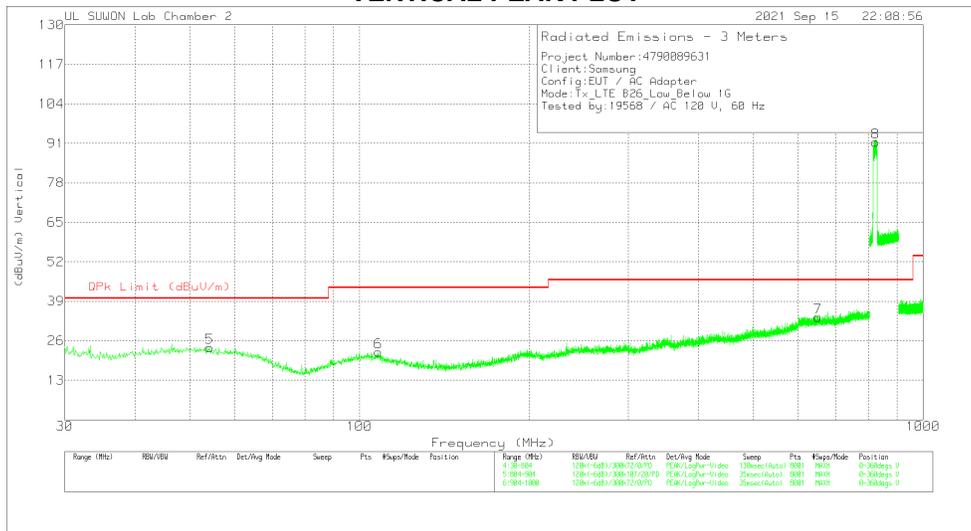
7.1.11. Below 1 GHz in the LTE Band 26

LOW CHANNEL (860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

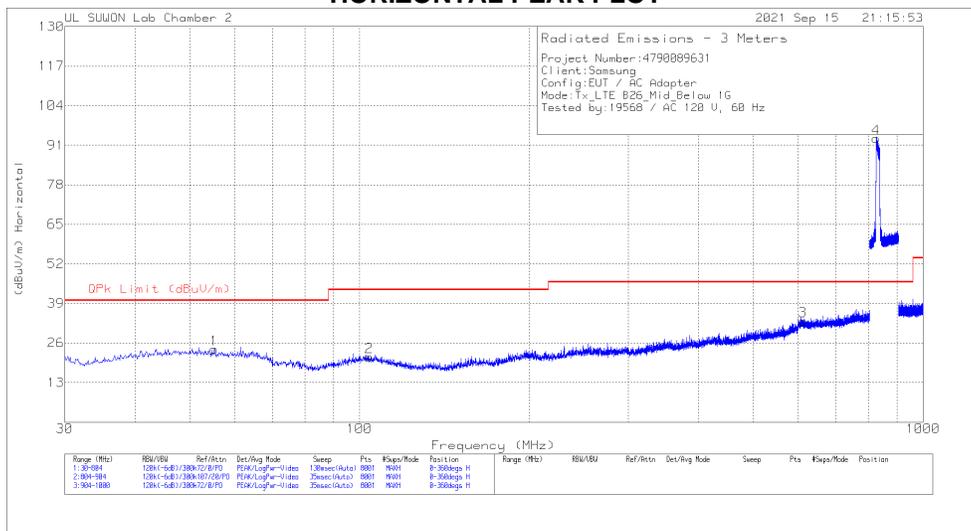
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	54.4778	3.05	Pk	19.4	.8	23.25	40	-16.75	0-360	100	H
2	108.7545	2.45	Pk	17.2	1.2	20.85	43.52	-22.67	0-360	300	H
3	636.5258	5.15	PK	25	2.8	32.95	46.02	-13.07	0-360	300	H
4	824.7125	62.46	Pk	26.7	3.2	92.36	46.02	46.34	0-360	300	H
5	54.1875	3.6	Pk	19.4	.8	23.8	40	-16.2	0-360	300	V
6	107.9805	3.74	Pk	17.3	1.2	22.24	43.52	-21.28	0-360	200	V
7	650.6513	5.75	PK	25.1	2.9	33.75	46.02	-12.27	0-360	400	V
8	823.2625	61.45	PK	26.7	3.2	91.35	46.02	45.33	0-360	100	V

Pk - Peak detector

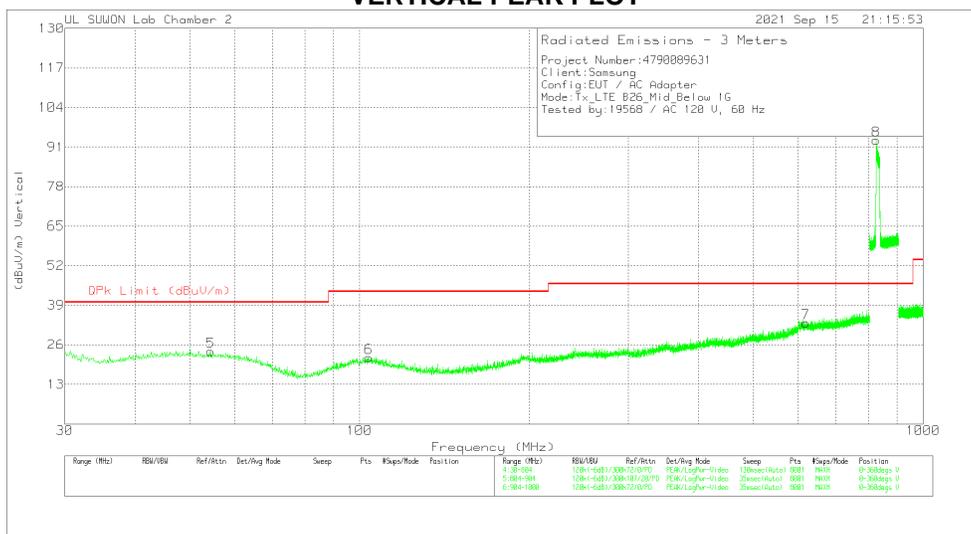
Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

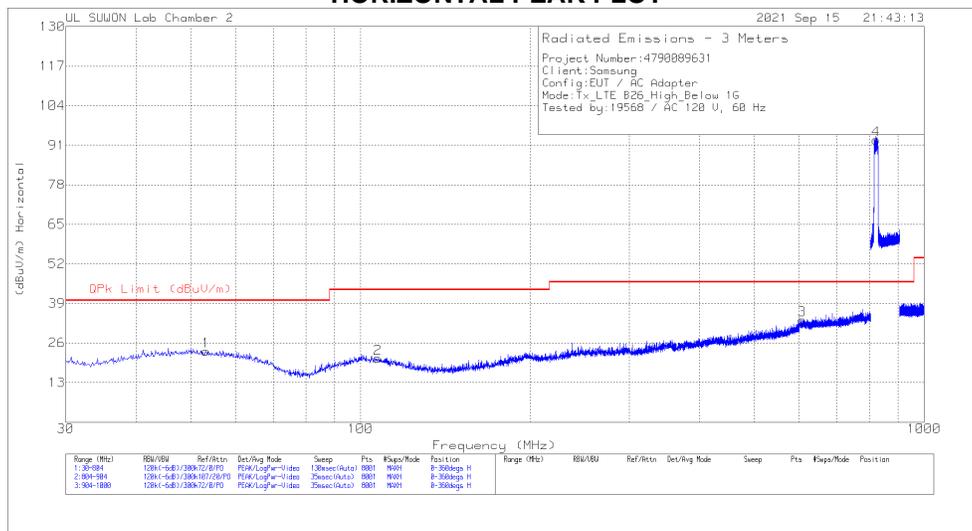
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	55.2518	3.86	Pk	19.3	.8	23.96	40	-16.04	0-360	300	H
2	104.0138	2.61	Pk	17.6	1.2	21.41	43.52	-22.11	0-360	100	H
3	611.0805	5.19	Pk	25.3	2.8	33.29	46.02	-12.73	0-360	100	H
4	825.925	63.31	PK	26.7	3.2	93.21	46.02	47.19	0-360	300	H
5	54.4778	3.55	PK	19.4	.8	23.75	40	-16.25	0-360	400	V
6	103.917	2.97	PK	17.6	1.2	21.77	43.52	-21.75	0-360	400	V
7	619.401	5.3	PK	25.1	2.8	33.2	46.02	-12.82	0-360	400	V
8	826.05	63.33	PK	26.7	3.2	93.23	46.02	47.21	0-360	100	V

Pk - Peak detector

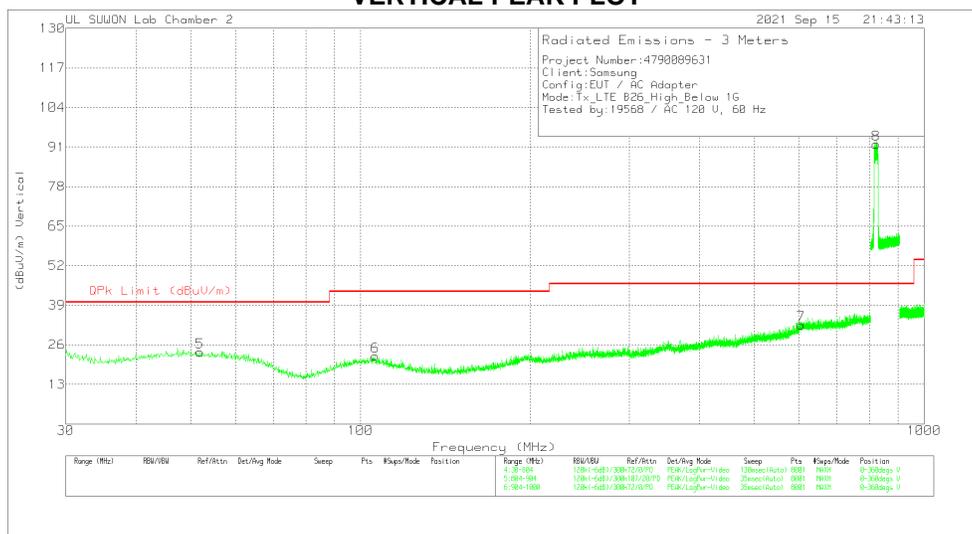
Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

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 (Degs)	Height (cm)	Polarity
1	53.22	2.89	Pk	19.6	.8	23.29	40	-16.71	0-360	300	H
2	107.4	2.29	Pk	17.4	1.2	20.89	43.52	-22.63	0-360	100	H
3	608.178	5.49	Pk	25.2	2.8	33.49	46.02	-12.53	0-360	300	H
4	822.05	62.72	PK	26.8	3.2	92.72	46.02	46.7	0-360	400	H
5	51.8655	3.14	PK	19.7	.8	23.64	40	-16.36	0-360	200	V
6	106.239	3.64	PK	17.5	1.2	22.34	43.52	-21.18	0-360	300	V
7	604.7918	4.71	PK	25.1	2.8	32.61	46.02	-13.41	0-360	300	V
8	822.1875	61.89	PK	26.8	3.2	91.89	46.02	45.87	0-360	100	V

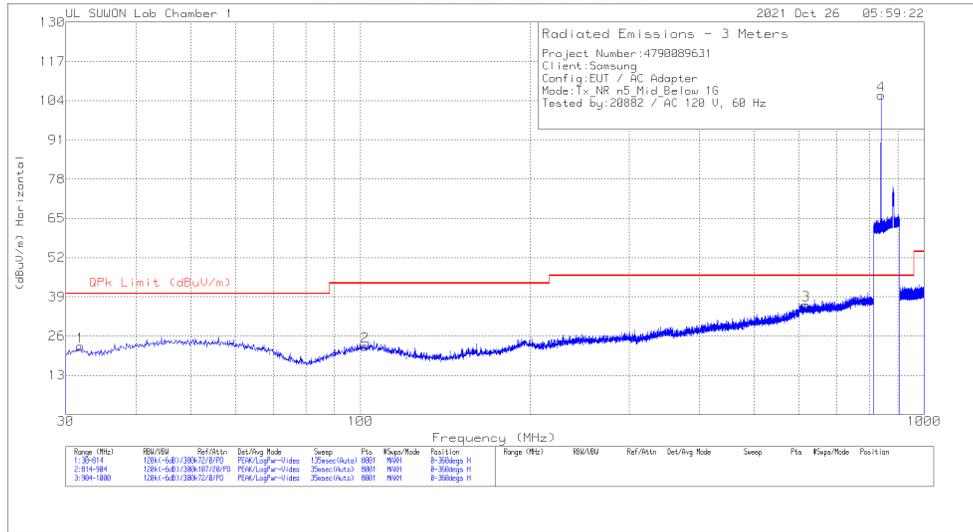
Pk - Peak detector

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

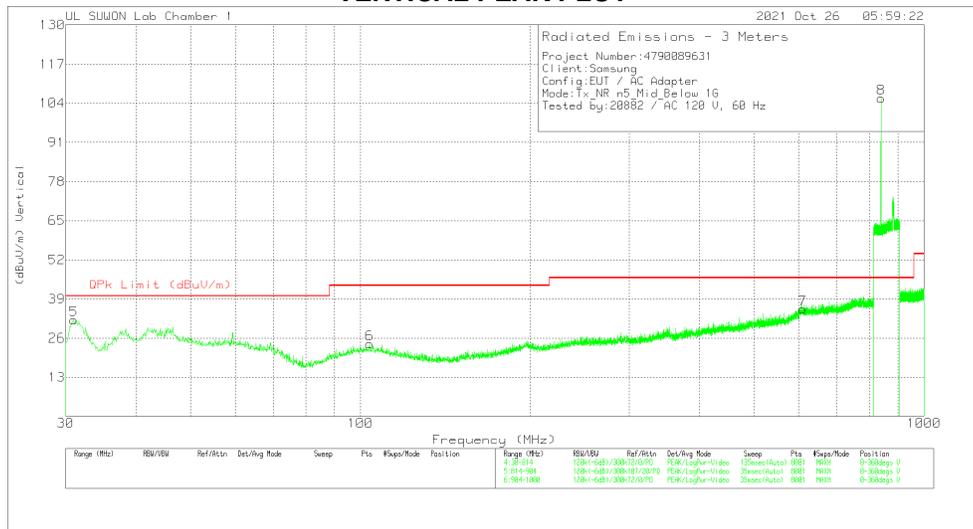
7.1.12. Below 1 GHz in the 5G NR Band 5

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	31.862	5.79	Pk	15.6	1.2	22.59	40	-17.41	0-360	100	H
2	101.834	2.87	Pk	17.7	2.1	22.67	43.52	-20.85	0-360	100	H
3	617.804	5.97	Pk	25.2	5.2	36.37	46.02	-9.65	0-360	300	H
4	838.615	72.58	Pk	27.1	6.1	105.78	46.02	59.76	0-360	200	H
5	30.98	15.38	Pk	15.7	1	32.08	40	-7.92	0-360	200	V
6	103.794	4.27	Pk	17.7	2.1	24.07	43.52	-19.45	0-360	300	V
7	608.886	5.43	Pk	25.2	5.1	35.73	46.02	-10.29	0-360	400	V
8	838.6038	72.44	Pk	27.1	6.1	105.64	46.02	59.62	0-360	100	V

Pk - Peak detector

Note. Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

END OF TEST REPORT