



CERTIFICATION TEST REPORT

Report Number. : 4790047184-E1V1

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

Model : NP545XLA

FCC ID : A3LNP545XLA1

EUT Description : WCDMA/LTE/5G NR Laptop + BT/BLE, DTS/UNII a/b/g/n/ac/ax

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

Date Of Issue:

2021-09-06

Prepared by:

UL Korea, Ltd.

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Suwon Test Site: UL Korea, Ltd. Suwon Laboratory

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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	2021-09-06	Initial issue	Yeonhee Lim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: WCDMA/LTE/5G NR Laptop + BT/BLE, DTS/UNII a/b/g/n/ac/ax
MODEL NUMBER: NP545XLA
SERIAL NUMBER: GE5J930R700048X (RADIATED)
DATE TESTED: 2021-08-27 ~ 2021-08-31;

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:



Yeonhee Lim
Suwon Lab Technician
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 2, Clause 4.4.3 in IEC Guide 115:2007.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a WCDMA/LTE/5G NR Laptop + BT/BLE, DTS/UNII a/b/g/n/ac/ax.
This test report addresses the WWAN receiver mode.

5.2. TEST MODE

Mode	Description
LTE BAND 26	Communicating with Call simulator(CMW500)
LTE BAND 71	Communicating with Call simulator(CMW500)
5G NR BAND n71	Communicating with Call simulator(E7515B)

5.3. WORST-CASE ORIENTATION AND MODE

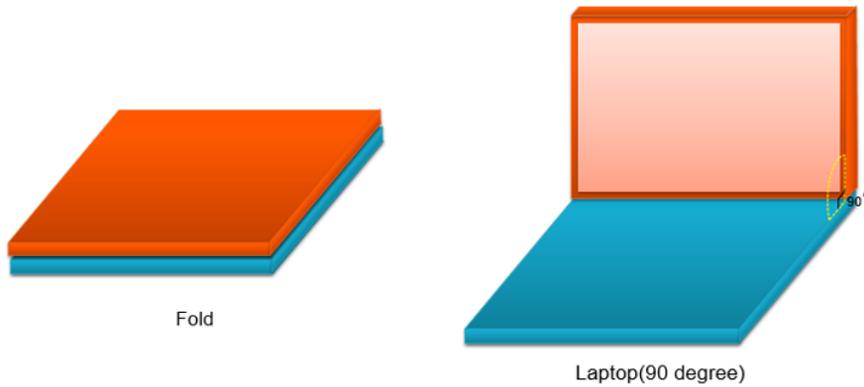
i. Worst Axis Condition

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
LTE B26	Laptop	-
LTE B71	Laptop	-
NR n71	Laptop	-

ii. Foldable Condition

The Fundamental of the EUT was investigated in two conditions(Fold and Laptop).



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	R37R32A00XADK3	N/A
Data Cable	SAMSUNG	EP-DW767JWE	N/A	N/A

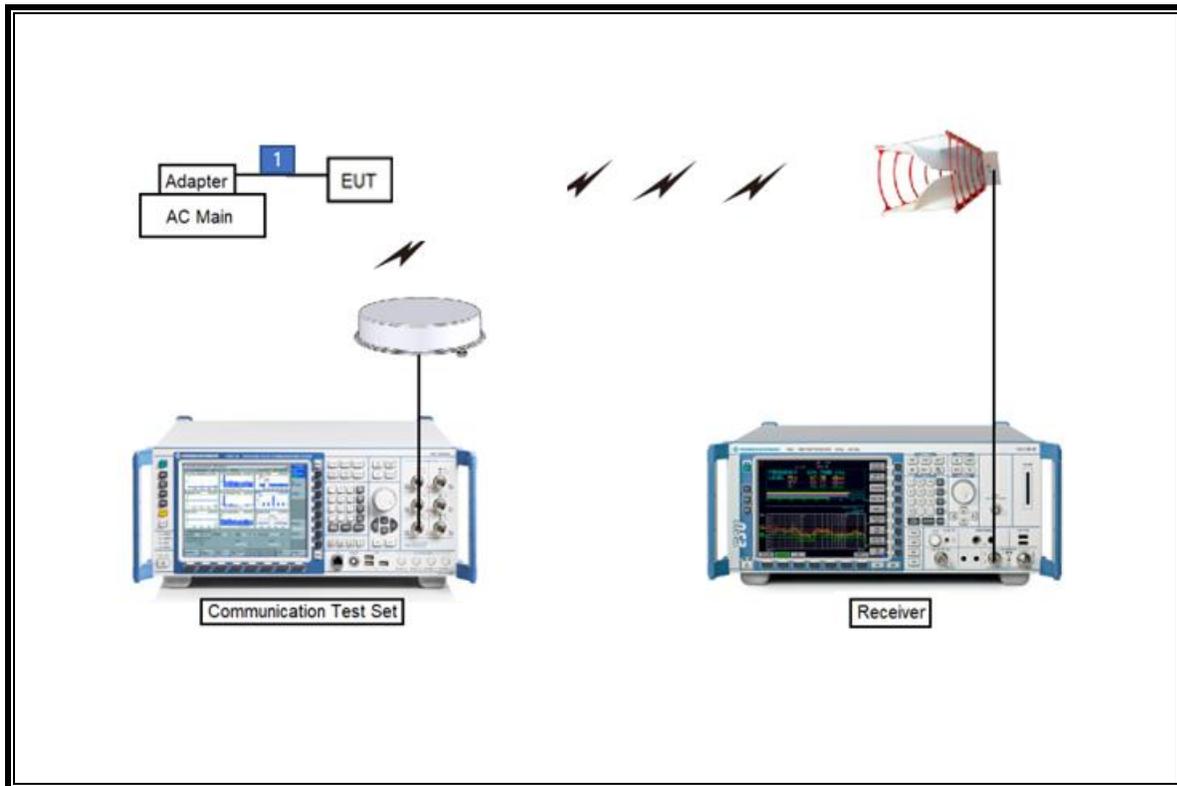
I/O CABLE

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	2022/08/04
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
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:

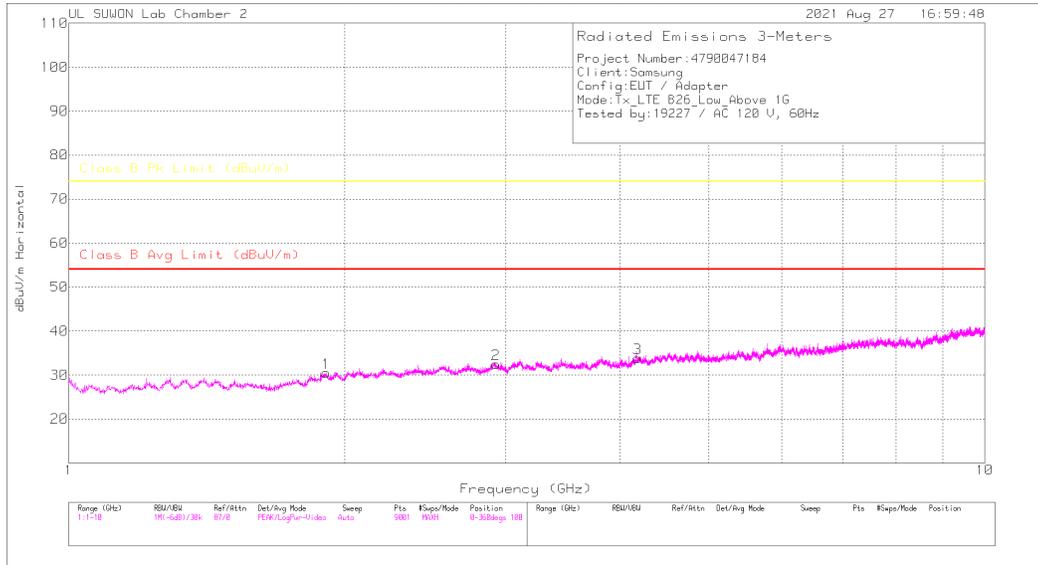
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

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

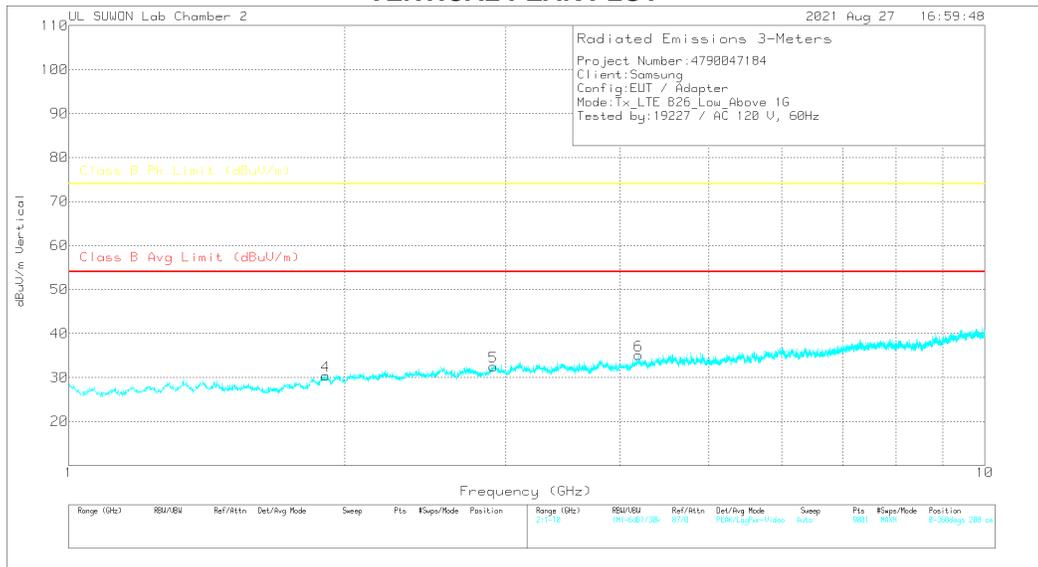
7.1.1. Above 1GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

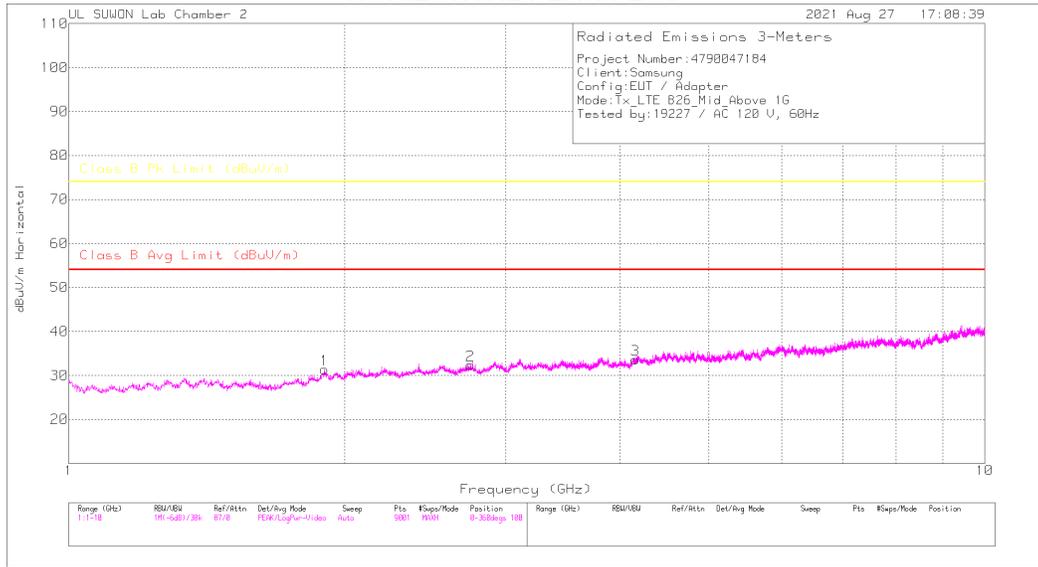
Marker	Frequency (GHz)	Mean Reading (dBuV)	Det	3117_00168724	1-18GHz(dB)	1GHz_HP(dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	AvCISPR(Margin (dB))	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.909	30	PK		-30.9	.6	30.5	-	-	74	-43.5	0-360	100	H
2	2.927	29.38	PK		-30	.7	32.48	-	-	74	-41.52	0-360	100	H
3	4.177	28.02	PK		-28.1	.5	33.82	-	-	74	-40.18	0-360	200	H
4	1.907	29.78	PK		-30.8	.6	30.38	-	-	74	-43.62	0-360	100	V
5	2.907	29.19	PK		-29.7	.7	32.49	-	-	74	-41.51	0-360	200	V
6	4.188	29.26	PK		-28.1	.5	35.06	-	-	74	-38.94	0-360	100	V

Peak – Peak Detector

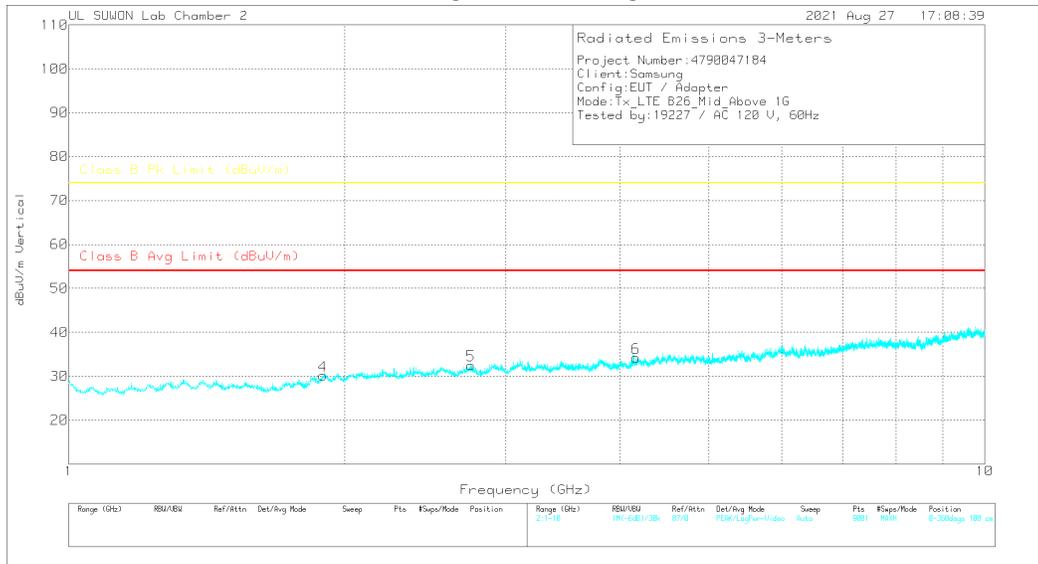
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

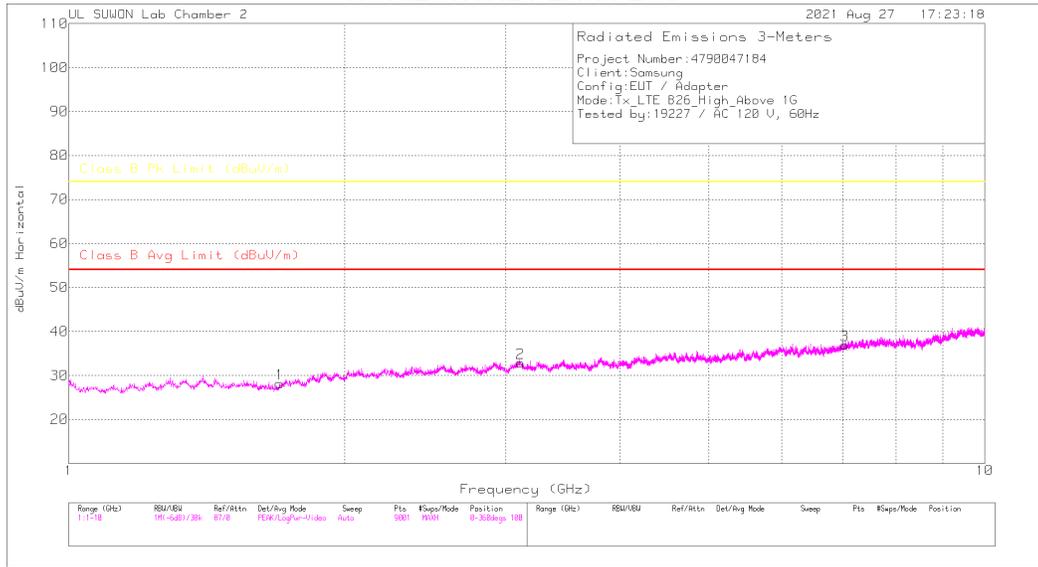
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Avr(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.901	30.92	Avg	30.8	-30.9	.6	31.42	-	-	74	-42.58	0-360	100	H
2	2.746	29.35	Avg	32.2	-30	.8	32.35	-	-	74	-41.65	0-360	100	H
3	4.157	27.73	Avg	33.4	-28	.5	33.63	-	-	74	-40.37	0-360	100	H
4	1.893	29.72	Avg	30.7	-31	.7	30.12	-	-	74	-43.88	0-360	200	V
5	2.747	29.34	Avg	32.2	-29.8	.8	32.54	-	-	74	-41.46	0-360	200	V
6	4.159	28.43	Avg	33.4	-28.1	.5	34.23	-	-	74	-39.77	0-360	100	V

Pk – Peak Detector

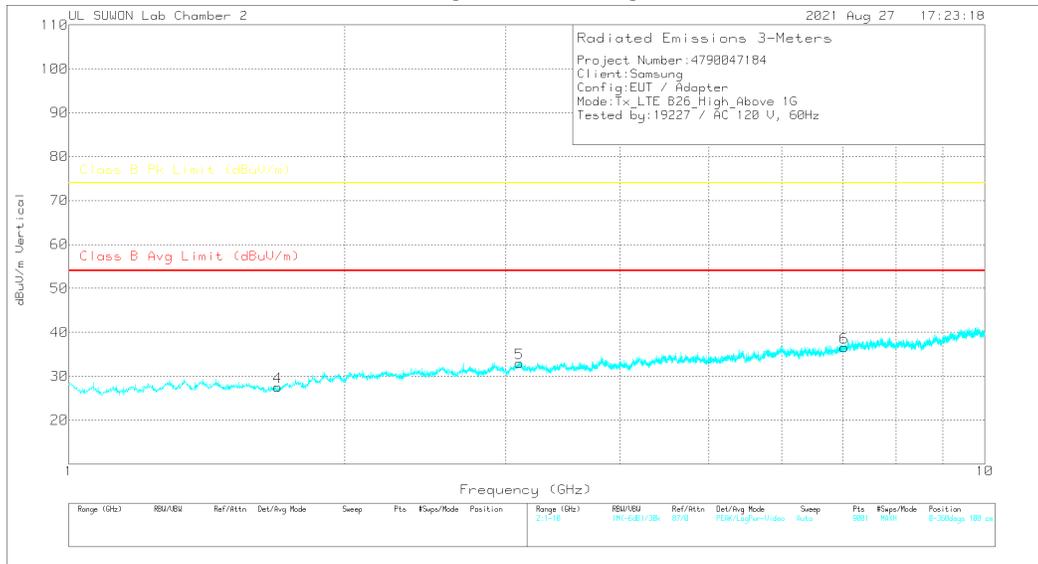
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

HIGH CHANNEL(892.5 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	1.699	29.95	PK	28.7	-31.2	.7	28.15	-	-	74	-45.85	0-360	200	H
2	3.112	28.59	PK	32.9	-29.3	.7	32.89	-	-	74	-41.11	0-360	200	H
3	7.035	26.07	PK	36	-25.6	.5	36.97	-	-	74	-37.03	0-360	100	H
4	1.691	29.29	PK	28.7	-31.2	.7	27.49	-	-	74	-46.51	0-360	200	V
5	3.104	28.83	PK	32.9	-29.5	.7	32.93	-	-	74	-41.07	0-360	200	V
6	7.028	25.71	PK	36	-25.7	.5	36.51	-	-	74	-37.49	0-360	100	V

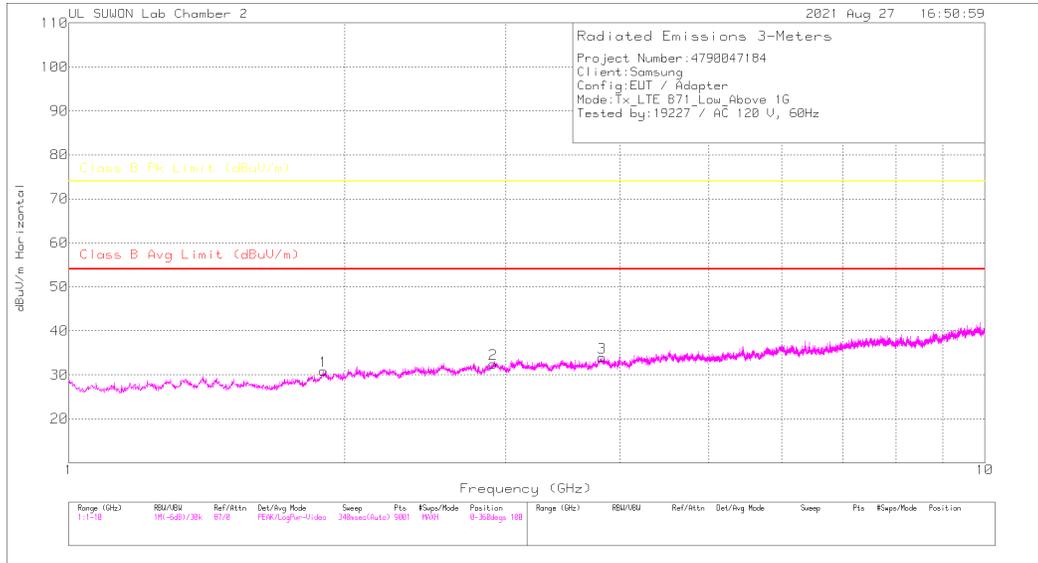
PK - Peak Detector

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

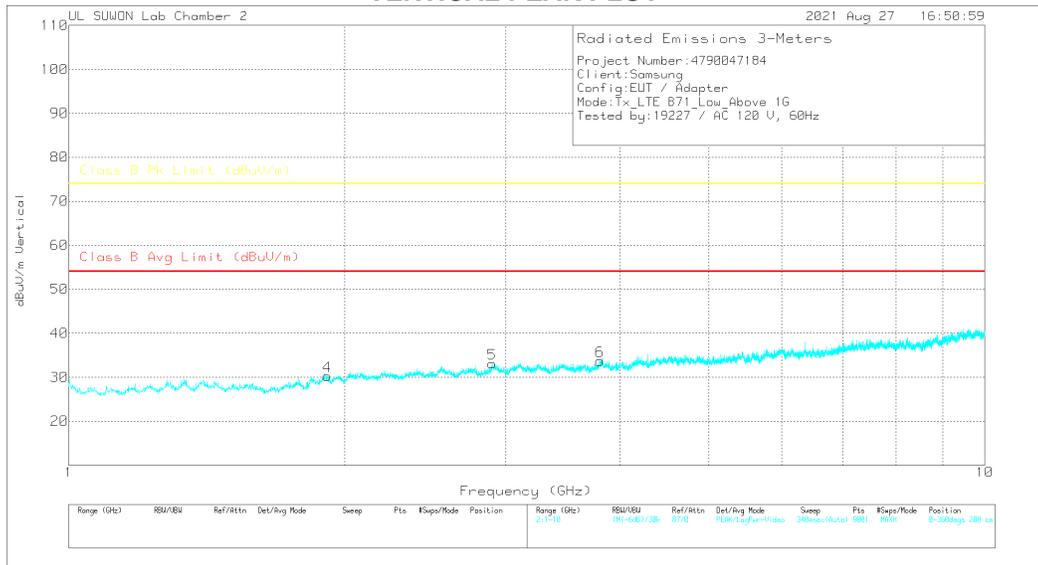
7.1.2. Above 1 GHz in the LTE Band 71

LOW CHANNEL(618.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

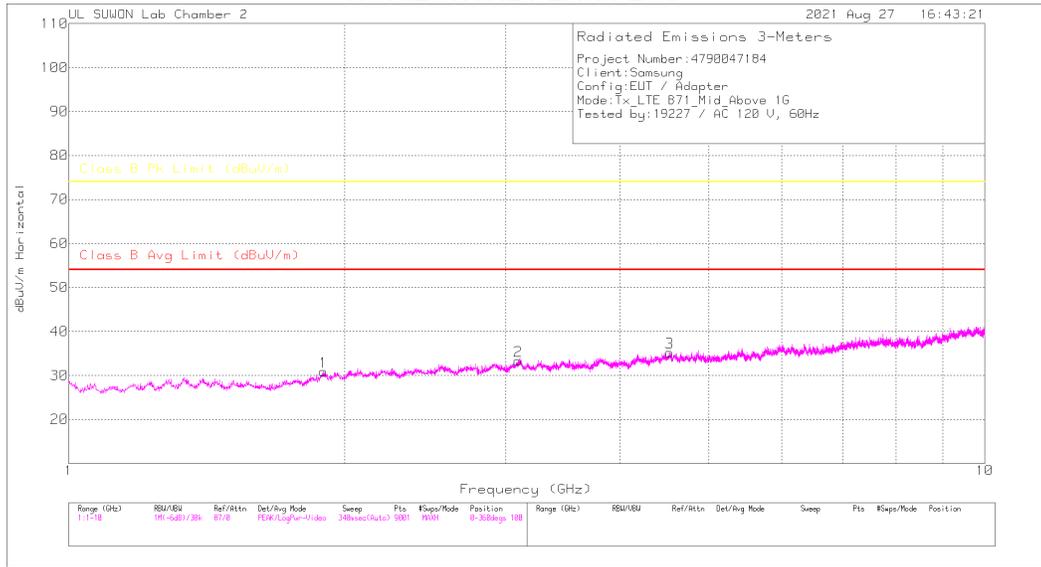
Marker	Frequency (GHz)	Meter Reading (dBu)	Det	3117_00168724	1-19GHz(dB)	1GHz_HP(dB)	Corrected Reading (dBu/m)	Class B Avg Limit (dBu/m)	Av(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.898	30.48	PK		-30.9	.6	30.88	-	-	74	-43.12	0-360	200	H
2	2.906	29.22	PK		-29.7	.7	32.52	-	-	74	-41.48	0-360	200	H
3	3.822	28.58	PK		-28.6	.6	33.98	-	-	74	-40.02	0-360	200	H
4	1.916	23.71	PK		-30.9	.6	30.21	-	-	74	-43.79	0-360	200	V
5	2.899	23.79	PK		-29.7	.7	33.09	-	-	74	-40.91	0-360	100	V
6	3.802	28.56	PK		-28.6	.6	33.66	-	-	74	-40.34	0-360	100	V

Peak - Peak Detector

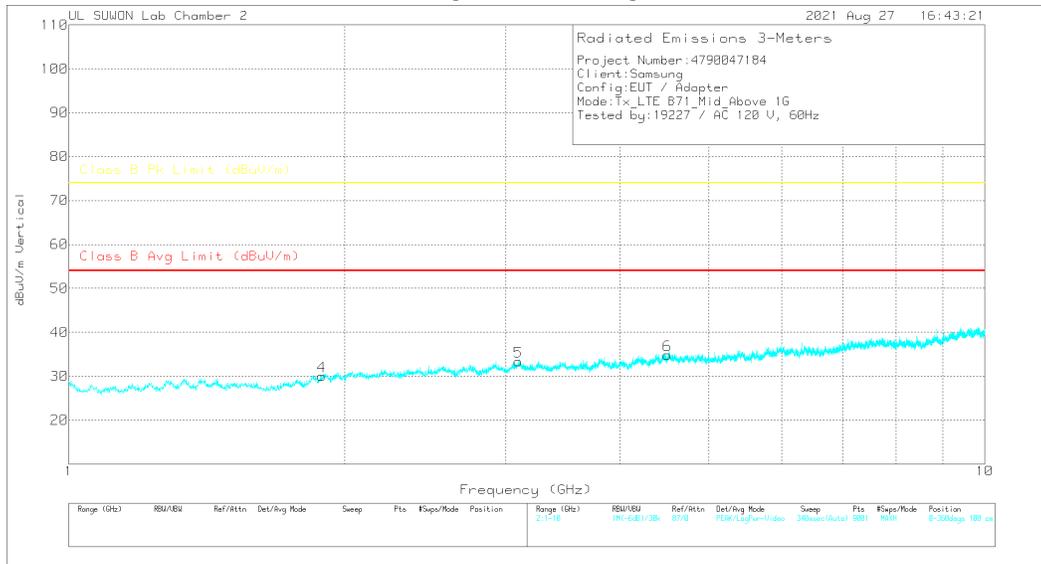
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

MID CHANNEL(634.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

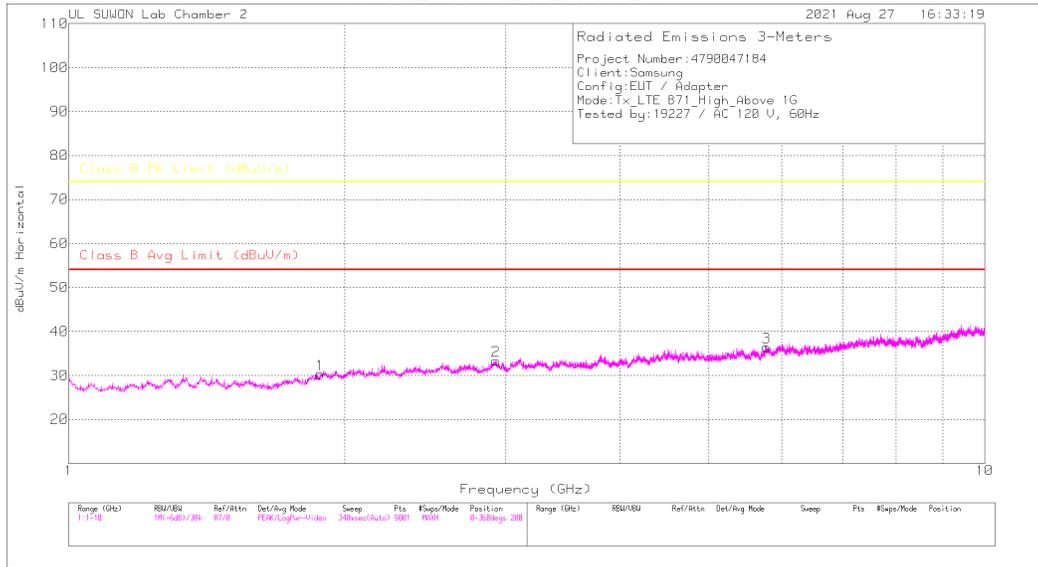
Marker	Frequency (GHz)	Meter Reading (dBu/m)	Det	3117_00168724	1-18GHz[dB]	1GHz_HP[dB]	Corrected Reading (dBu/m)	Class B Avg Limit (dBu/m)	Avr(CISPR)Margin (dB)	Class B Pk Limit (dBu/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.898	30.43	Pk	30.7	-30.9	.6	30.83	-	-	74	-43.17	0-360	200	H
2	3.097	29.46	Pk	32.9	-29.7	.7	33.36	-	-	74	-40.64	0-360	100	H
3	4.528	28.96	Pk	34.1	-28.3	.5	35.26	-	-	74	-38.74	0-360	100	H
4	1.89	29.5	Pk	30.7	-30.9	.7	30	-	-	74	-44	0-360	200	V
5	3.095	29.56	Pk	32.9	-29.8	.7	33.36	-	-	74	-40.64	0-360	200	V
6	4.506	28.5	Pk	34	-28.2	.5	34.8	-	-	74	-39.2	0-360	100	V

Peak - Peak Detector

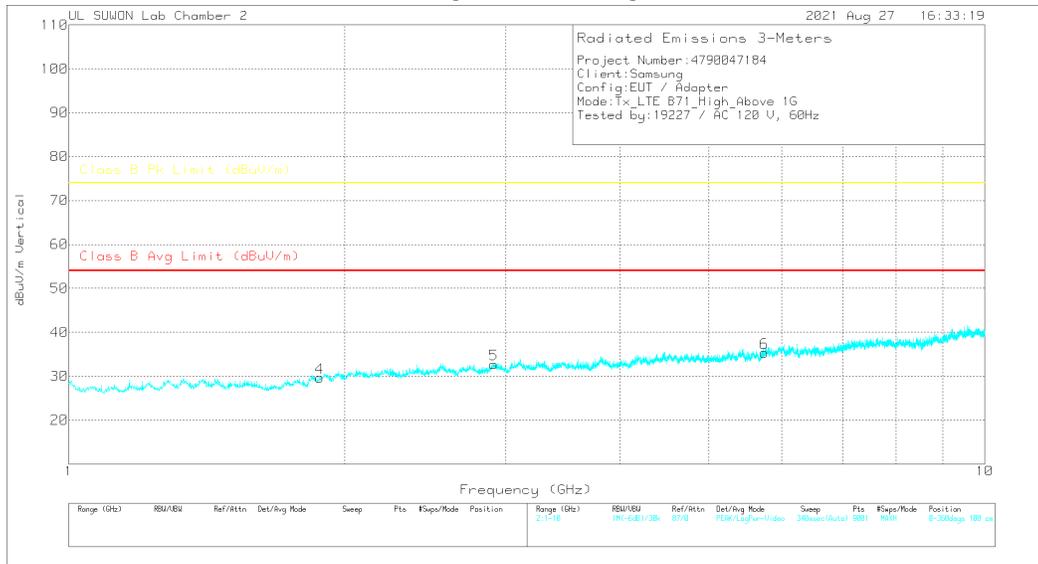
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

HIGH CHANNEL(650.2 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)	Avr(CISPR)Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.882	29.9	Pk		-31	.7	30.2	-	-	74	-43.8	0-360	100	H
2	2.925	30.3	Pk		-30	.7	33.4	-	-	74	-40.6	0-360	200	H
3	5.778	28.06	Pk		-26.9	.5	36.46	-	-	74	-37.54	0-360	100	H
4	1.878	29.35	Pk		-31	.7	29.65	-	-	74	-44.35	0-360	200	V
5	2.912	29.37	Pk		-29.7	.7	32.77	-	-	74	-41.23	0-360	200	V
6	5.745	27.23	Pk		-27.1	.5	35.33	-	-	74	-38.67	0-360	200	V

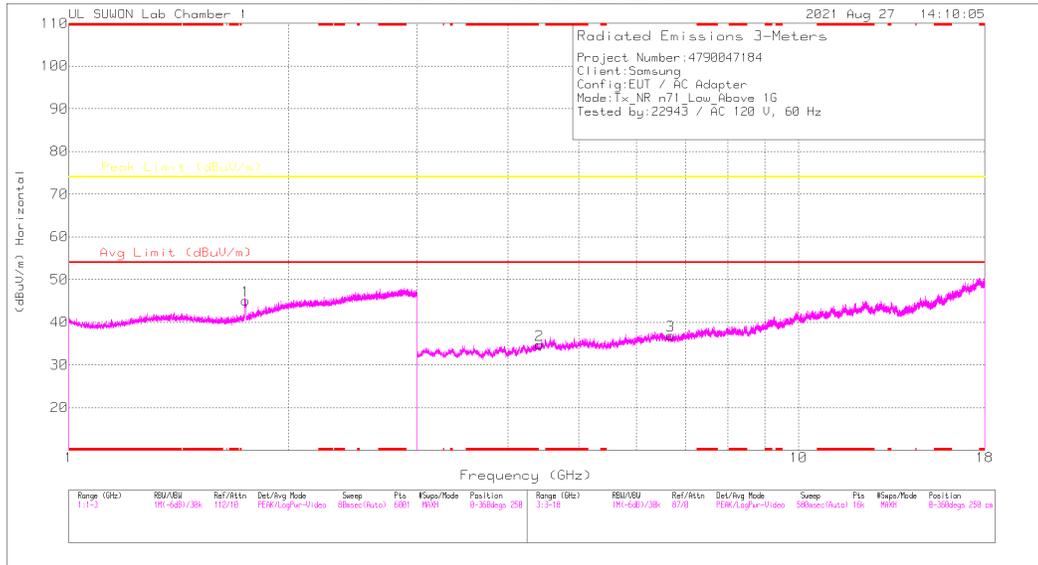
PK - Peak Detector

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

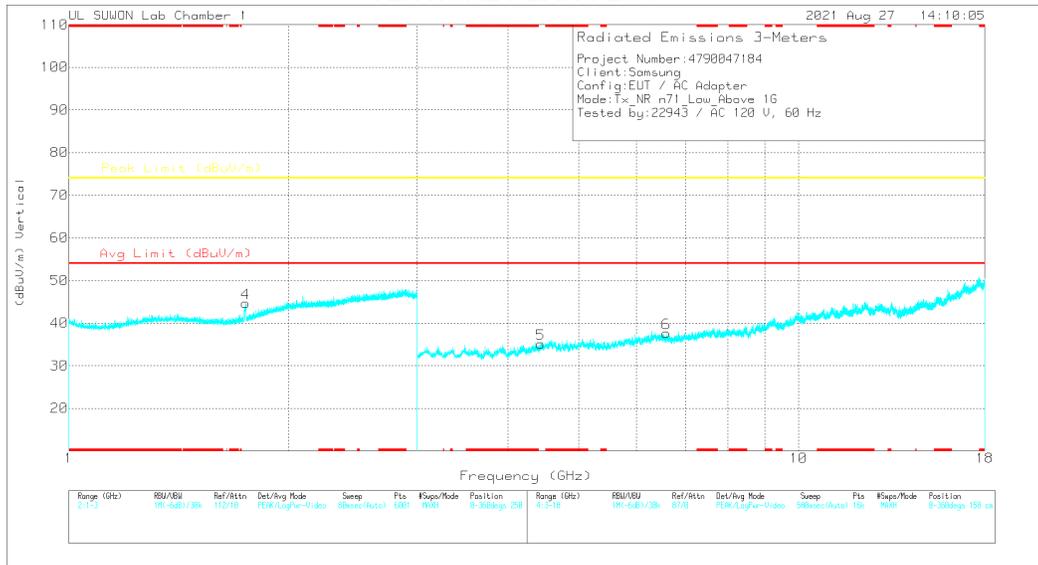
7.1.3. Above 1 GHz in the 5G NR Band 71

LOW CHANNEL(618.8 MHz)

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	1.748	42.19	PK	29	-26.8	.7	45.09	-	-	74	-28.91	0-360	150	H
4	1.74667	41.78	PK	29	-26.8	.7	44.68	-	-	74	-29.32	0-360	250	V

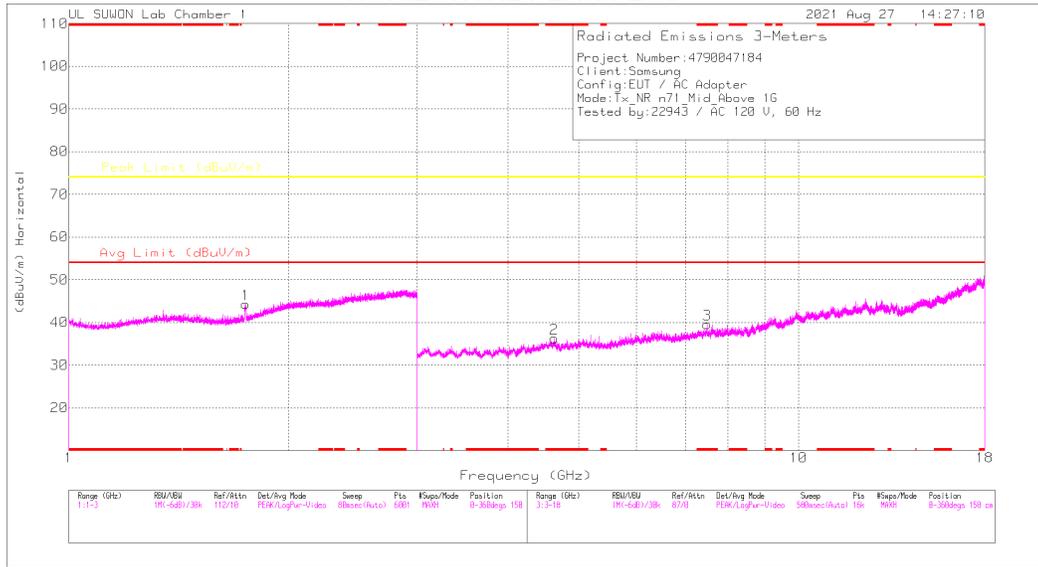
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	4.41741	32.11	PK	34.1	-32	.5	34.71	-	-	74	-39.29	0-360	250	H
3	6.67852	28.7	PK	35.4	-27.7	.5	36.9	-	-	74	-37.1	0-360	250	H
5	4.43428	32.4	PK	34.1	-31.9	.5	35.1	-	-	74	-38.9	0-360	150	V
6	6.5904	29.98	PK	35.4	-28.2	.5	37.68	-	-	74	-36.32	0-360	150	V

PK - Peak Detector

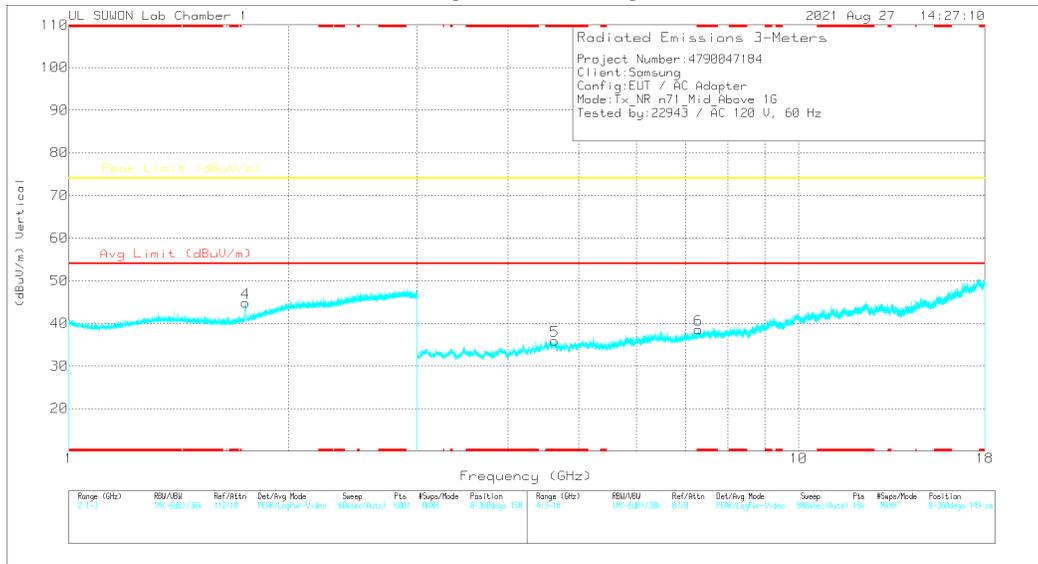
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

MID CHANNEL(634.5 MHz)

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	1.74833	41.39	PK	29	-26.8	.7	44.29	-	-	74	-29.71	0-360	150	H
4	1.748	41.89	PK	29	-26.8	.7	44.79	-	-	74	-29.21	0-360	250	V

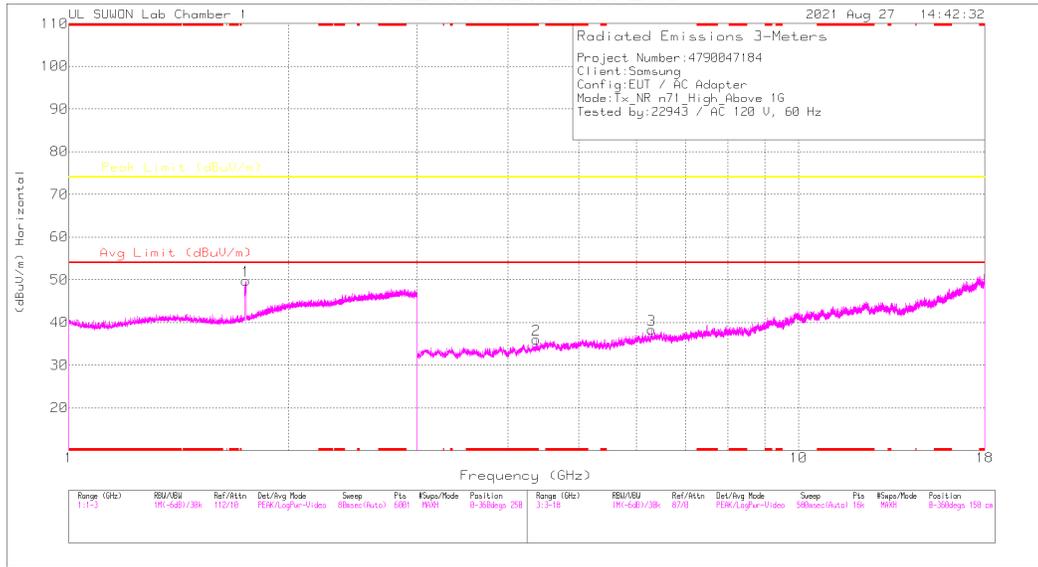
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_HP[dB]	1GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.63021	32.99	PK	34.2	-31.4	.5	35.29	-	-	74	-37.71	0-360	150	H
3	* 7.49222	30.29	PK	35.7	-27	.6	33.59	-	-	74	-34.41	0-360	150	H
5	* 4.63302	32.47	PK	34.2	-31.3	.5	35.87	-	-	74	-38.13	0-360	149	V
6	* 7.29067	29.56	PK	35.8	-27.3	.5	38.56	-	-	74	-35.44	0-360	149	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak Detector

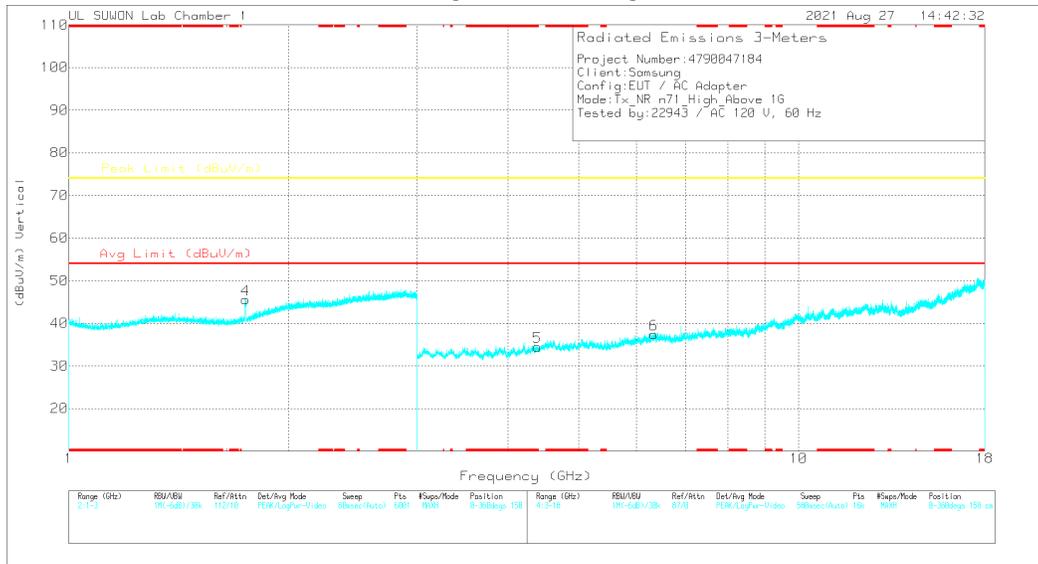
Note: Unwanted emissions on the harmonic frequency were generated from the call-simulator with the TX and RX signals.

HIGH CHANNEL(650.2 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	1GHz_JP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.74867	46.92	PK	29	-26.8	.7	49.82	-	-	74	-24.18	0-360	150	H
4	1.747	42.71	PK	29	-26.8	.7	45.61	-	-	74	-28.39	0-360	150	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	3GHz_JP[dB]	1GHz_JP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.36396	33.69	PK	34	-32.2	.5	35.99	-	-	74	-38.01	0-360	250	H
3	6.29229	31.07	PK	35.5	-28.8	.5	33.27	-	-	74	-35.73	0-360	150	H
5	* 4.38554	32.11	PK	34	-32.1	.5	34.51	-	-	74	-39.49	0-360	150	V
6	6.32979	30.35	PK	35.5	-29	.5	37.35	-	-	74	-36.65	0-360	250	V

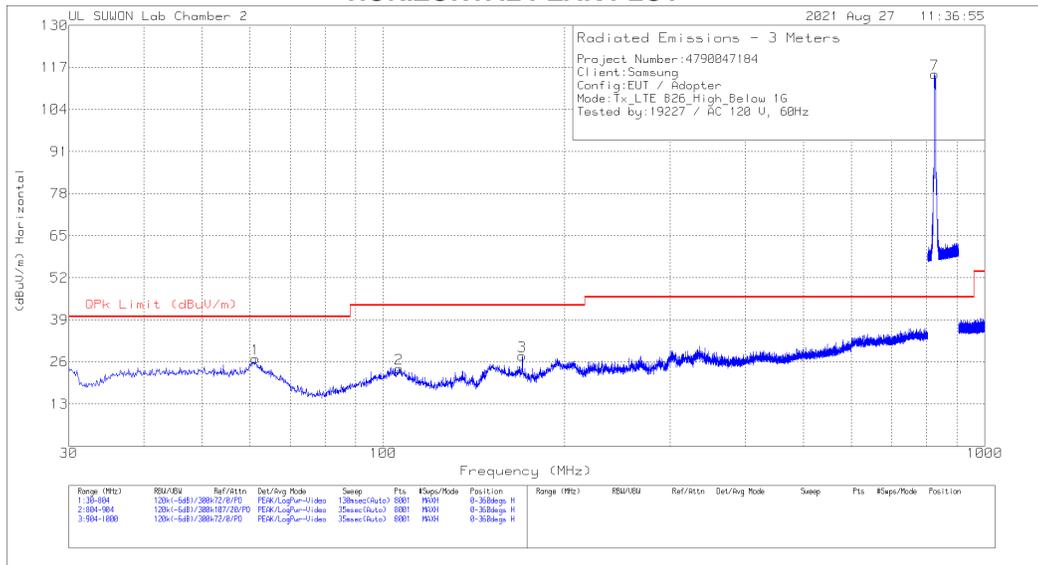
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak Detector

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

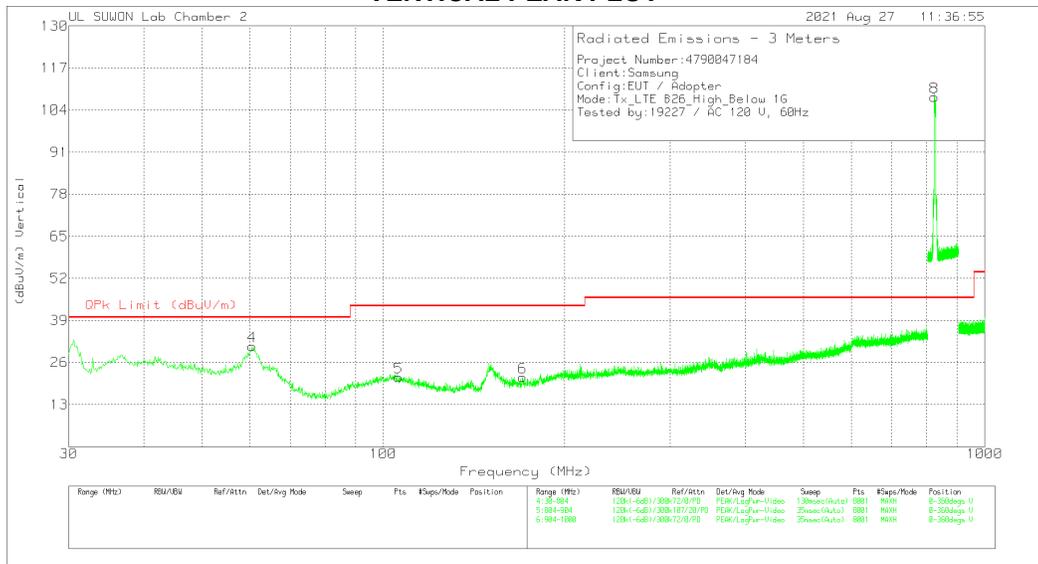
7.1.4. Below 1 GHz in the LTE Band 26

LOW CHANNEL(860.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

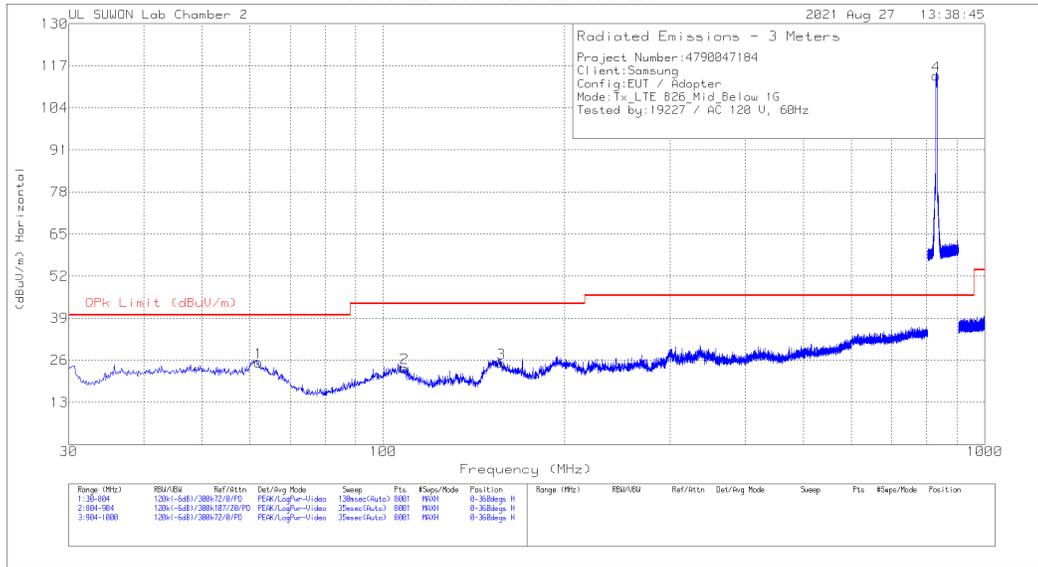
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	61.2503	8.04	Pk	18.2	.8	27.04	40	-12.96	0-360	400	H
2	106.239	5.33	Pk	17.5	1.2	24.03	43.52	-19.49	0-360	200	H
3	170.2875	11.93	Pk	14.5	1.4	27.83	43.52	-15.69	0-360	200	H
7	825.4875	84.98	Pk	26.7	3.3	114.98	46.02	68.96	0-360	100	H
4	60.4763	12	Pk	18.4	.6	31	40	-9	0-360	100	V
5	106.0455	2.67	Pk	17.5	1.2	21.37	43.52	-22.15	0-360	200	V
6	170.3843	5.37	Pk	14.5	1.5	21.37	43.52	-22.15	0-360	100	V
8	824.6125	78.17	Pk	26.7	3.2	108.07	46.02	62.05	0-360	200	V

Pk - Peak detector

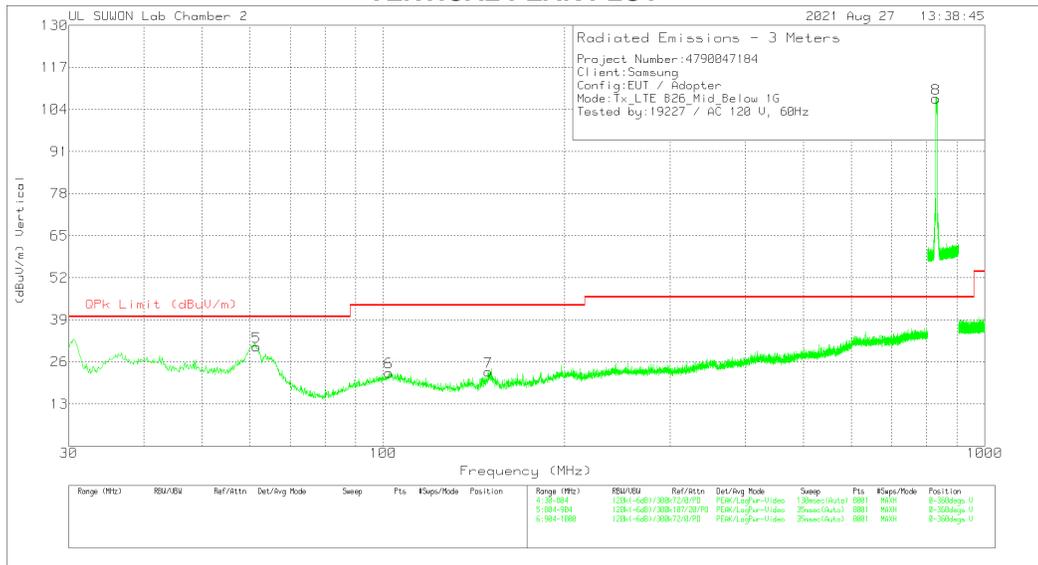
Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(876.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

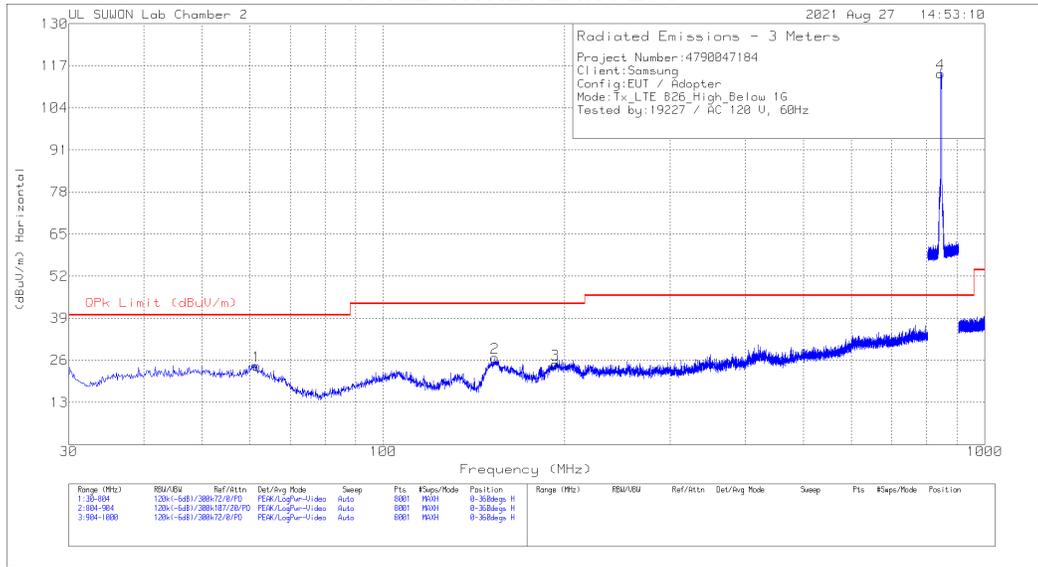
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	62.0243	6.31	Pk	18	1	25.31	40	-14.69	0-360	400	H
2	108.4643	5.04	Pk	17.3	1.3	23.64	43.52	-19.88	0-360	300	H
3	157.323	9.81	Pk	14.1	1.3	25.21	43.52	-18.31	0-360	200	H
4	829.9875	83.86	Pk	26.8	3.2	113.86	46.02	67.84	0-360	100	H
5	61.5405	11.83	Pk	18.1	.8	30.73	40	-9.27	0-360	100	V
6	102.1755	4.1	Pk	17.5	1.1	22.7	43.52	-20.82	0-360	200	V
7	149.3895	7.85	Pk	13.8	1.3	22.95	43.52	-20.57	0-360	100	V
8	829.7875	77.23	Pk	26.8	3.3	107.33	46.02	61.31	0-360	100	V

Pk - Peak detector

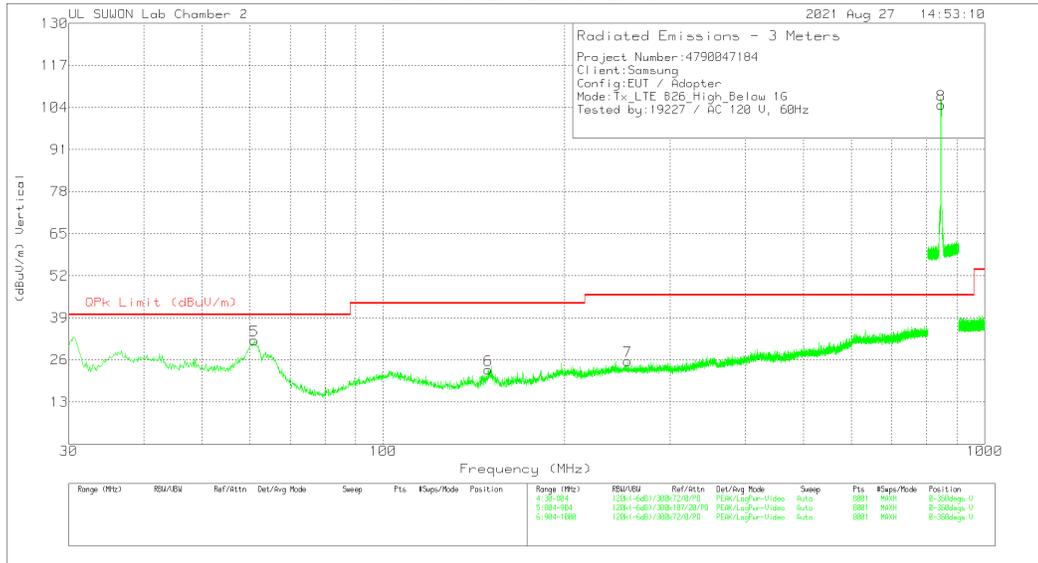
Note: Unwanted emissions captured from 814MHz to 849MHz and from 849MHz to 859MHz were the TX and RX signals generated from the call-simulator.

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	61.5405	5.38	Pk	18.1	.8	24.28	40	-15.72	0-360	100	H
2	153.453	11.5	Pk	13.9	1.4	26.8	43.52	-16.72	0-360	200	H
3	193.2173	6.35	Pk	16.9	1.5	24.75	43.52	-18.77	0-360	200	H
4	845.075	84.16	Pk	27.2	3.2	114.56	46.02	68.54	0-360	100	H
5	61.0568	12.83	Pk	18.3	.9	32.03	40	-7.97	0-360	100	V
6	149.3895	7.85	Pk	13.8	1.3	22.95	43.52	-20.57	0-360	100	V
7	254.7503	5.61	Pk	18.4	1.7	25.71	46.02	-20.31	0-360	100	V
8	845.55	74.39	Pk	27.2	3.3	104.89	46.02	58.87	0-360	100	V

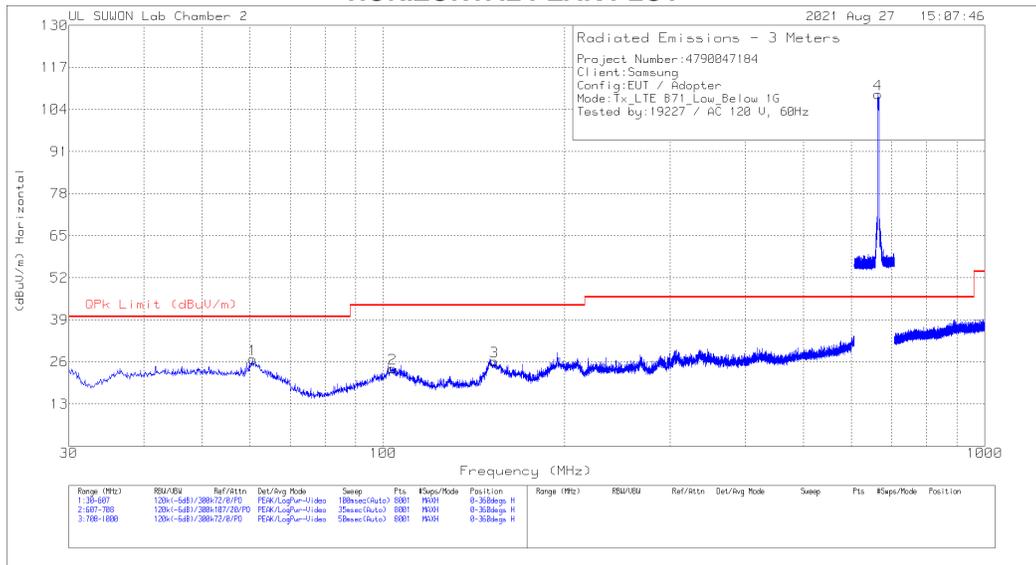
Pk - Peak detector

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

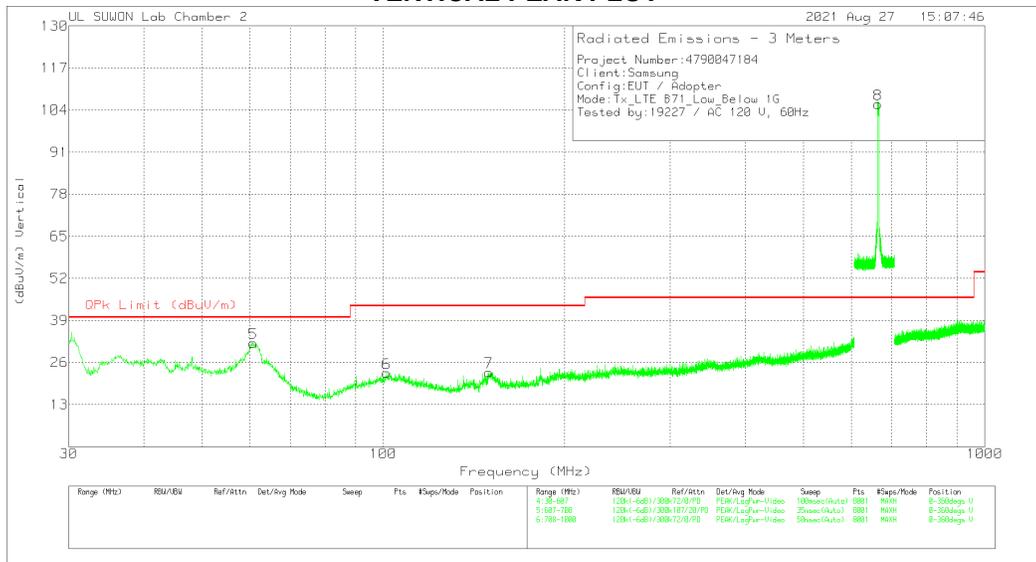
7.1.5. Below 1 GHz in the LTE Band 71

LOW CHANNEL(618.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

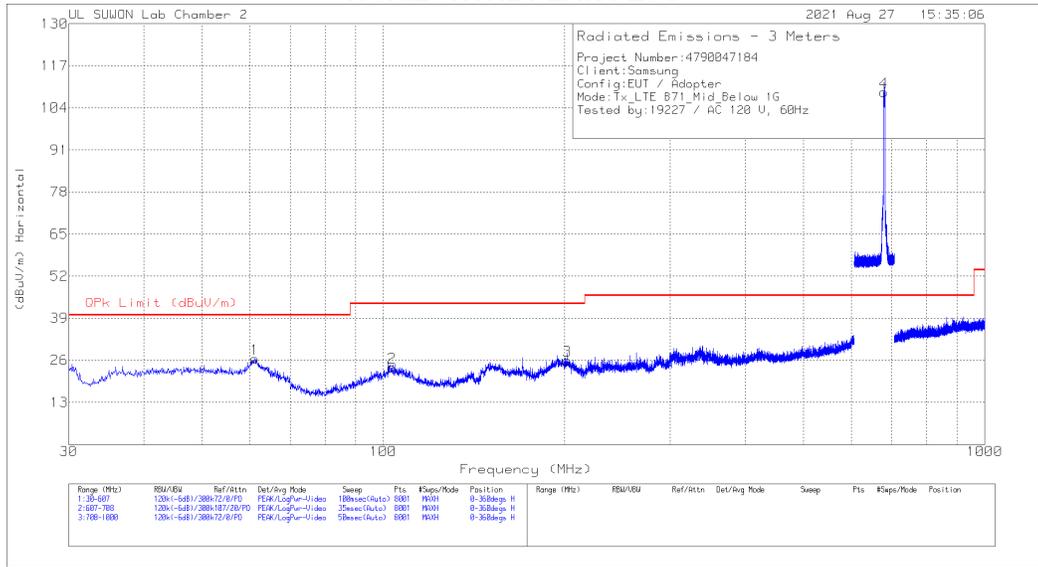
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	60.6531	7.56	Pk	18.4	.9	26.86	40	-13.14	0-360	400	H
2	103.5675	5.32	Pk	17.6	1.1	24.02	43.52	-19.5	0-360	300	H
3	152.9731	10.82	Pk	13.9	1.4	26.12	43.52	-17.4	0-360	200	H
4	664.2165	80.6	Pk	25.2	2.9	108.7	46.02	62.68	0-360	100	H
5	60.7253	12.72	Pk	18.4	.9	32.02	40	-7.98	0-360	100	V
6	101.3316	4.13	Pk	17.5	1.2	22.83	43.52	-20.69	0-360	100	V
7	149.7996	7.83	Pk	13.8	1.4	23.03	43.52	-20.49	0-360	100	V
8	664.4438	77.87	Pk	25.2	2.8	105.87	46.02	59.85	0-360	100	V

Pk - Peak detector

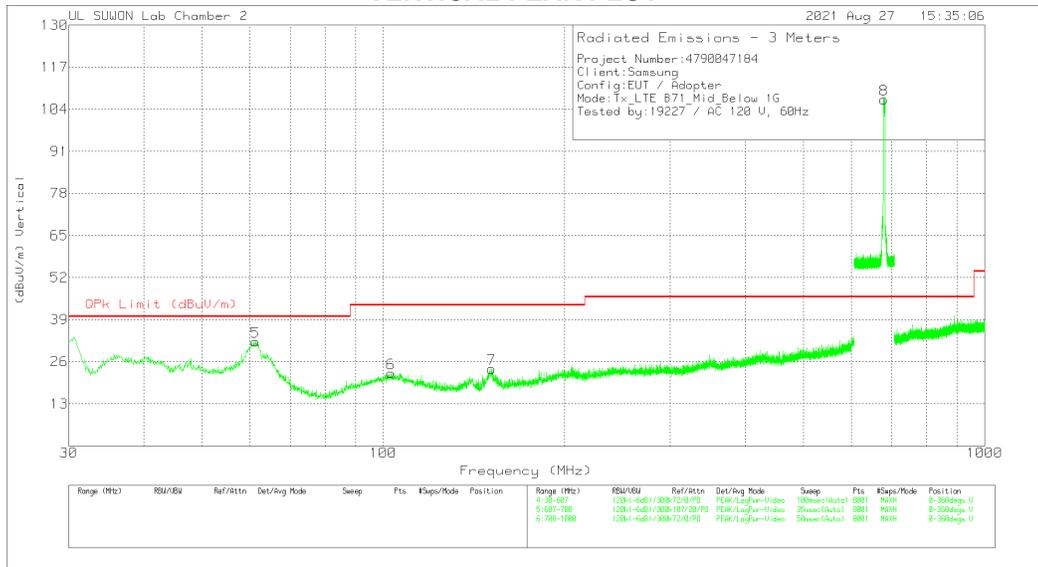
Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(634.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

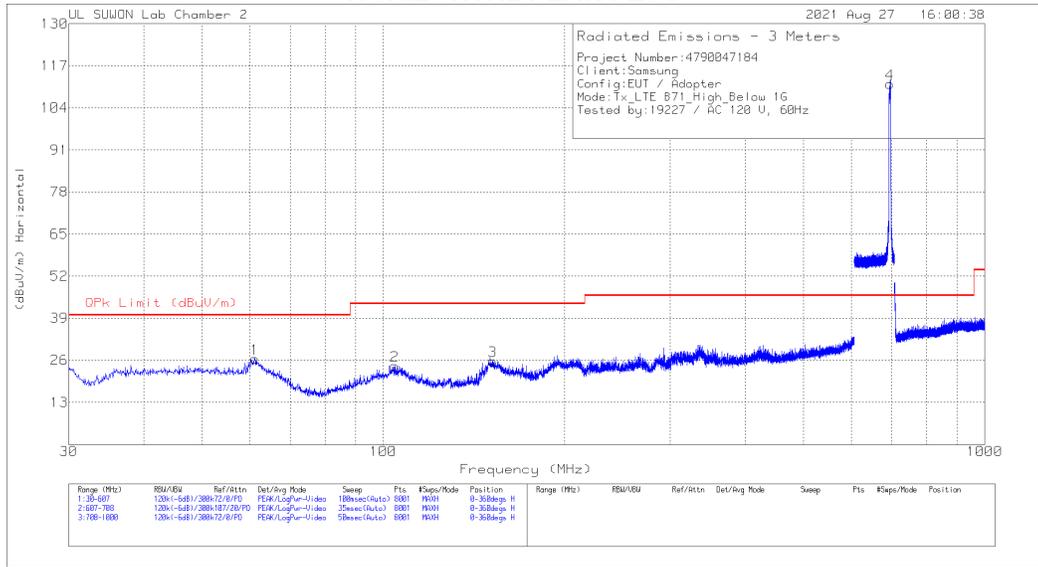
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below_1G_Bypass[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	61.158	7.26	Pk	18.3	.9	26.46	40	-13.54	0-360	400	H
2	103.3511	5.13	Pk	17.6	1.1	23.83	43.52	-19.69	0-360	300	H
3	202.4509	7.27	Pk	17	1.7	25.97	43.52	-17.55	0-360	100	H
4	679.6948	80.43	Pk	25.5	3	108.93	46.02	62.91	0-360	100	H
5	61.3023	13.3	Pk	18.2	.7	32.2	40	-7.8	0-360	100	V
6	102.9905	3.7	Pk	17.6	1.2	22.5	43.52	-21.02	0-360	100	V
7	151.5306	8.48	Pk	13.9	1.4	23.78	43.52	-19.74	0-360	100	V
8	679.4928	78.46	Pk	25.5	3	106.96	46.02	60.94	0-360	100	V

Pk - Peak detector

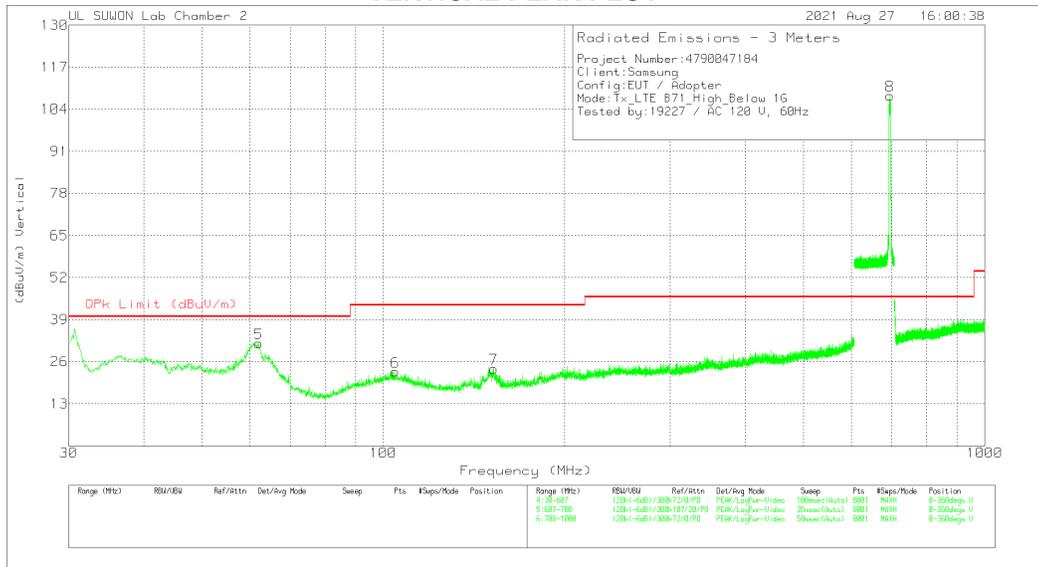
Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(650.2 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	61.158	7.26	Pk	18.3	.9	26.46	40	-13.54	0-360	400	H
2	104.433	5.49	Pk	17.6	1.2	24.29	43.52	-19.23	0-360	300	H
3	151.8913	10.53	Pk	13.9	1.4	25.83	43.52	-17.69	0-360	200	H
4	696.284	83.04	Pk	25.4	3	111.44	46.02	65.42	0-360	100	H
5	62.0235	12.67	Pk	18	1	31.67	40	-8.33	0-360	100	V
6	104.7215	4.1	Pk	17.6	1.2	22.9	43.52	-20.62	0-360	100	V
7	152.6846	8.47	Pk	13.9	1.5	23.87	43.52	-19.65	0-360	100	V
8	696.3219	79.87	Pk	25.4	3	108.27	46.02	62.25	0-360	200	V

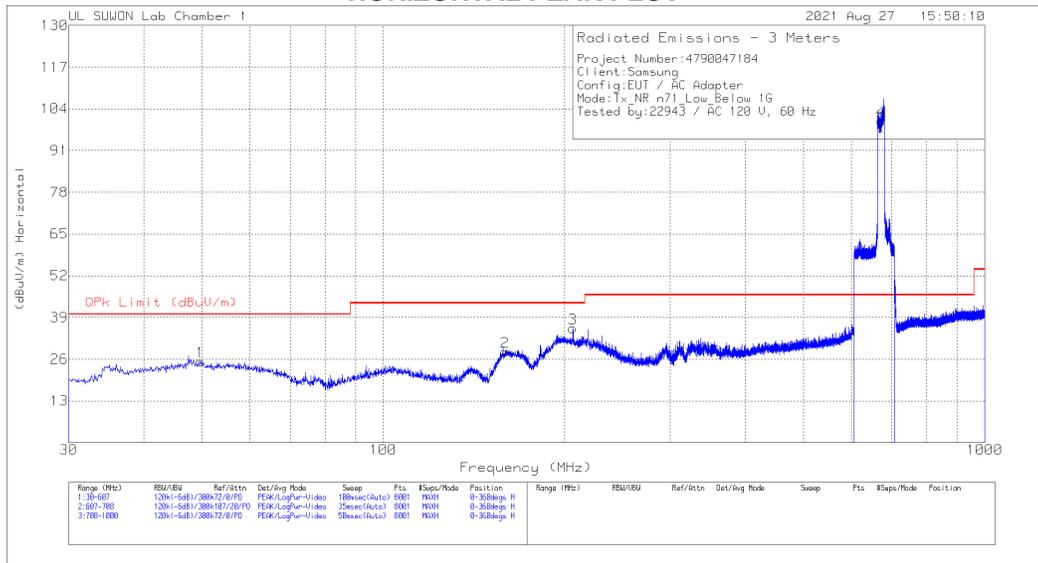
Pk - Peak detector

Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

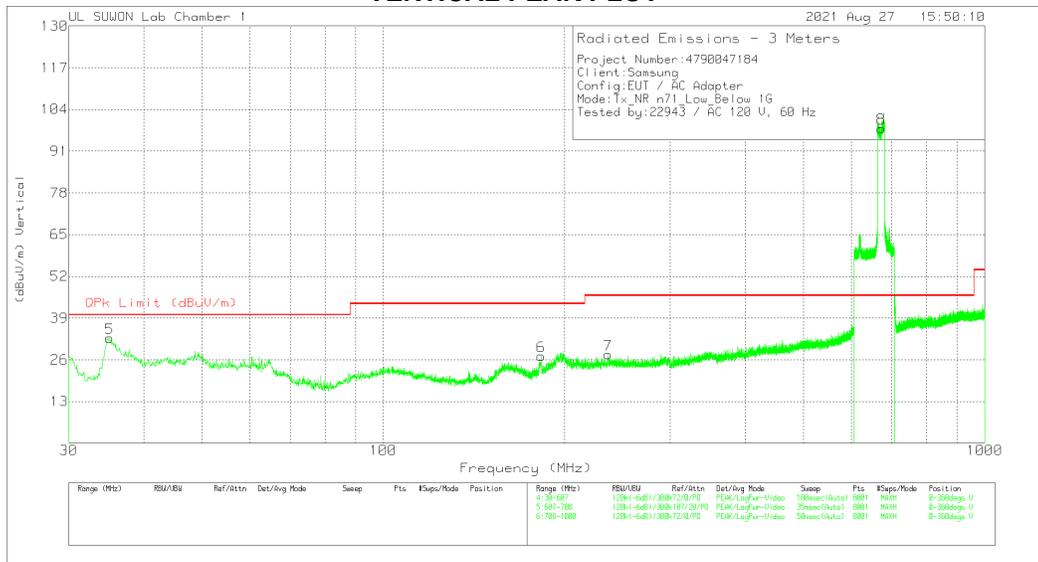
7.1.6. Below 1 GHz in the 5G NR Band 71

LOW CHANNEL(618.8 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

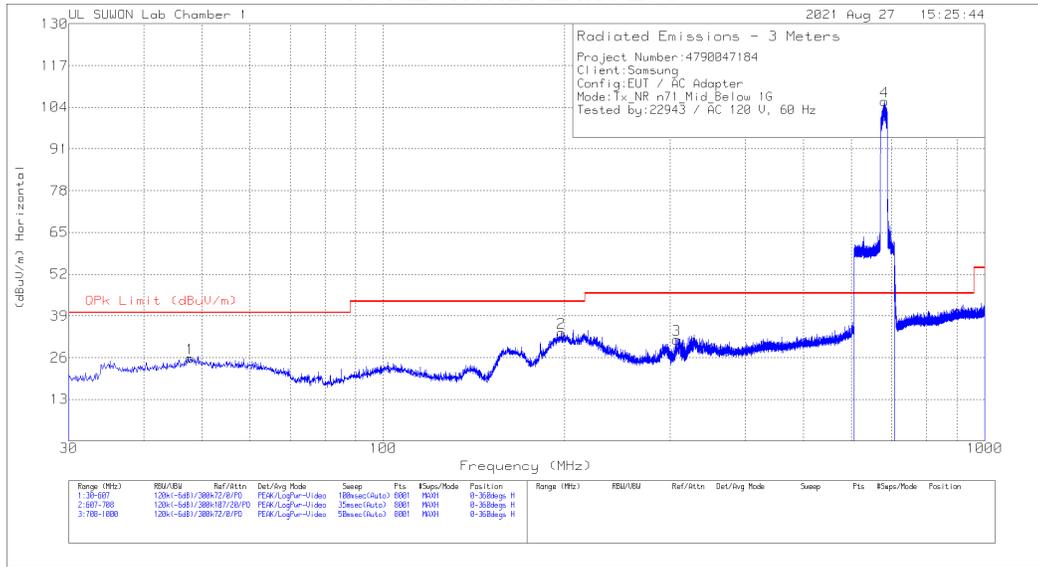
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	49.6901	3.95	Pk	19.9	1.5	25.35	40	-14.65	0-360	400	H
2	159.3923	11.54	PK	14.2	2.7	28.44	43.52	-15.08	0-360	200	H
3	206.7063	15.99	Pk	16.6	3	35.59	43.52	-7.93	0-360	100	H
4	672.9783	69.38	Pk	25.5	5.4	100.28	46.02	54.26	0-360	100	H
5	35.0488	14.83	Pk	16.6	1.3	32.73	40	-7.27	0-360	100	V
6	182.905	8.53	Pk	15.7	2.9	27.13	43.52	-16.39	0-360	300	V
7	236.4218	6.52	Pk	18	3.2	27.72	46.02	-18.3	0-360	100	V
8	672.7636	67.2	Pk	25.5	5.4	98.1	46.02	52.08	0-360	100	V

Pk - Peak detector

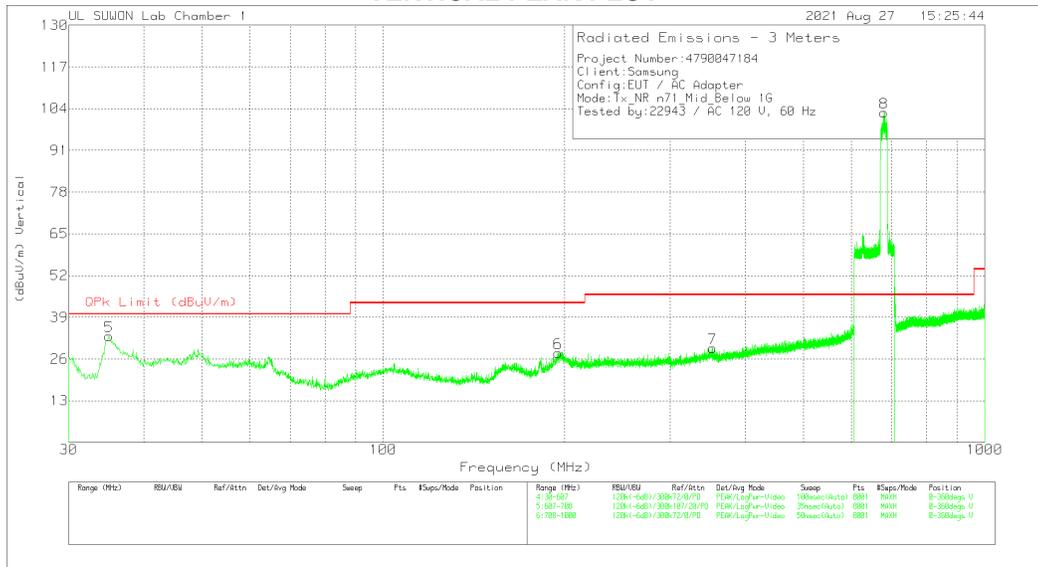
Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

MID CHANNEL(634.5 MHz)

HORIZONTAL PEAK PLOT



VERTICAL PEAK PLOT



DATA

Trace Markers

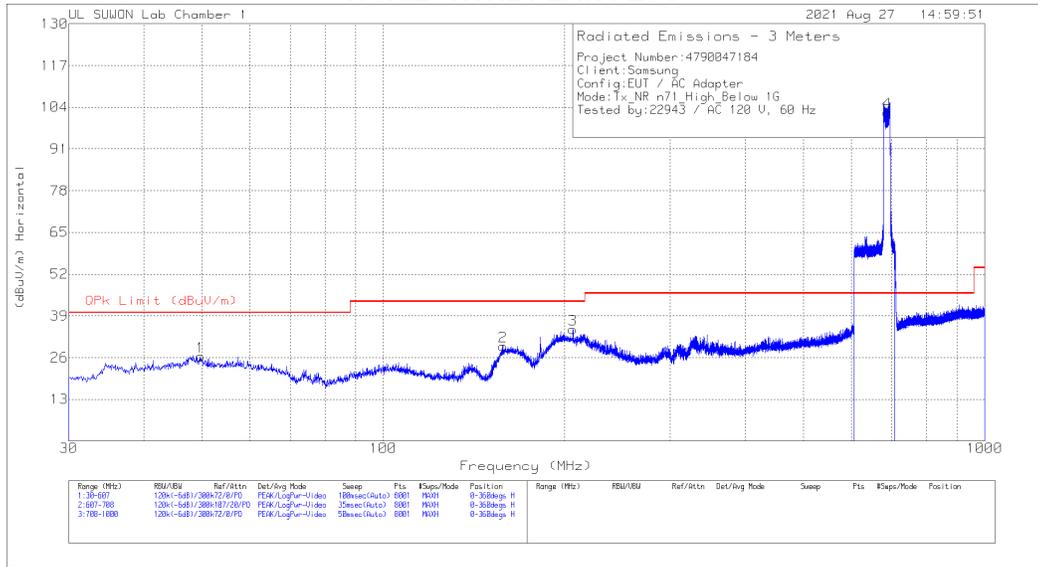
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G_Bypass [dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.7428	4.45	Pk	19.9	1.5	25.85	40	-14.15	0-360	300	H
2	197.6185	13.46	Pk	17.4	3	33.86	43.52	-9.66	0-360	100	H
3	307.4649	8.53	Pk	19.3	3.7	31.53	46.02	-14.49	0-360	100	H
4	681.3739	74.87	Pk	25.5	5.4	105.77	46.02	59.75	0-360	100	H
5	34.9766	15.17	Pk	16.6	1.3	33.07	40	-6.93	0-360	100	V
6	195.3105	7.54	Pk	17.4	3	27.94	43.52	-15.58	0-360	100	V
7	352.8315	4.61	Pk	20.9	3.9	29.41	46.02	-16.61	0-360	300	V
8	679.4675	71.83	Pk	25.5	5.4	102.73	46.02	56.71	0-360	100	V

Pk - Peak detector

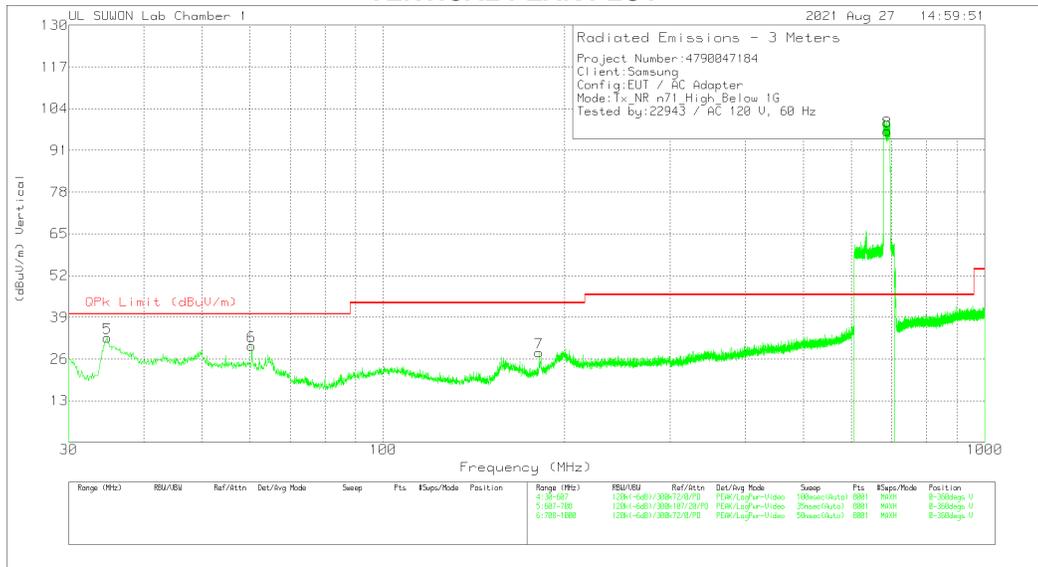
Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

HIGH CHANNEL(650.2 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	49.6901	4.86	Pk	19.9	1.5	26.26	40	-13.74	0-360	400	H
2	158.1661	12.69	Pk	14.2	2.7	29.59	43.52	-13.93	0-360	200	H
3	206.562	15.22	Pk	16.6	3	34.82	43.52	-8.7	0-360	100	H
4	688.2166	71.29	Pk	25.6	5.5	102.39	46.02	56.37	0-360	100	H
5	34.7603	14.9	Pk	16.5	1.2	32.6	40	-7.4	0-360	100	V
6	60.4368	9.83	Pk	18.5	1.7	30.03	40	-9.97	0-360	100	V
7	181.5346	9.65	Pk	15.5	2.9	28.05	43.52	-15.47	0-360	300	V
8	688.2798	65.85	Pk	25.6	5.5	96.95	46.02	50.93	0-360	100	V

Pk - Peak detector

Note: Unwanted emissions captured from 617MHz to 652MHz and from 663MHz to 698MHz were the TX and RX signals generated from the call-simulator.

END OF TEST REPORT