# CERTIFICATION TEST REPORT

**Report Number. :** 4789247757-E1V3

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

**Model :** SM-G985F/DS, SM-G985F

**FCC ID :** A3LSMG985F

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

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

**Date Of Issue:**
December 19, 2019

**Prepared by:**
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Suwon Test Site: UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
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IAS ACCREDITED
Testing Laboratory
TL-637

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V1 | 12/12/19 | Initial issue | Seokhwan Hong |
| V2 | 12/17/19 | Updated to address TCB's question | Seokhwan Hong |
| V3 | 12/19/19 | Updated to address TCB's question | Seokhwan Hong |


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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.

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

**MODEL NUMBER:** SM-G985F/DS, SM-G985F

**SERIAL NUMBER:** R38MA0KHKTZ (RADIATED);

**DATE TESTED:** NOV 29, 2019 – DEC 09, 2019;

| 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:

Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.


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# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. ANSI C63.4, 2014

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 218 Maeyeong-ro |
|---|
| ☒ Chamber 1 |
| ☒ Chamber 2 |
| ☐ Chamber 3 |

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# 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 = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss( between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – 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 |
|---|---|
| Conducted Disturbance, 0.15 to 30 MHz | 2.35 dB |
| Radiated Disturbance, 30 MHz to 1 GHz | 3.49 dB |
| Radiated Disturbance, 1 GHz to 18 GHz | 5.82 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.


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# 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, ANT+, NFC and WPT. This test report addresses the WWAN operational receiver mode.

This report covers the Samsung models SM-G985F/DS and SM-G985F.
These models are identical in hardware except SM-G985F has single SIM tray.
With some pre-scan, model SM-G985F/DS was set for final test.

## 5.2. TEST MODE

| Mode | Description |
|---|---|
| GSM850 | Communicating with Call simulator(CMW500) |
| WCDMA BAND 5 | Communicating with Call simulator(CMW500) |
| LTE BAND 12 | Communicating with Call simulator(CMW500) |
| LTE BAND 13 | Communicating with Call simulator(CMW500) |
| LTE BAND 26 | Communicating with Call simulator(CMW500) |


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## 5.3. WORST-CASE ORIENTATION AND MODE

For GSM850 / WCDMA B5 / LTE B12 / LTE Band 13, EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation.

For LTE B26, EUT was investigated in three orthogonal orientations X, Y and Z it was determined that X 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.

**WCDMA Band 5**

WCDMA Band 5 (Frequency range: 824-849 MHz) is covered by GSM 850 (Frequency range: 824-849 MHz) due to same frequency range and maximum tune-up limit is higher than WCDMA Band 5. Therefore, only Mid channel was checked.

**LTE Band 5**

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

**LTE Band 17**

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


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## 5.4. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Support Equipment List | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** | **FCC ID** |
| Charger | SAMSUNG | EP-TA800 | R37M5DX86X1SE3 | N/A |
| Data Cable | SAMSUNG | EP-DG977 | N/A | N/A |

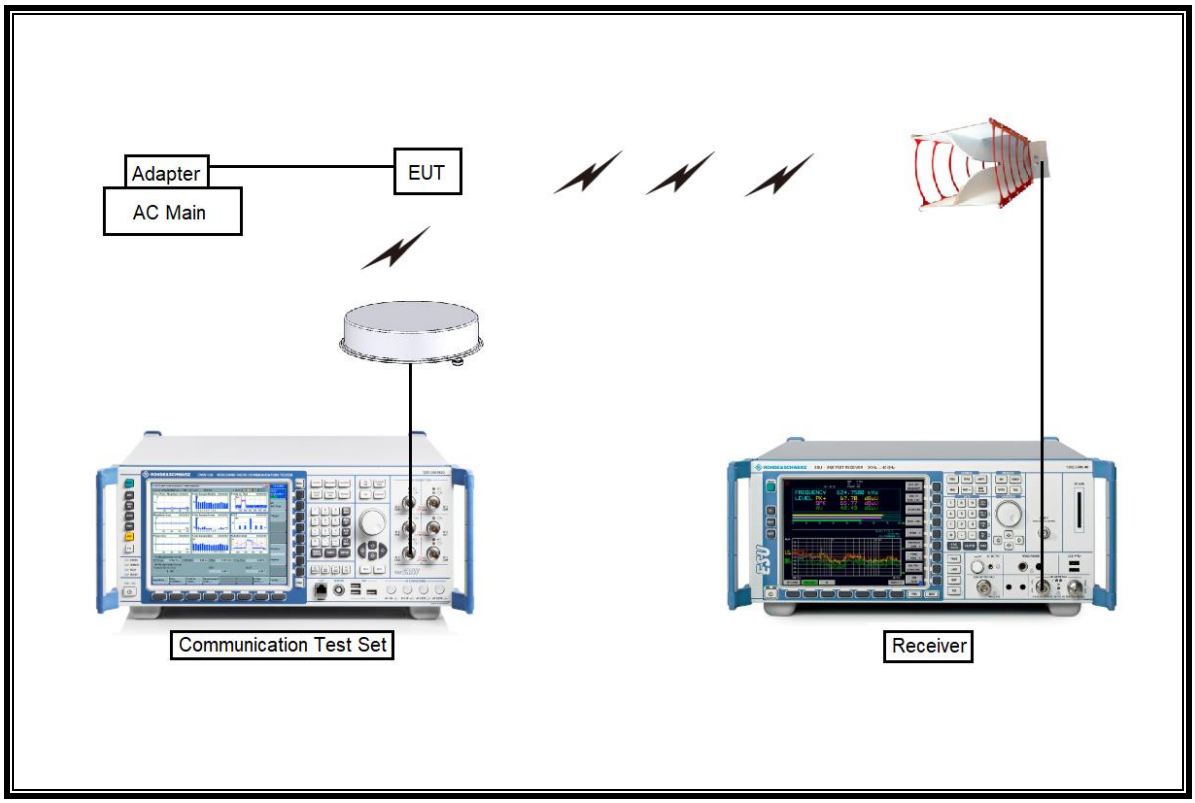
**I/O CABLE**

| 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 | 1.0m | N/A |

**TEST SETUP**

The EUT is continuously communicated with the call box during the tests.

**SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)**





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# 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 | 01-30-21 |
| Antenna, Horn, 40 GHz | ETS | 3116C | 00166155 | 08-13-20 |
| Preamplifier | ETS | 3116C-PA | 00168841 | 08-08-20 |
| Antenna, Horn, 40 GHz | ETS | 3116C | 00168645 | 10-02-21 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 750 | 08-04-20 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 845 | 08-04-20 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 749 | 08-04-20 |
| Antenna, Horn, 18 GHz | ETS | 3115 | 00167211 | 08-04-20 |
| Antenna, Horn, 18 GHz | ETS | 3115 | 00161451 | 08-04-20 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00168724 | 08-04-20 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00205959 | 08-04-20 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00168717 | 08-04-20 |
| Communications Test Set | R&S | CMW500 | 115331 | 08-05-20 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 341282 | 08-05-20 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 370599 | 08-05-20 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 351741 | 08-05-20 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1876511 | 08-06-20 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 2029169 | 08-06-20 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1896138 | 08-05-20 |
| EMI Test Receive, 44 GHz | R&S | ESW40 | 101590 | 08-06-20 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100439 | 08-06-20 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100457 | 08-06-20 |
| Directional Antenna | Cobham | FPA3-0.8-6.0R/1329 | 80108-0004 | N/A |
| High Pass Filter 1.2GHz | Micro-Tronics | HPM50108-02 | G005 | 08-05-20 |
| High Pass Filter 1.2GHz | Micro-Tronics | HPM50108-02 | G006 | 08-05-20 |
| High Pass Filter 2.8GHz | Micro-Tronics | HPM50111-02 | 010 | 08-05-20 |
| High Pass Filter 2.8GHz | Micro-Tronics | HPM50111-02 | 011 | 08-05-20 |
| High Pass Filter 4GHz | Micro-Tronics | HPM50118-02 | G001 | 08-05-20 |
| High Pass Filter 4GHz | Micro-Tronics | HPM50118-02 | G002 | 08-05-20 |
| Attenuator | PASTERNACK | PE7087-10 | A009 | 08-08-20 |
| Attenuator | PASTERNACK | PE7087-10 | A001 | 08-08-20 |
| Attenuator | PASTERNACK | PE7087-10 | A008 | 08-08-20 |
| Attenuator | PASTERNACK | PE7087-10 | 2 | 08-08-20 |
| Attenuator | PASTERNACK | PE7395-10 | A011 | 08-08-20 |
| Antenna, Loop, 9kHz-30MHz | R&S | HFH2-Z2 | 100418 | 10-02-21 |
| **UL Software** | | | | |
| **Description** | **Manufacturer** | **Model** | **Version** | |
| Radiated software | UL | UL EMC | Ver 9.5 | |


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# 7. APPLICABLE LIMIYS 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 (dBµV/m) |
| 30 to 88 | 40 |
| 88 to 216 | 43.5 |
| 216 to 960 | 46 |
| Above 960 MHz | 54 |
| Note: The lower limit shall apply at the transition frequency. | |


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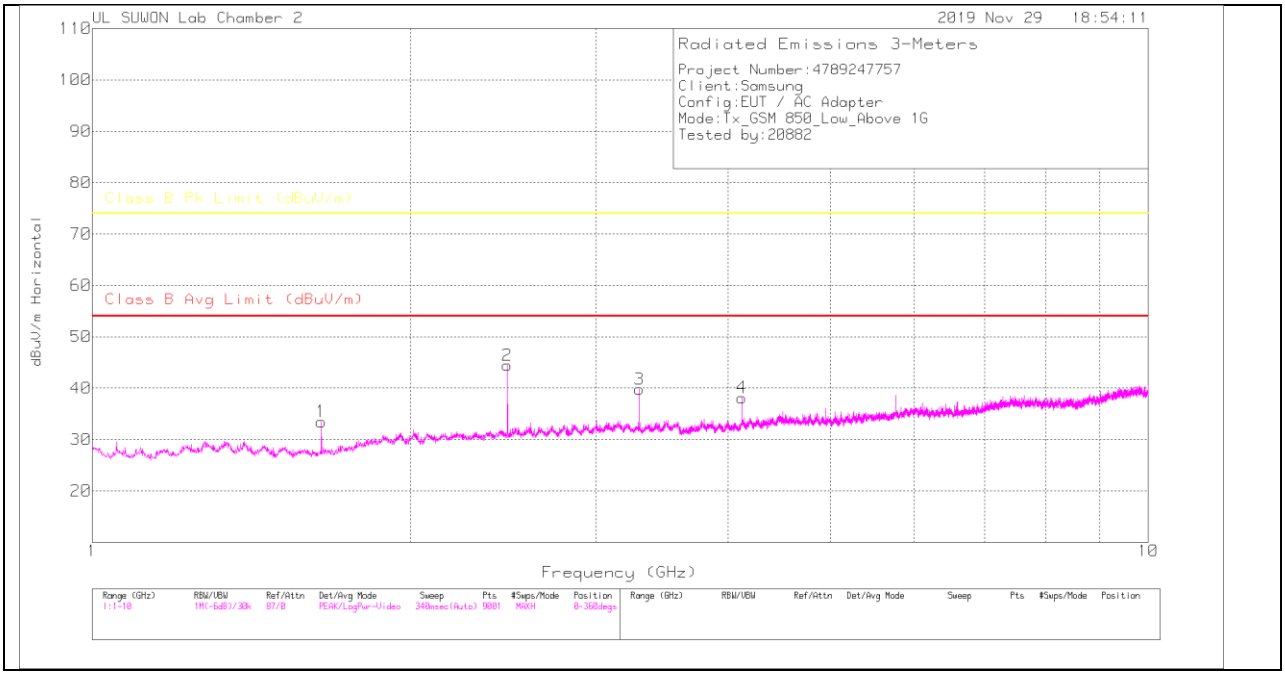
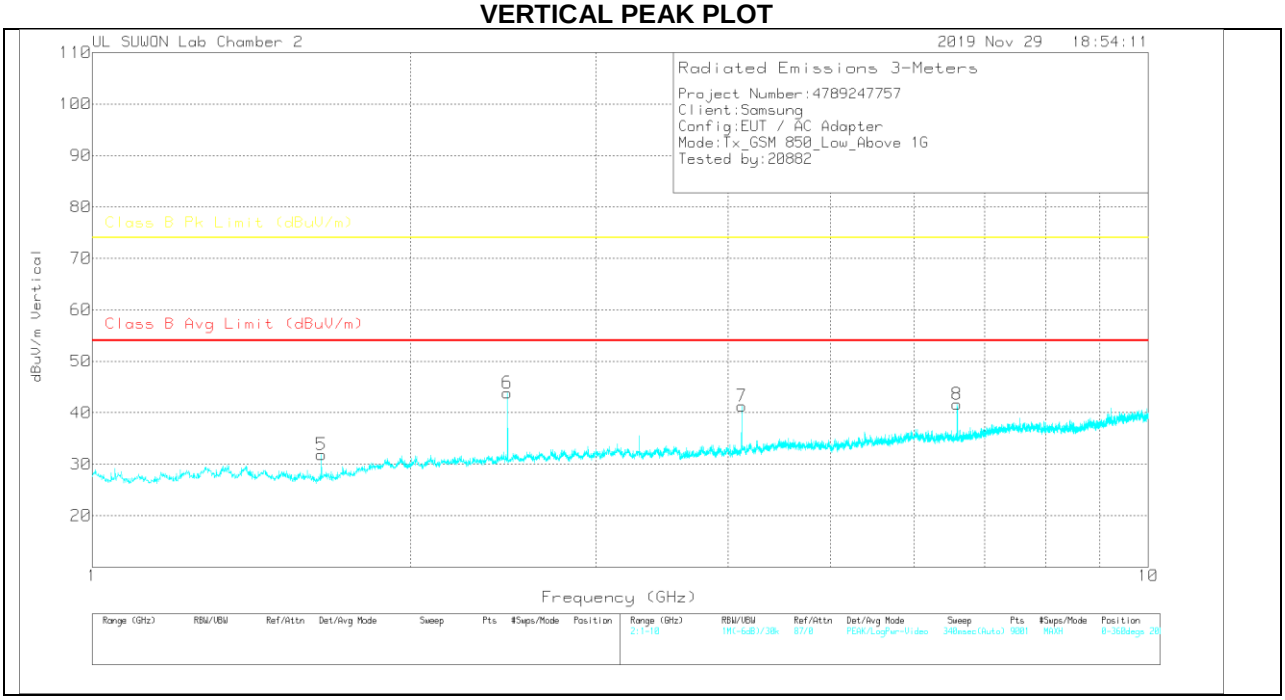
## 7.1. Above 1 GHz in the GSM850

**LOW CHANNEL(869.2MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.648 | 35.88 | PK | 28.3 | -31.4 | .7 | 33.48 | - | - | 74 | -40.52 | 0-360 | 200 | H |
| 2 | 2.472 | 41.95 | PK | 31.8 | -30 | .7 | 44.45 | - | - | 74 | -29.55 | 0-360 | 200 | H |
| 3 | 3.297 | 36.39 | PK | 32.6 | -29.9 | .7 | 39.79 | - | - | 74 | -34.21 | 0-360 | 200 | H |
| 4 | 4.121 | 32.74 | PK | 33.4 | -28.5 | .5 | 38.14 | - | - | 74 | -35.86 | 0-360 | 100 | H |
| 5 | 1.648 | 34.27 | PK | 28.3 | -31.4 | .7 | 31.87 | - | - | 74 | -42.13 | 0-360 | 200 | V |
| 6 | 2.473 | 41.38 | PK | 31.8 | -30 | .7 | 43.88 | - | - | 74 | -30.12 | 0-360 | 200 | V |
| 7 | 4.121 | 35.92 | PK | 33.4 | -28.5 | .5 | 41.32 | - | - | 74 | -32.68 | 0-360 | 100 | V |
| 8 | 6.593 | 32.46 | PK | 35.3 | -26.6 | .5 | 41.66 | - | - | 74 | -32.34 | 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.


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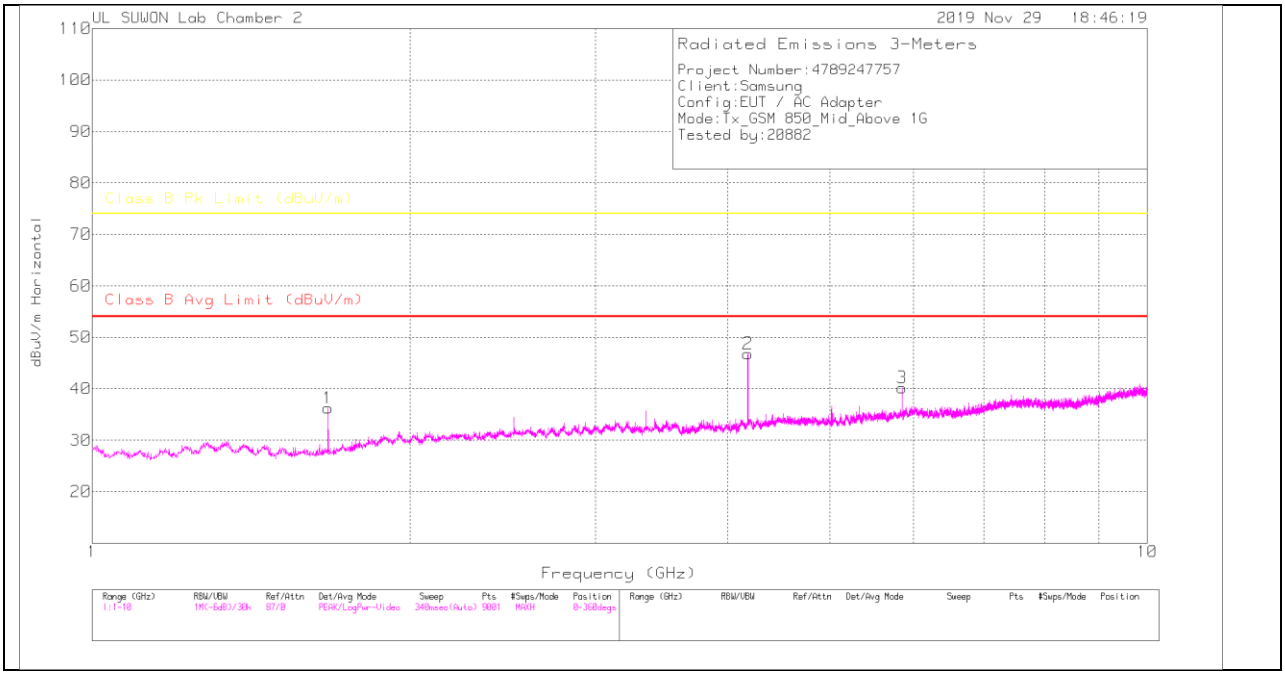
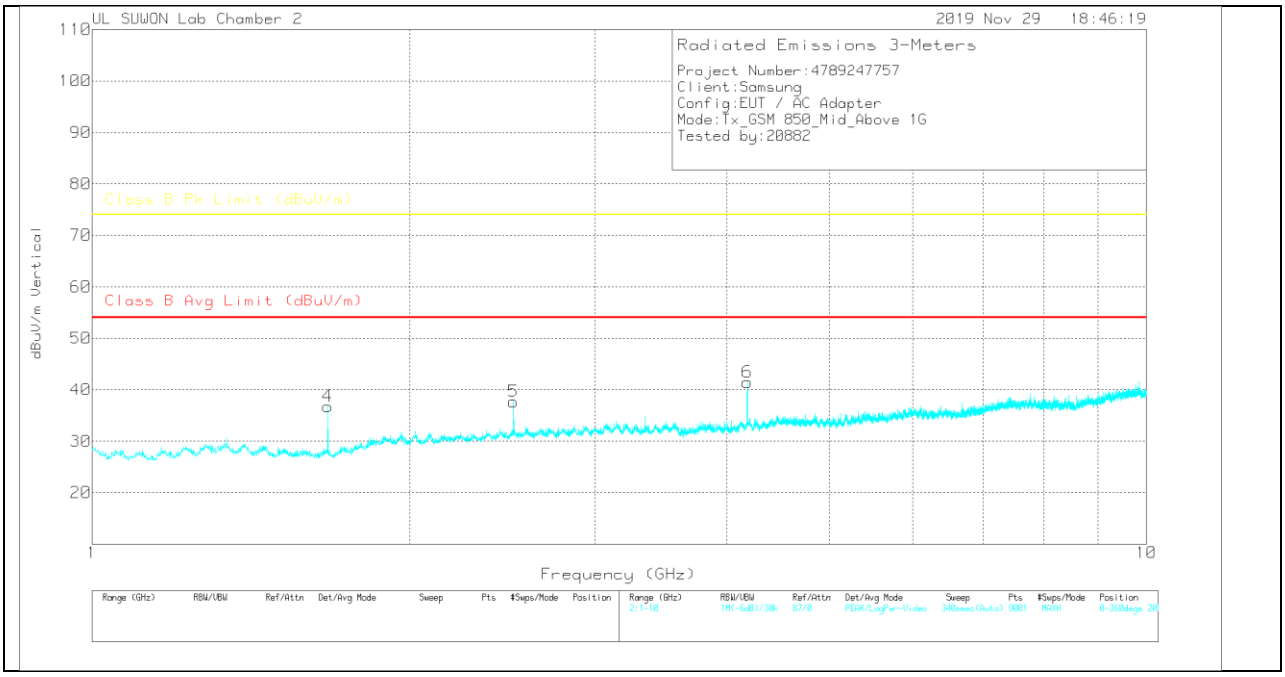
**MID CHANNEL(881.6MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.673 | 38.34 | PK | 28.5 | -31.3 | .7 | 36.24 | - | - | 74 | -37.76 | 0-360 | 200 | H |
| 2 | 4.183 | 41.01 | PK | 33.4 | -28.1 | .5 | 46.81 | - | - | 74 | -27.19 | 0-360 | 100 | H |
| 3 | 5.857 | 31.98 | PK | 34.9 | -27.2 | .5 | 40.18 | - | - | 74 | -33.82 | 0-360 | 200 | H |
| 4 | 1.673 | 38.87 | PK | 28.5 | -31.3 | .7 | 36.77 | - | - | 74 | -37.23 | 0-360 | 200 | V |
| 5 | 2.509 | 35.18 | PK | 31.9 | -30.1 | .7 | 37.68 | - | - | 74 | -36.32 | 0-360 | 100 | V |
| 6 | 4.183 | 35.67 | PK | 33.4 | -28.1 | .5 | 41.47 | - | - | 74 | -32.53 | 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.


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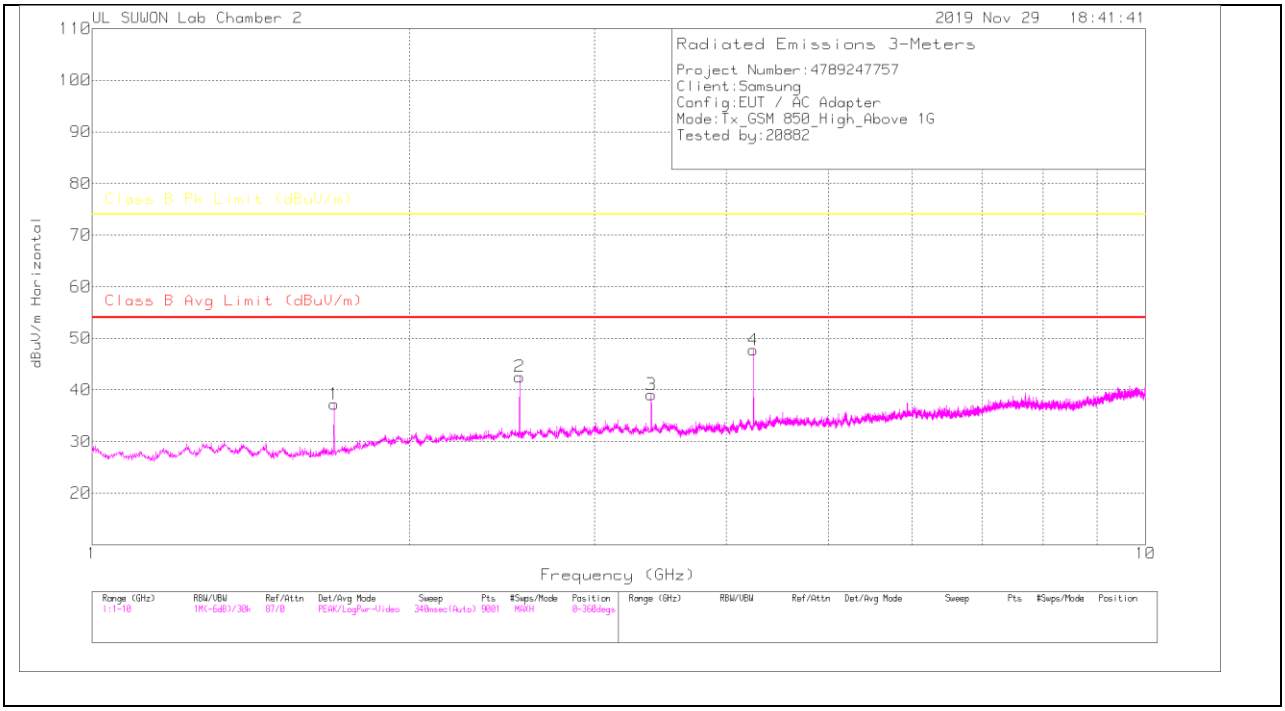
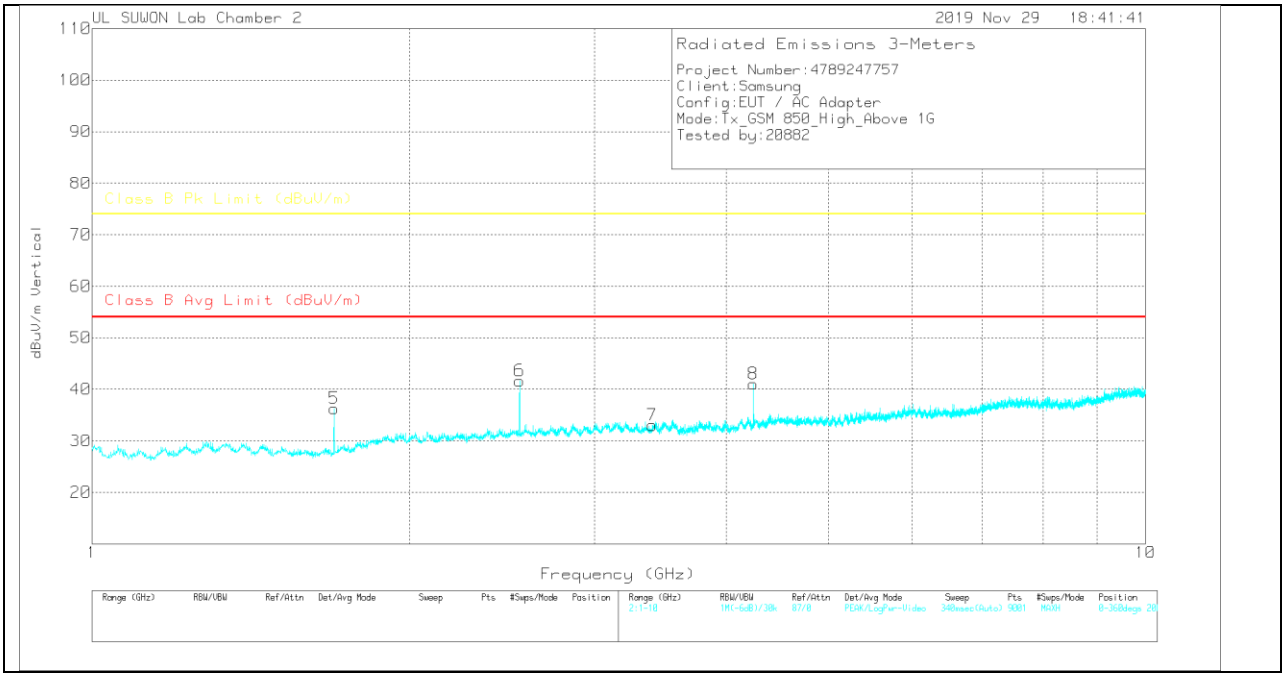
**HIGH CHANNEL(893.8MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.697 | 39.14 | PK | 28.6 | -31.2 | .7 | 37.24 | - | - | 74 | -36.76 | 0-360 | 100 | H |
| 2 | 2.546 | 39.95 | PK | 32 | -30.1 | .7 | 42.55 | - | - | 74 | -31.45 | 0-360 | 100 | H |
| 3 | 3.395 | 35.08 | PK | 32.6 | -29.3 | .7 | 39.08 | - | - | 74 | -34.92 | 0-360 | 100 | H |
| 4 | 4.244 | 42.34 | PK | 33.4 | -28.5 | .5 | 47.74 | - | - | 74 | -26.26 | 0-360 | 200 | H |
| 5 | 1.697 | 38.17 | PK | 28.6 | -31.2 | .7 | 36.27 | - | - | 74 | -37.73 | 0-360 | 200 | V |
| 6 | 2.546 | 39.08 | PK | 32 | -30.1 | .7 | 41.68 | - | - | 74 | -32.32 | 0-360 | 100 | V |
| 7 | 3.401 | 28.94 | PK | 32.6 | -29.2 | .7 | 33.04 | - | - | 74 | -40.96 | 0-360 | 100 | V |
| 8 | 4.244 | 35.64 | PK | 33.4 | -28.5 | .5 | 41.04 | - | - | 74 | -32.96 | 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.


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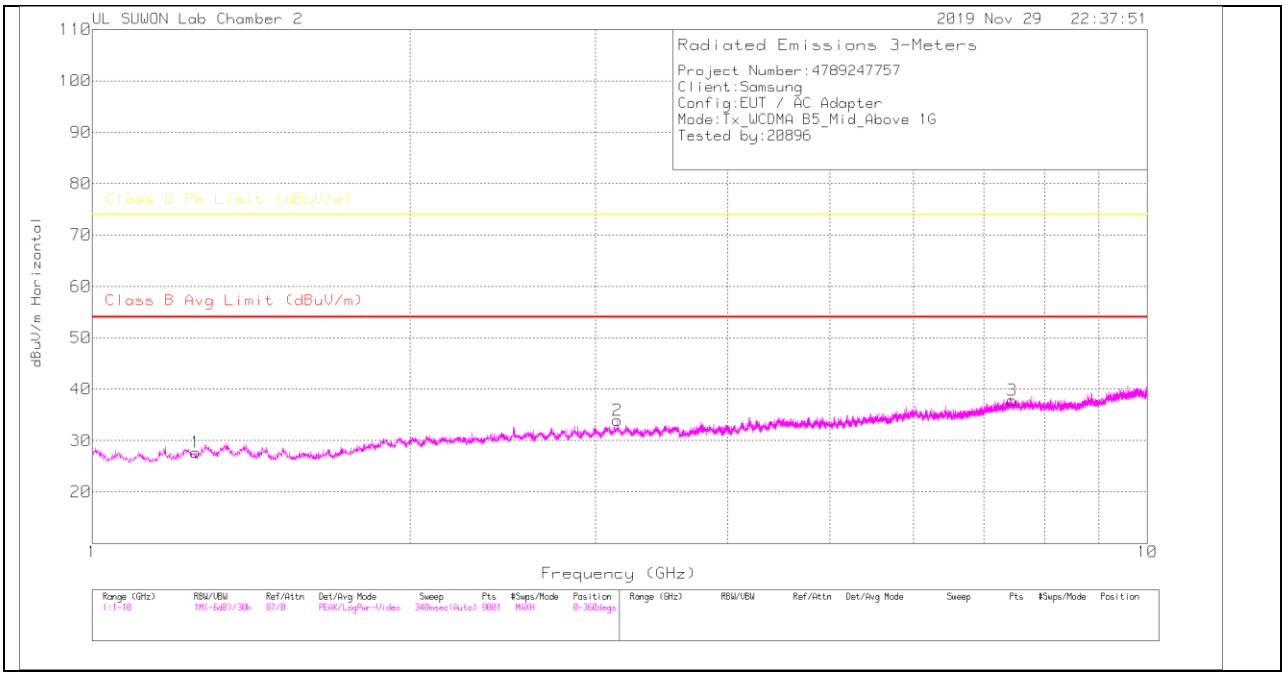
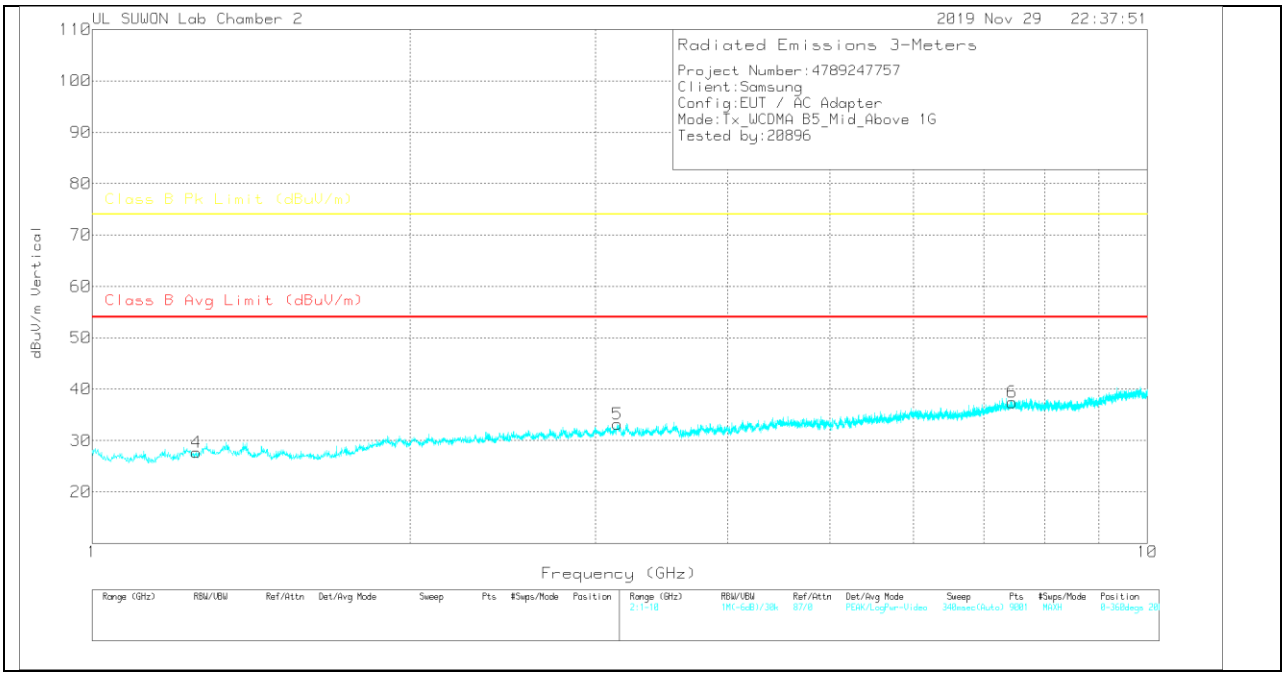
## 7.2. Above 1 GHz in the WCDMA Band 5

**MID CHANNEL(881.6MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.254 | 29.4 | PK | 29.4 | -31.9 | .8 | 27.7 | - | - | 74 | -46.3 | 0-360 | 200 | H |
| 2 | 3.146 | 29.92 | PK | 32.9 | -29.6 | .7 | 33.92 | - | - | 74 | -40.08 | 0-360 | 200 | H |
| 3 | 7.442 | 25.92 | PK | 36.2 | -24.9 | .6 | 37.82 | - | - | 74 | -36.18 | 0-360 | 100 | H |
| 4 | 1.255 | 29.4 | PK | 29.4 | -31.9 | .8 | 27.7 | - | - | 74 | -46.3 | 0-360 | 100 | V |
| 5 | 3.145 | 29.3 | PK | 32.9 | -29.7 | .7 | 33.2 | - | - | 74 | -40.8 | 0-360 | 100 | V |
| 6 | 7.446 | 25.54 | PK | 36.2 | -24.9 | .6 | 37.44 | - | - | 74 | -36.56 | 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.


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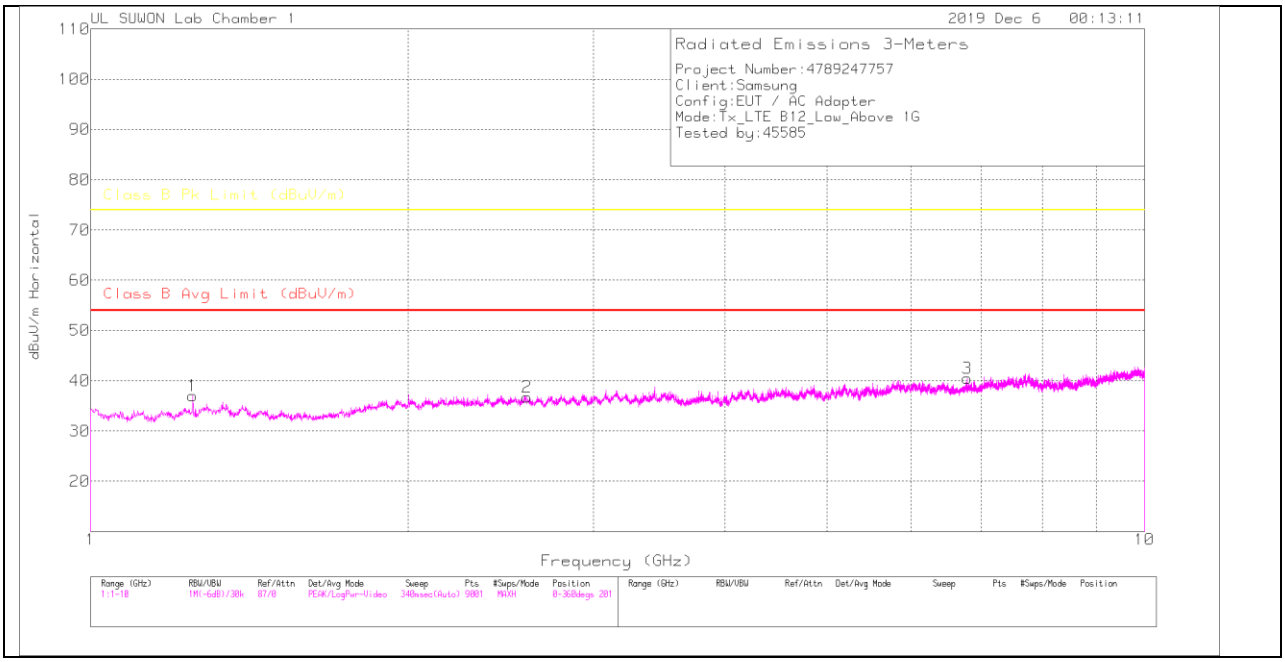
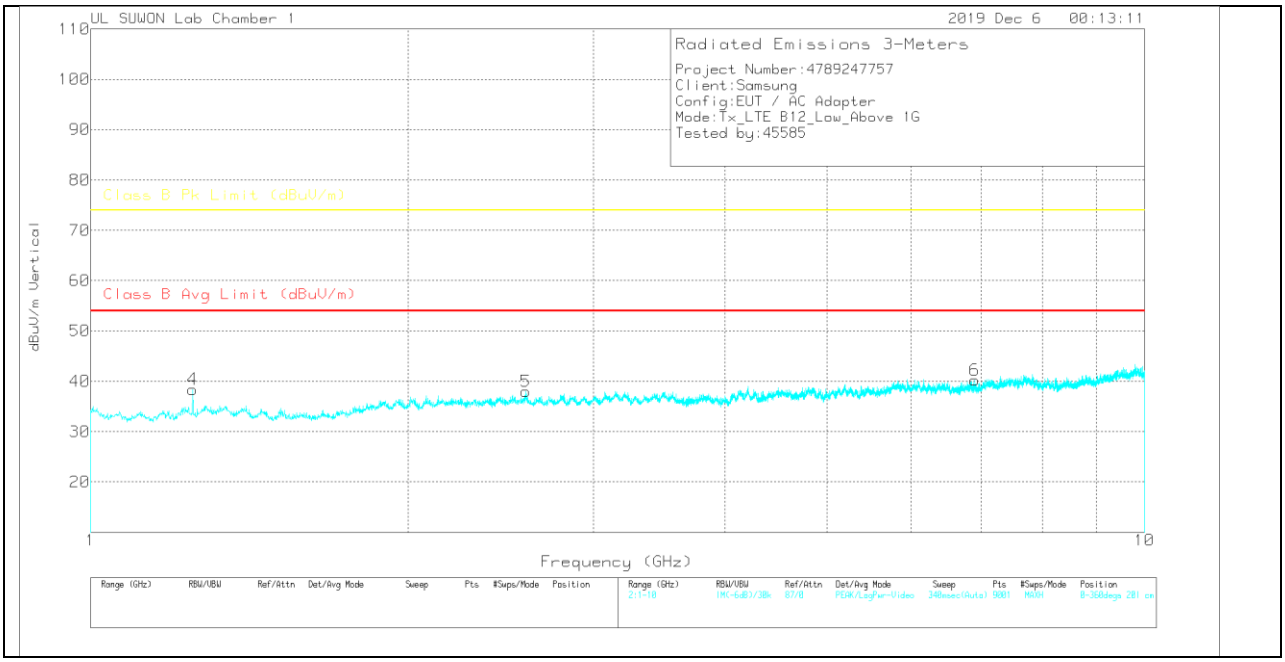
## 7.3. Above 1 GHz in the LTE Band 12

**LOW CHANNEL(730.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.25 | 38.74 | PK | 29.4 | -31.9 | .8 | 37.04 | - | - | 74 | -36.96 | 0-360 | 201 | H |
| 2 | 2.595 | 34.29 | PK | 32 | -30.2 | .7 | 36.79 | - | - | 74 | -37.21 | 0-360 | 201 | H |
| 3 | 6.785 | 30.18 | PK | 35.5 | -25.7 | .5 | 40.48 | - | - | 74 | -33.52 | 0-360 | 201 | H |
| 4 | 1.25 | 40.13 | PK | 29.4 | -31.9 | .8 | 38.43 | - | - | 74 | -35.57 | 0-360 | 201 | V |
| 5 | 2.586 | 35.64 | PK | 32 | -30.3 | .7 | 38.04 | - | - | 74 | -35.96 | 0-360 | 100 | V |
| 6 | 6.9 | 30.09 | PK | 35.7 | -26 | .5 | 40.29 | - | - | 74 | -33.71 | 0-360 | 201 | V |

PK – Peak Detector

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


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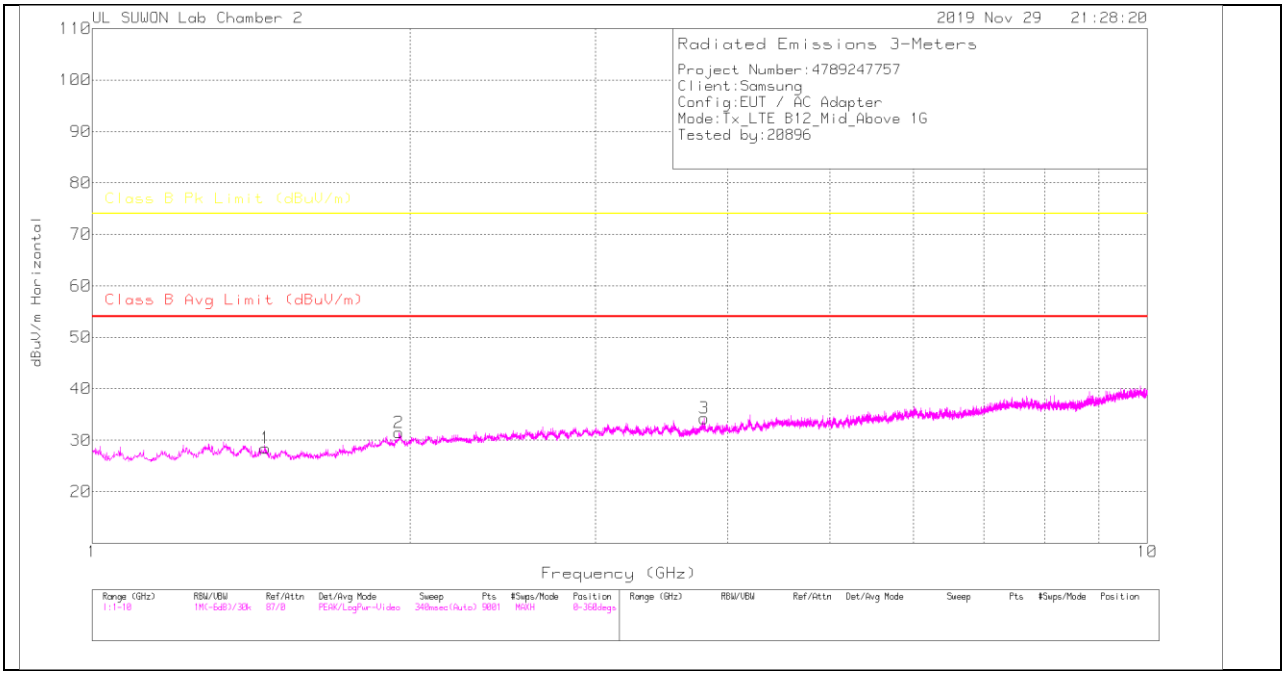
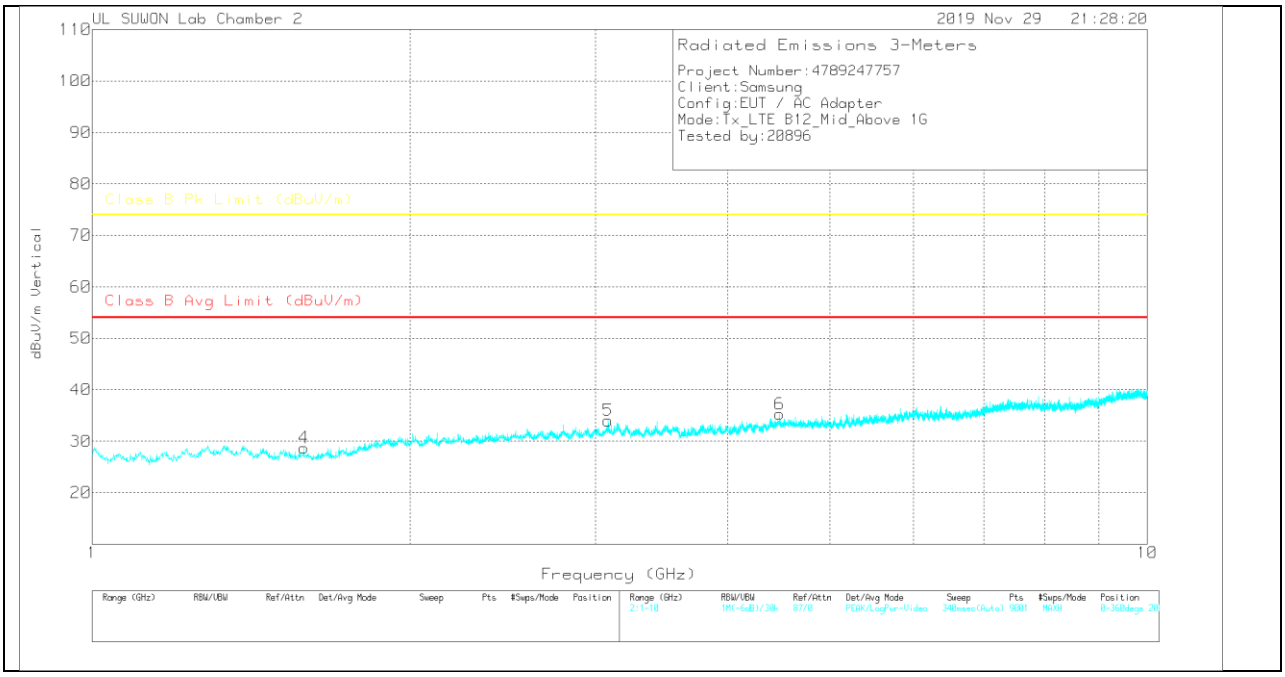
**MID CHANNEL(737.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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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 | 1.459 | 30.35 | PK | 29 | -31.6 | .7 | 28.45 | - | - | 74 | -45.55 | 0-360 | 100 | H |
| 2 | 1.953 | 30.67 | PK | 31.1 | -30.9 | .6 | 31.47 | - | - | 74 | -42.53 | 0-360 | 100 | H |
| 3 | 3.804 | 29.37 | PK | 33.2 | -28.9 | .6 | 34.27 | - | - | 74 | -39.73 | 0-360 | 100 | H |
| 4 | 1.587 | 31.01 | PK | 28.3 | -31.4 | .8 | 28.71 | - | - | 74 | -45.29 | 0-360 | 100 | V |
| 5 | 3.084 | 30.51 | PK | 32.7 | -29.9 | .7 | 34.01 | - | - | 74 | -39.99 | 0-360 | 200 | V |
| 6 | 4.481 | 29.27 | PK | 33.8 | -28.3 | .5 | 35.27 | - | - | 74 | -38.73 | 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.


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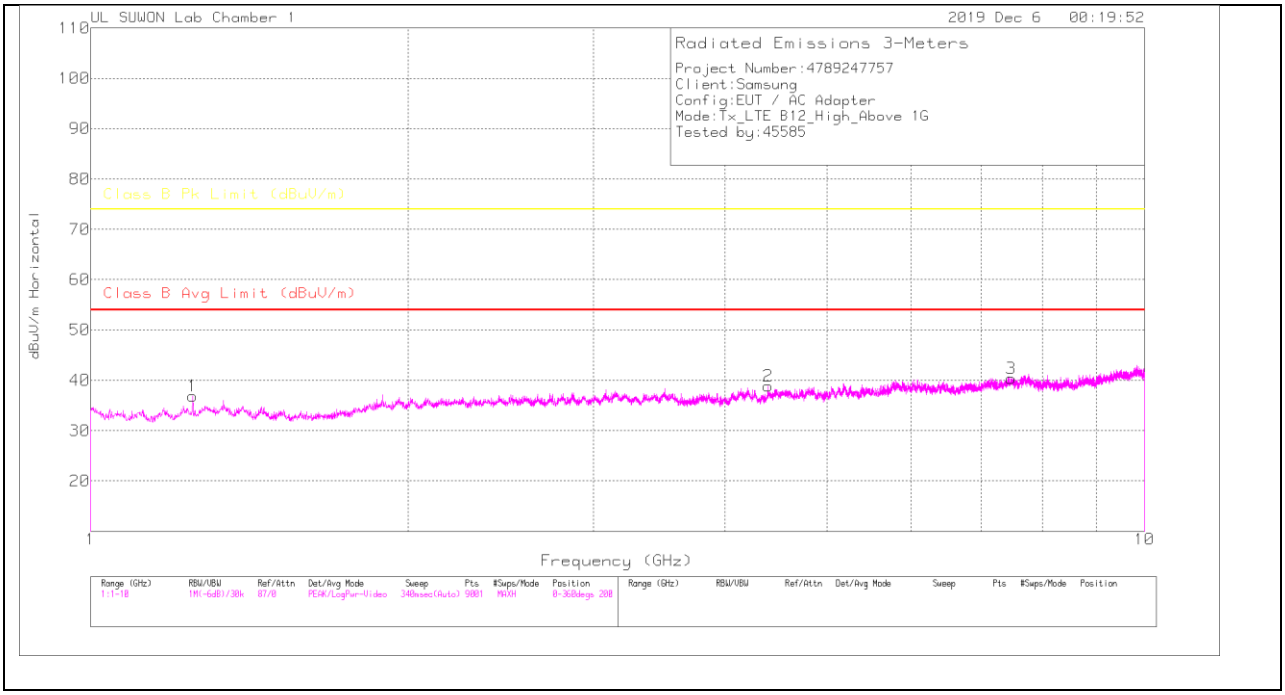
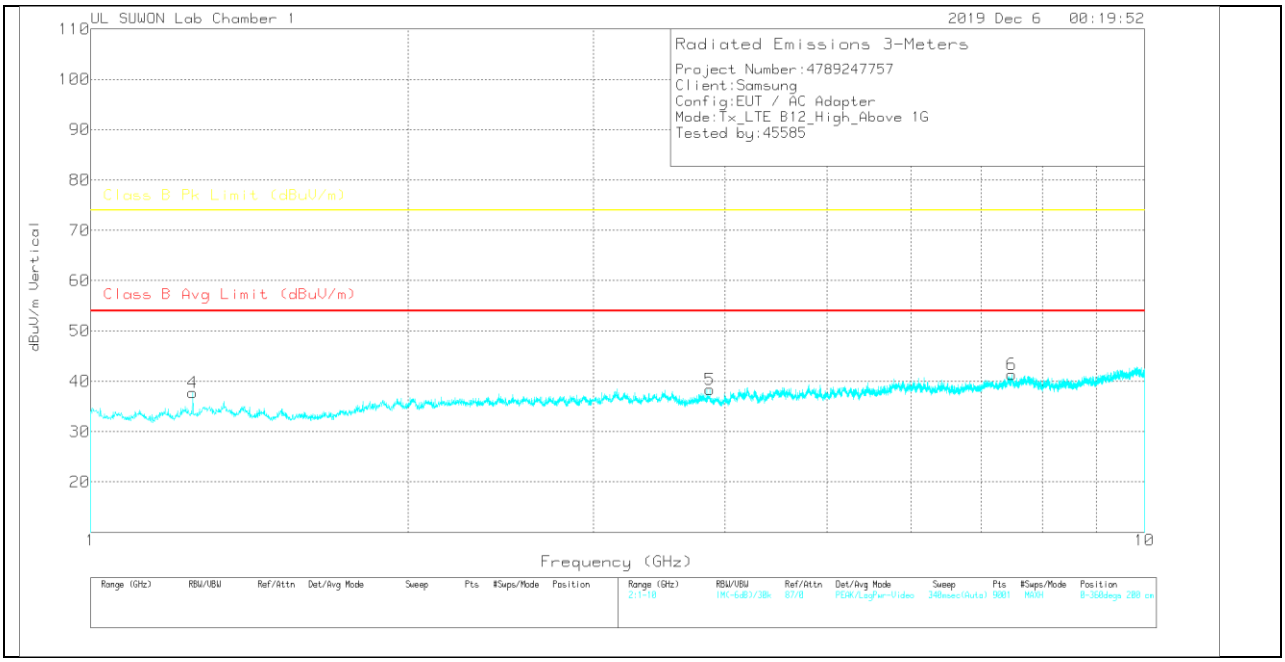
**HIGH CHANNEL(744.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.25 | 38.62 | PK | 29.4 | -31.9 | .8 | 36.92 | - | - | 74 | -37.08 | 0-360 | 200 | H |
| 2 | 4.393 | 33.29 | PK | 33.7 | -28.6 | .5 | 38.89 | - | - | 74 | -35.11 | 0-360 | 200 | H |
| 3 | 7.476 | 28.6 | PK | 36.2 | -24.9 | .5 | 40.4 | - | - | 74 | -33.6 | 0-360 | 200 | H |
| 4 | 1.25 | 39.45 | PK | 29.4 | -31.9 | .8 | 37.75 | - | - | 74 | -36.25 | 0-360 | 200 | V |
| 5 | 3.869 | 33.64 | PK | 33.3 | -29.1 | .5 | 38.34 | - | - | 74 | -35.66 | 0-360 | 100 | V |
| 6 | 7.477 | 29.58 | PK | 36.2 | -24.9 | .5 | 41.38 | - | - | 74 | -32.62 | 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.


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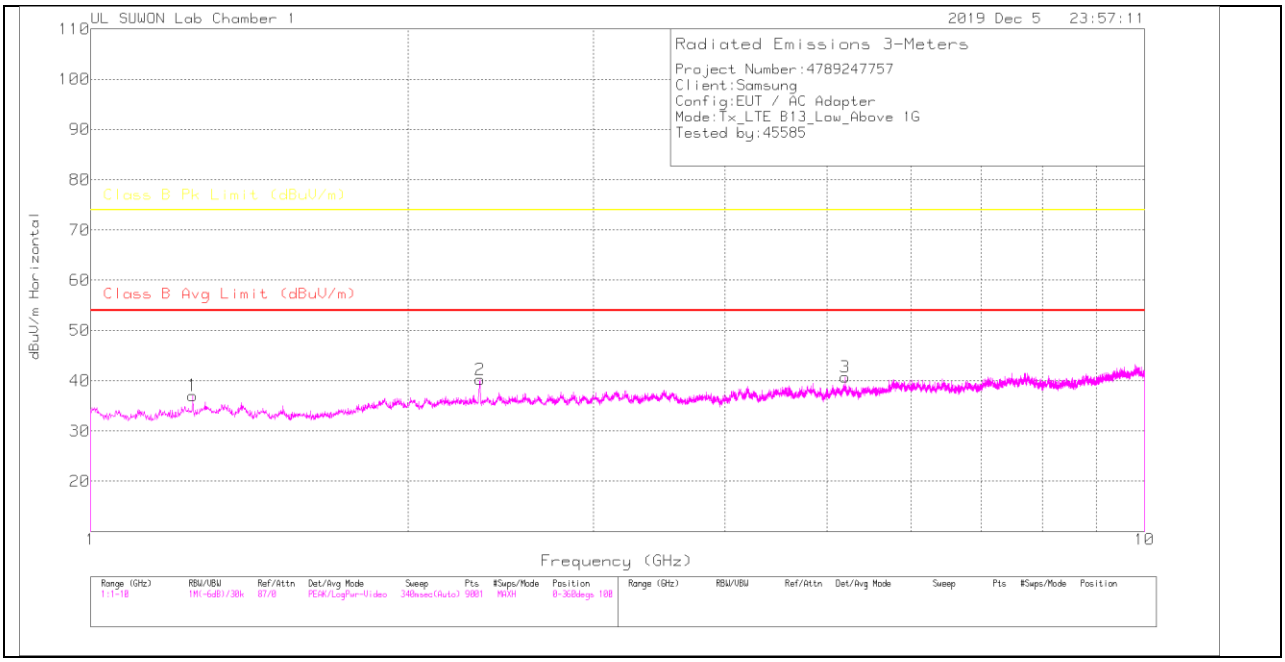
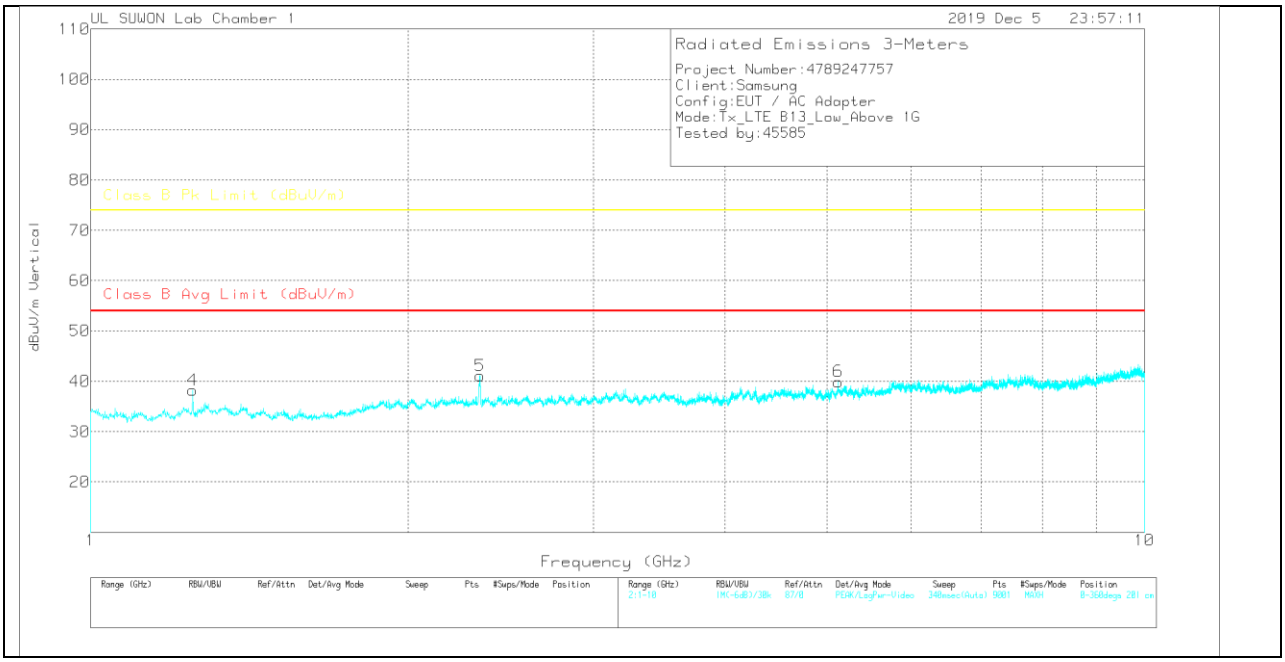
## 7.4. Above 1 GHz in the LTE Band 13

**LOW CHANNEL(748.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.25 | 38.76 | PK | 29.4 | -31.9 | .8 | 37.06 | - | - | 74 | -36.94 | 0-360 | 201 | H |
| 2 | 2.341 | 38.49 | PK | 31.5 | -30.5 | .7 | 40.19 | - | - | 74 | -33.81 | 0-360 | 100 | H |
| 3 | 5.2 | 33.6 | PK | 34.3 | -27.7 | .5 | 40.7 | - | - | 74 | -33.3 | 0-360 | 100 | H |
| 4 | 1.25 | 39.96 | PK | 29.4 | -31.9 | .8 | 38.26 | - | - | 74 | -35.74 | 0-360 | 201 | V |
| 5 | 2.341 | 39.46 | PK | 31.5 | -30.5 | .7 | 41.16 | - | - | 74 | -32.84 | 0-360 | 100 | V |
| 6 | 5.123 | 33.13 | PK | 34.2 | -27.9 | .5 | 39.93 | - | - | 74 | -34.07 | 0-360 | 201 | V |

PK – Peak Detector

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


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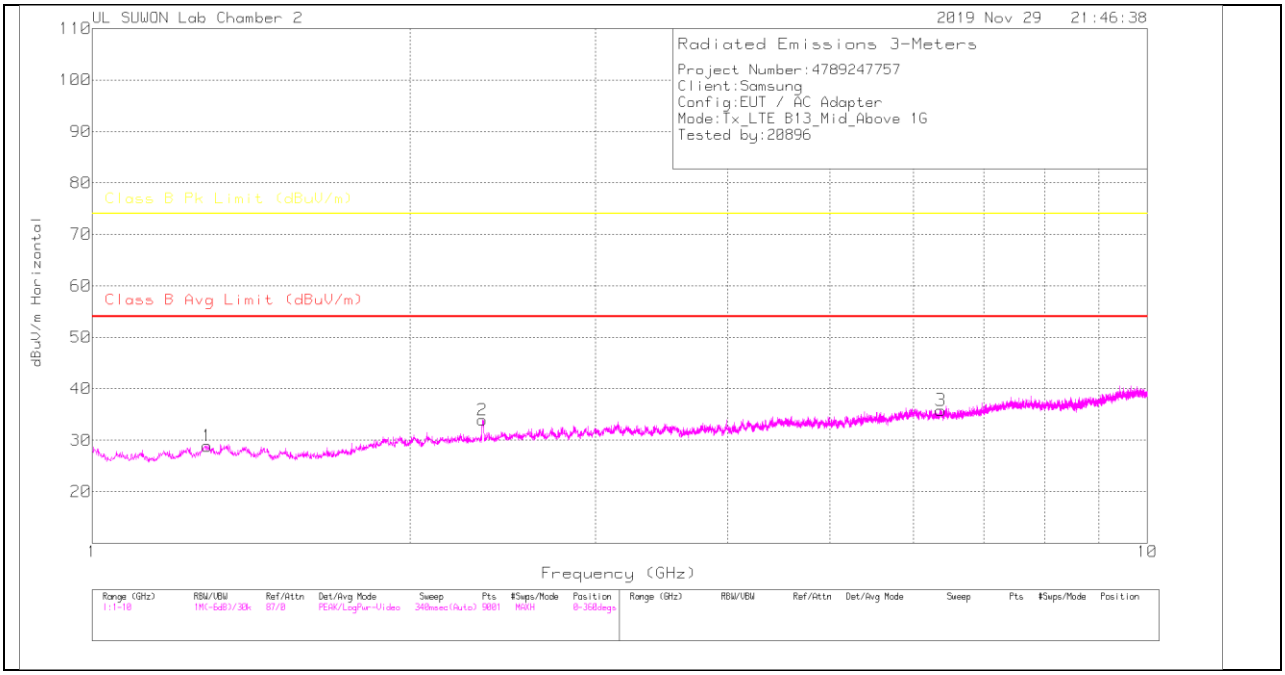
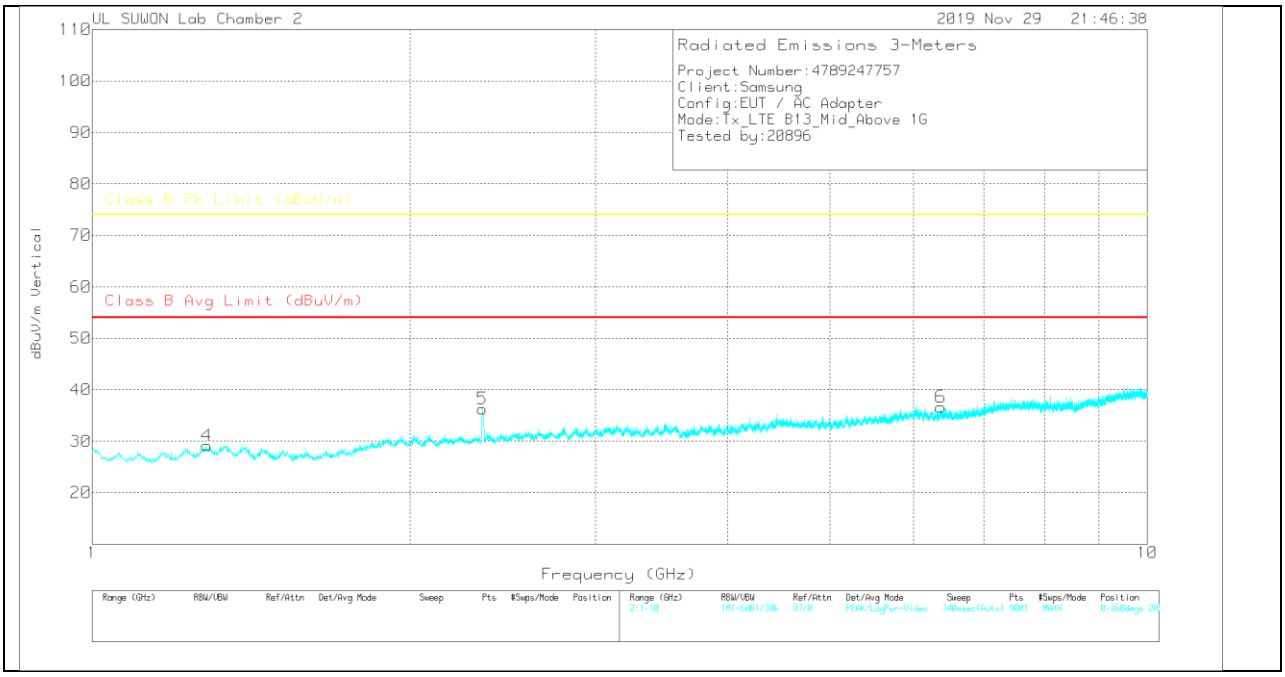
**MID CHANNEL(751.0MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.285 | 30.28 | PK | 29.6 | -31.8 | .8 | 28.88 | - | - | 74 | -45.12 | 0-360 | 100 | H |
| 2 | 2.344 | 32.21 | PK | 31.5 | -30.5 | .7 | 33.91 | - | - | 74 | -40.09 | 0-360 | 100 | H |
| 3 | 6.372 | 26.79 | PK | 35.2 | -26.7 | .5 | 35.79 | - | - | 74 | -38.21 | 0-360 | 200 | H |
| 4 | 1.284 | 30.64 | PK | 29.6 | -31.9 | .8 | 29.14 | - | - | 74 | -44.86 | 0-360 | 200 | V |
| 5 | 2.343 | 34.59 | PK | 31.5 | -30.5 | .7 | 36.29 | - | - | 74 | -37.71 | 0-360 | 100 | V |
| 6 | 6.372 | 27.65 | PK | 35.2 | -26.7 | .5 | 36.65 | - | - | 74 | -37.35 | 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.


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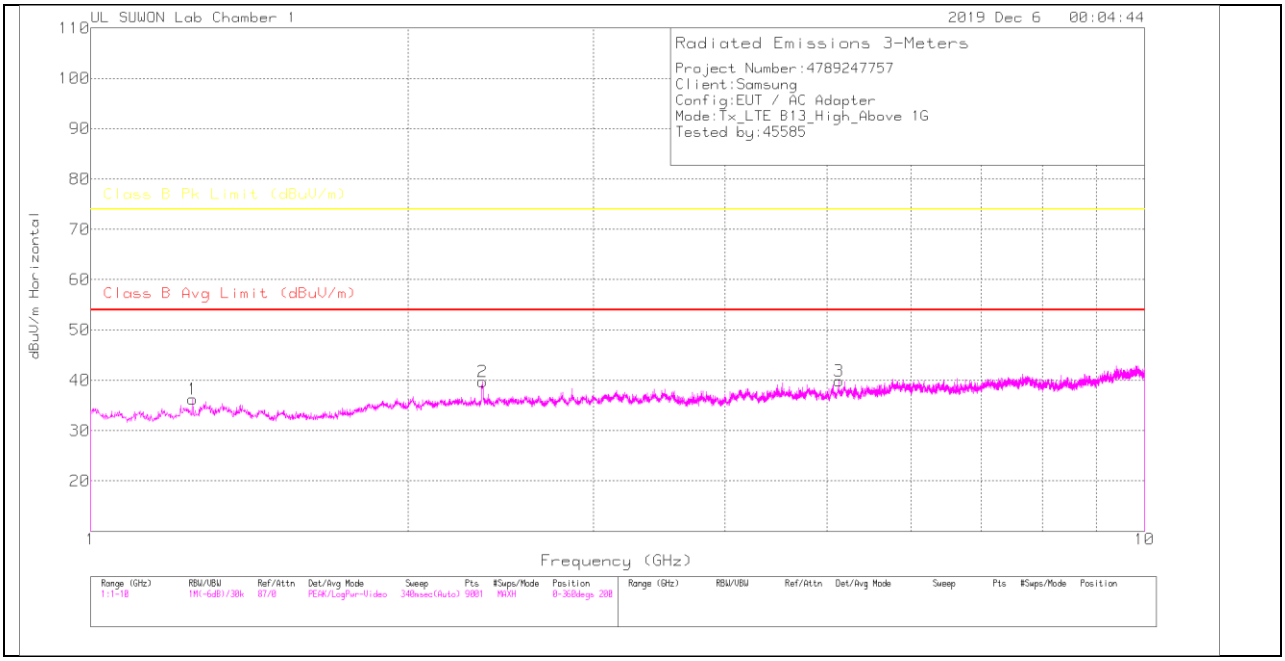
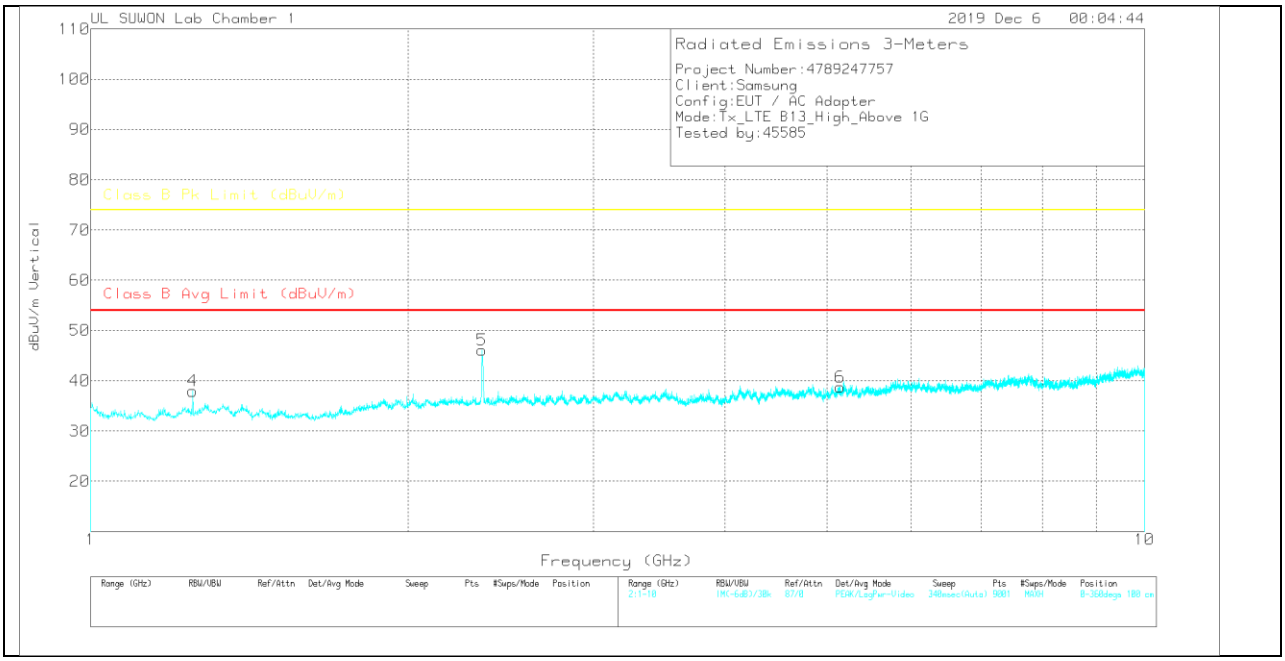
**HIGH CHANNEL(753.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.249 | 37.98 | PK | 29.4 | -31.9 | .8 | 36.28 | - | - | 74 | -37.72 | 0-360 | 200 | H |
| 2 | 2.353 | 37.98 | PK | 31.6 | -30.5 | .7 | 39.78 | - | - | 74 | -34.22 | 0-360 | 200 | H |
| 3 | 5.131 | 33.01 | PK | 34.2 | -27.8 | .5 | 39.91 | - | - | 74 | -34.09 | 0-360 | 200 | H |
| 4 | 1.25 | 39.64 | PK | 29.4 | -31.9 | .8 | 37.94 | - | - | 74 | -36.06 | 0-360 | 200 | V |
| 5 | 2.351 | 44.45 | PK | 31.6 | -30.6 | .7 | 46.15 | - | - | 74 | -27.85 | 0-360 | 100 | V |
| 6 | 5.146 | 31.8 | PK | 34.3 | -27.8 | .5 | 38.8 | - | - | 74 | -35.2 | 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.


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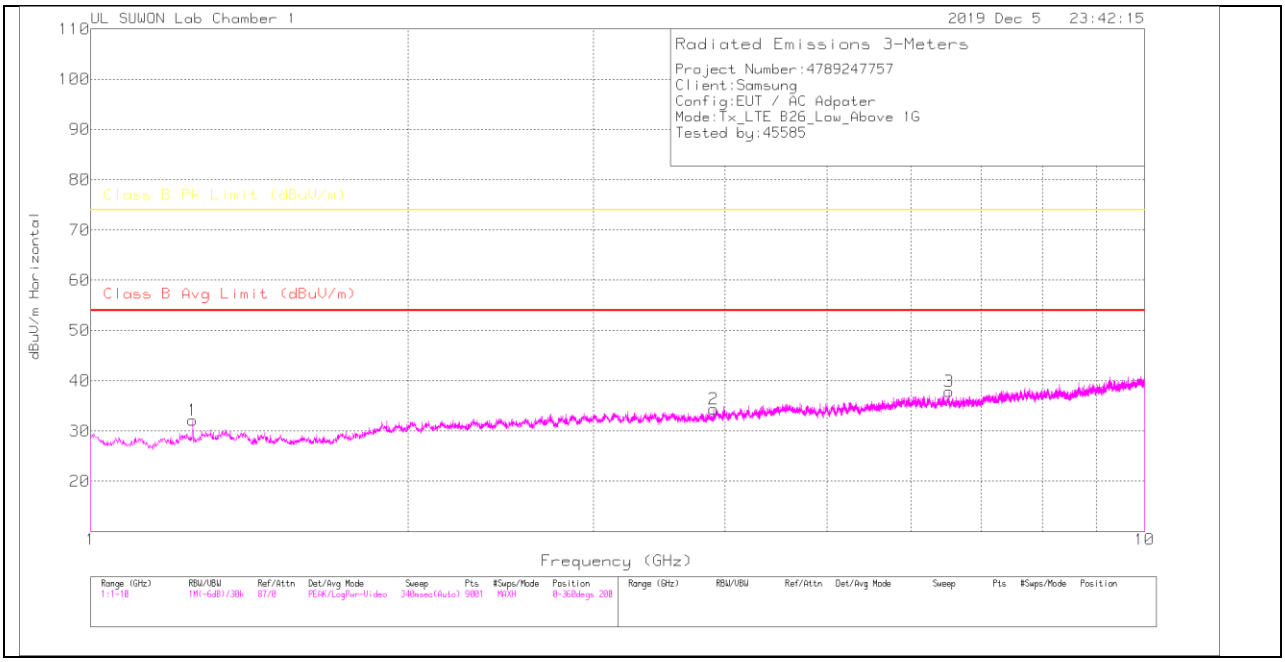
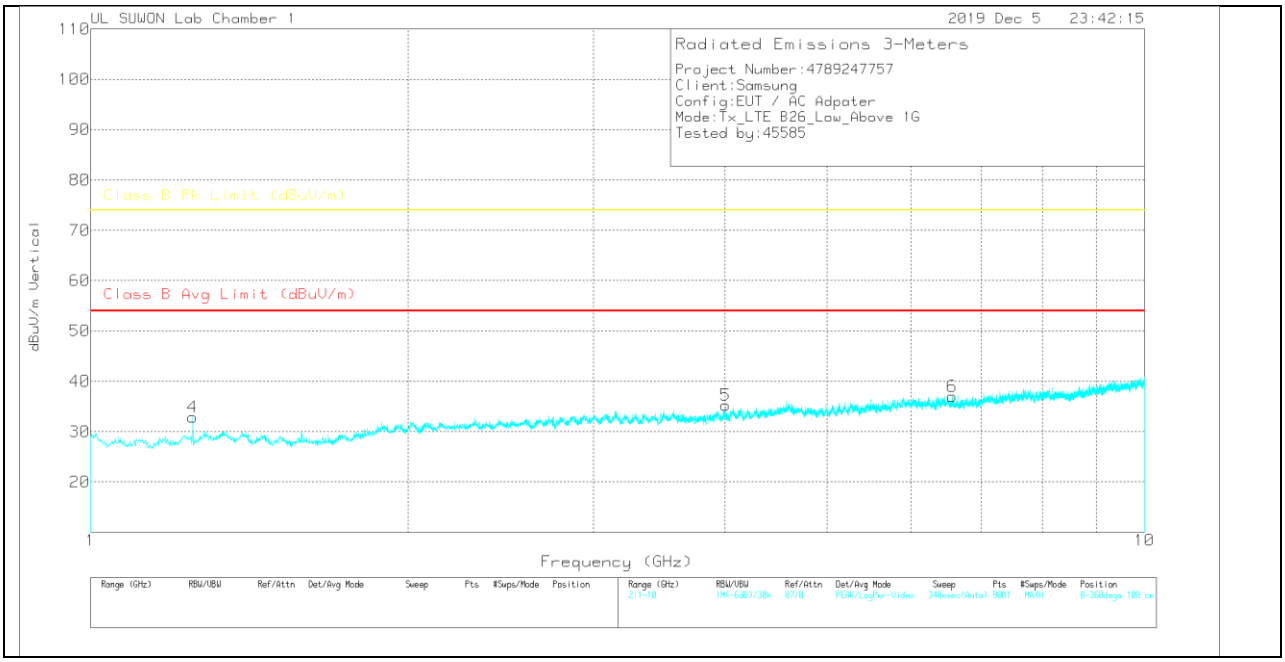
## 7.5. Above 1 GHz in the LTE Band 26

**LOW CHANNEL(860.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.25 | 39.29 | PK | 29.2 | -37 | .7 | 32.19 | - | - | 74 | -41.81 | 0-360 | 200 | H |
| 2 | 3.9 | 33.13 | PK | 33.5 | -32.7 | .5 | 34.43 | - | - | 74 | -39.57 | 0-360 | 200 | H |
| 3 | 6.522 | 31.28 | PK | 35.4 | -29.2 | .4 | 37.88 | - | - | 74 | -36.12 | 0-360 | 100 | H |
| 4 | 1.25 | 40 | PK | 29.2 | -37 | .7 | 32.9 | - | - | 74 | -41.1 | 0-360 | 200 | V |
| 5 | 4.001 | 33.72 | PK | 33.6 | -32.5 | .4 | 35.22 | - | - | 74 | -38.78 | 0-360 | 100 | V |
| 6 | 6.572 | 30.45 | PK | 35.4 | -29.3 | .4 | 36.95 | - | - | 74 | -37.05 | 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.


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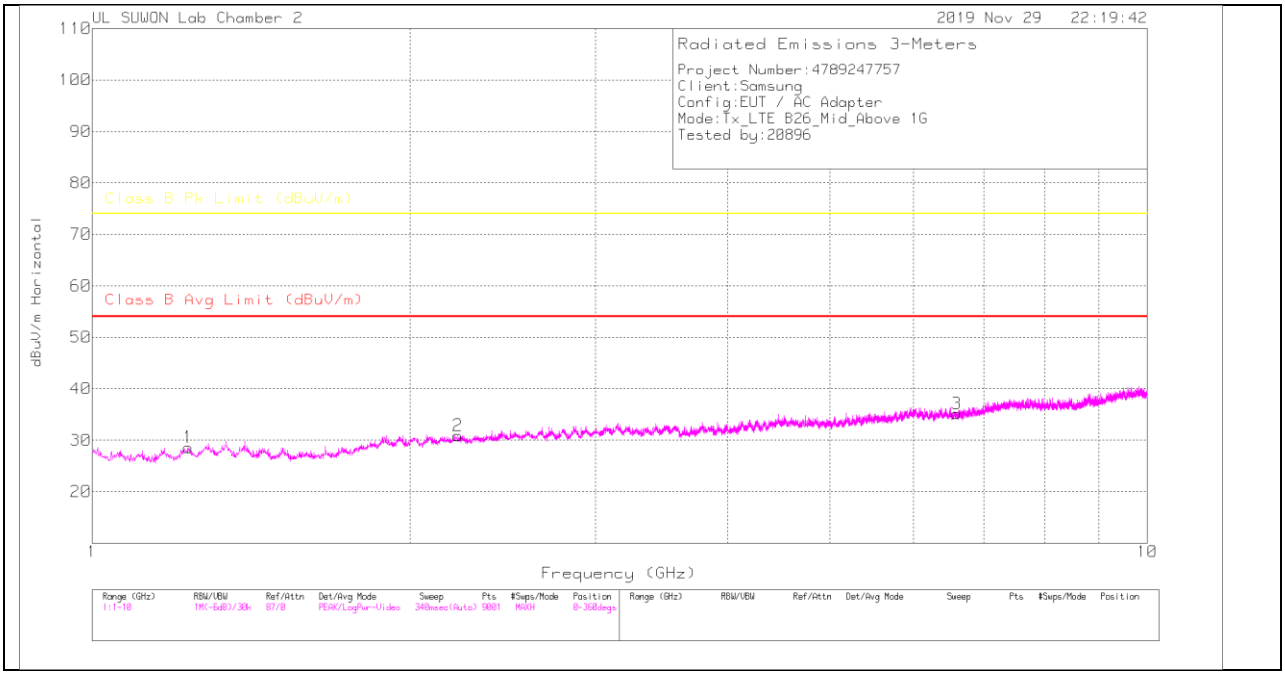
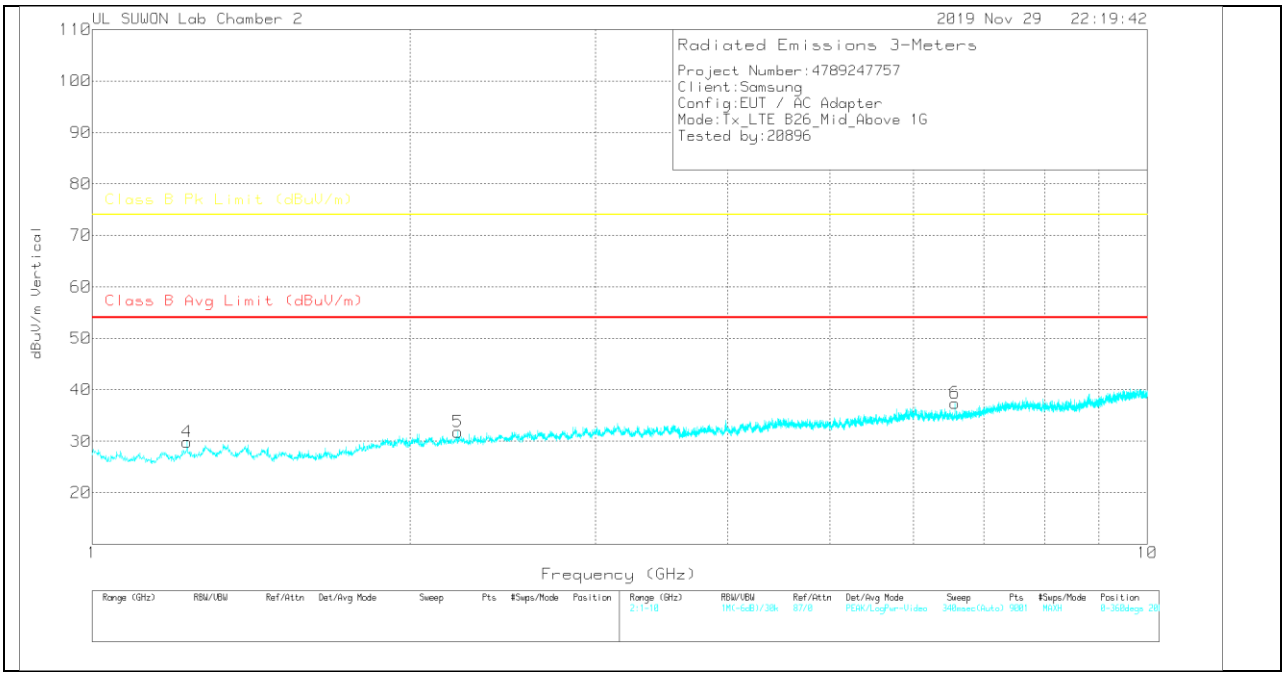
**MID CHANNEL(876.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.233 | 30.59 | PK | 29.2 | -32 | .8 | 28.59 | - | - | 74 | -45.41 | 0-360 | 100 | H |
| 2 | 2.221 | 29.49 | PK | 31.4 | -30.7 | .7 | 30.89 | - | - | 74 | -43.11 | 0-360 | 100 | H |
| 3 | 6.597 | 25.93 | PK | 35.3 | -26.6 | .5 | 35.13 | - | - | 74 | -38.87 | 0-360 | 200 | H |
| 4 | 1.23 | 31.86 | PK | 29.2 | -32 | .8 | 29.86 | - | - | 74 | -44.14 | 0-360 | 200 | V |
| 5 | 2.221 | 30.42 | PK | 31.4 | -30.7 | .7 | 31.82 | - | - | 74 | -42.18 | 0-360 | 200 | V |
| 6 | 6.571 | 28.31 | PK | 35.3 | -26.7 | .5 | 37.41 | - | - | 74 | -36.59 | 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.


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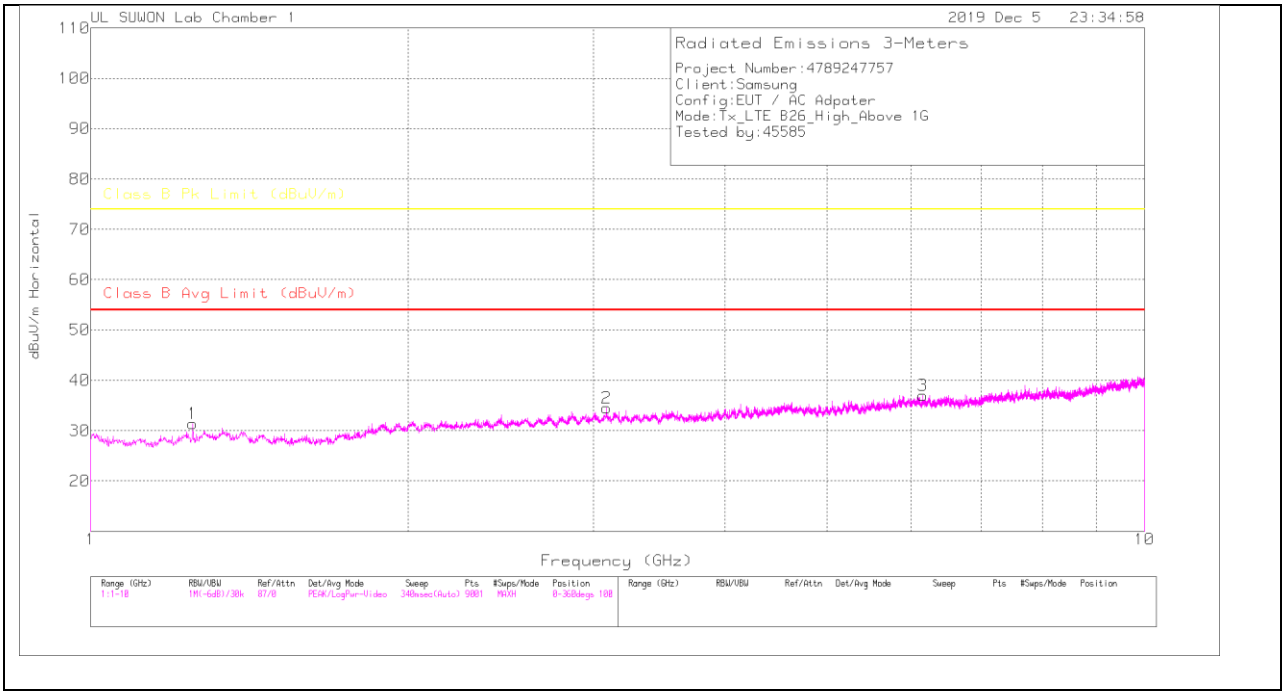
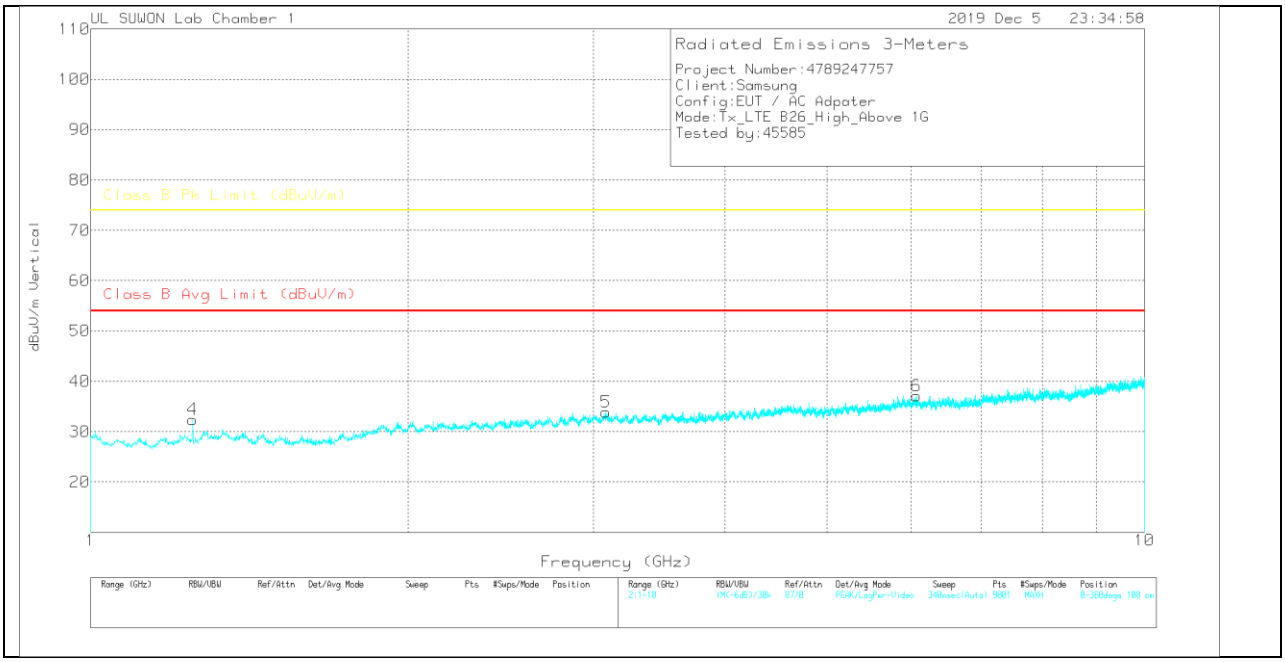
**HIGH CHANNEL(892.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 1.25 | 38.53 | PK | 29.2 | -37 | .7 | 31.43 | - | - | 74 | -42.57 | 0-360 | 200 | H |
| 2 | 3.087 | 34.94 | PK | 32.7 | -33.8 | .7 | 34.54 | - | - | 74 | -39.46 | 0-360 | 200 | H |
| 3 | 6.164 | 31.42 | PK | 35.2 | -30 | .4 | 37.02 | - | - | 74 | -36.98 | 0-360 | 200 | H |
| 4 | 1.25 | 39.55 | PK | 29.2 | -37 | .7 | 32.45 | - | - | 74 | -41.55 | 0-360 | 200 | V |
| 5 | 3.084 | 34.32 | PK | 32.6 | -33.7 | .7 | 33.92 | - | - | 74 | -40.08 | 0-360 | 200 | V |
| 6 | 6.074 | 31.79 | PK | 35.2 | -30.4 | .5 | 37.09 | - | - | 74 | -36.91 | 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.


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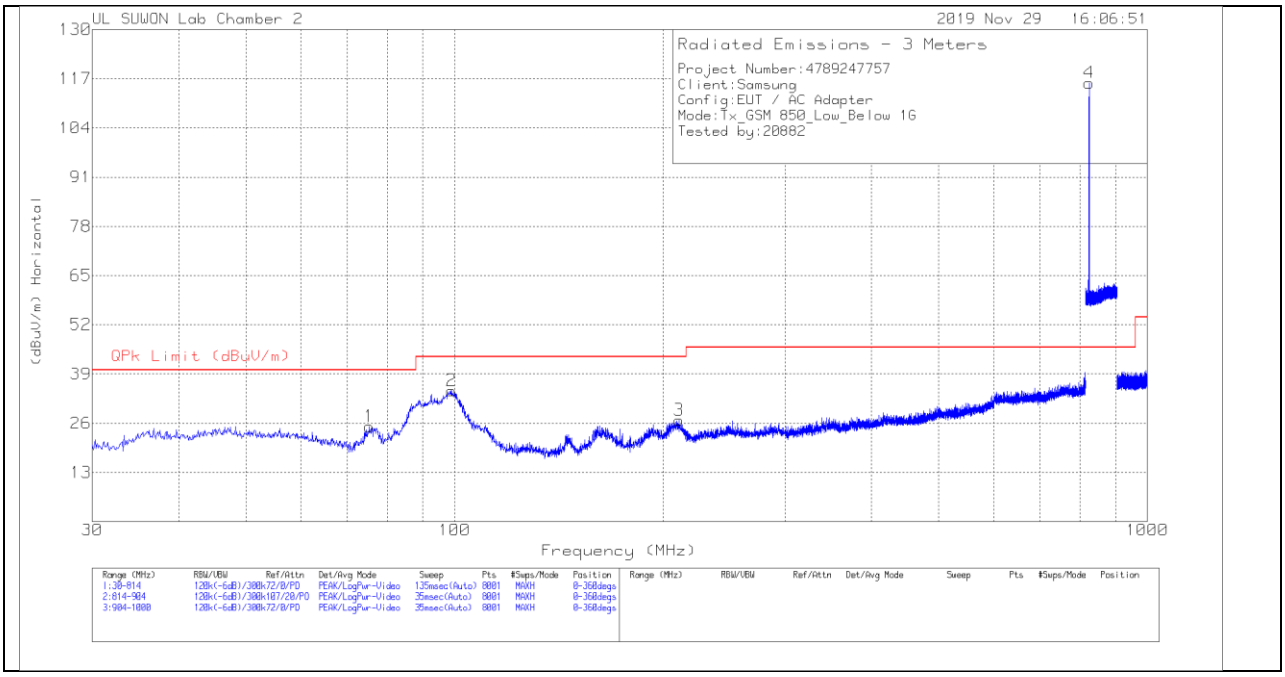
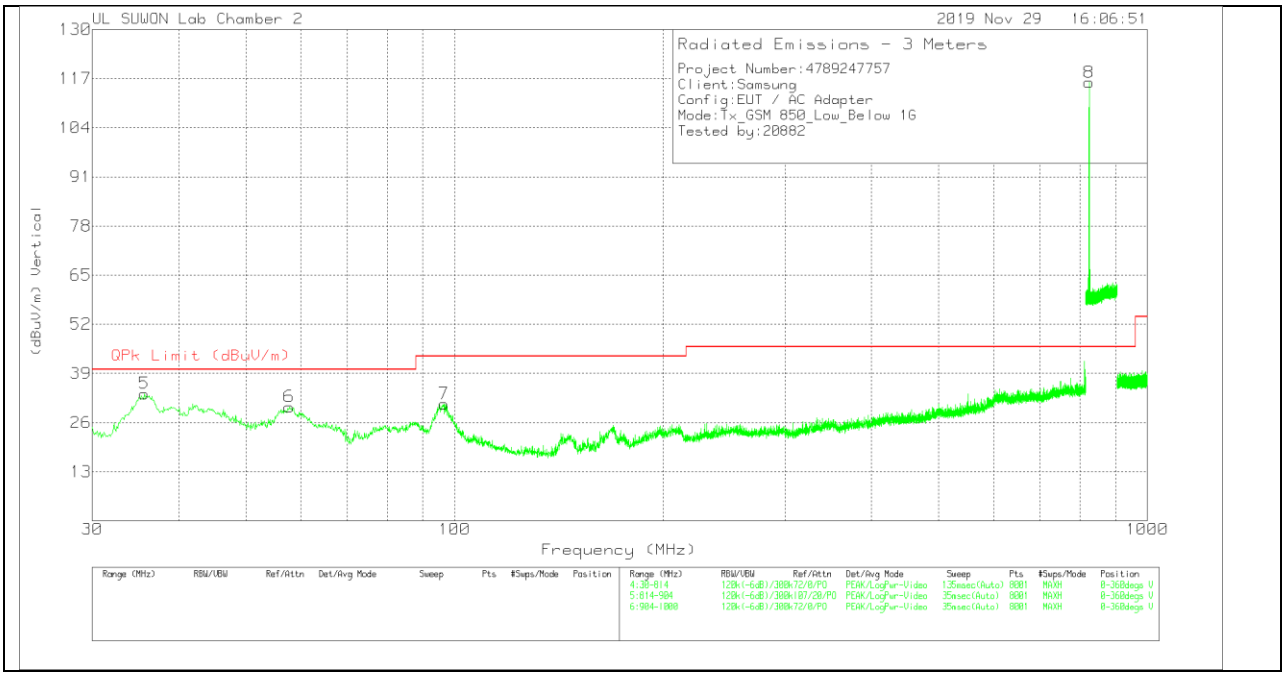
## 7.6. Below 1 GHz in the GSM850

**LOW CHANNEL(869.2MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 75.374 | 10.63 | Pk | 13.5 | 1 | 25.13 | 40 | -14.87 | 0-360 | 200 | H |
| 2 | 98.992 | 15.81 | Pk | 17.7 | 1.1 | 34.61 | 43.52 | -8.91 | 0-360 | 200 | H |
| 3 | 211.006 | 8.18 | Pk | 17 | 1.6 | 26.78 | 43.52 | -16.74 | 0-360 | 100 | H |
| 4 | 824.1363 | 85.82 | Pk | 26.9 | 3.2 | 115.92 | **46.02** | **69.9** | 0-360 | 100 | H |
| 5 | 35.684 | 15.94 | Pk | 17 | .7 | 33.64 | 40 | -6.36 | 0-360 | 100 | V |
| 6 | 57.734 | 10.34 | Pk | 18.9 | .9 | 30.14 | 40 | -9.86 | 0-360 | 100 | V |
| 7 | 96.542 | 12.41 | Pk | 17.4 | 1.1 | 30.91 | 43.52 | -12.61 | 0-360 | 200 | V |
| 8 | 824.215 | 85.9 | Pk | 26.9 | 3.2 | 116 | **46.02** | **69.98** | 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.


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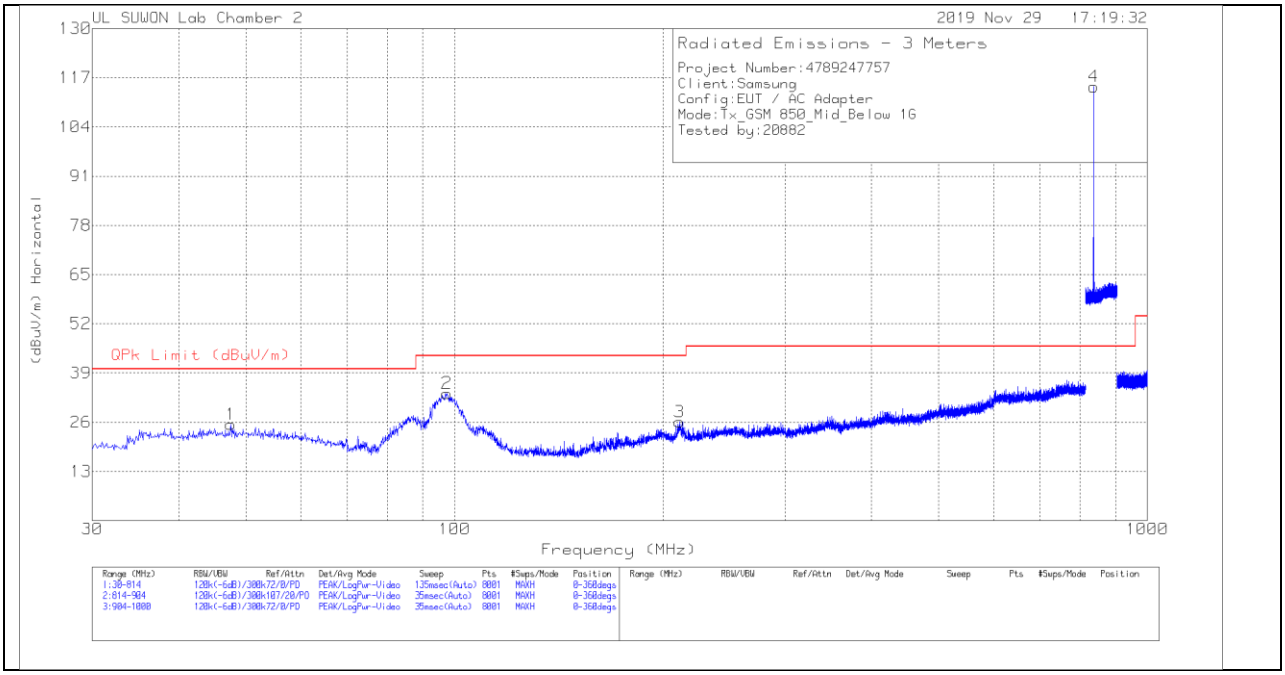
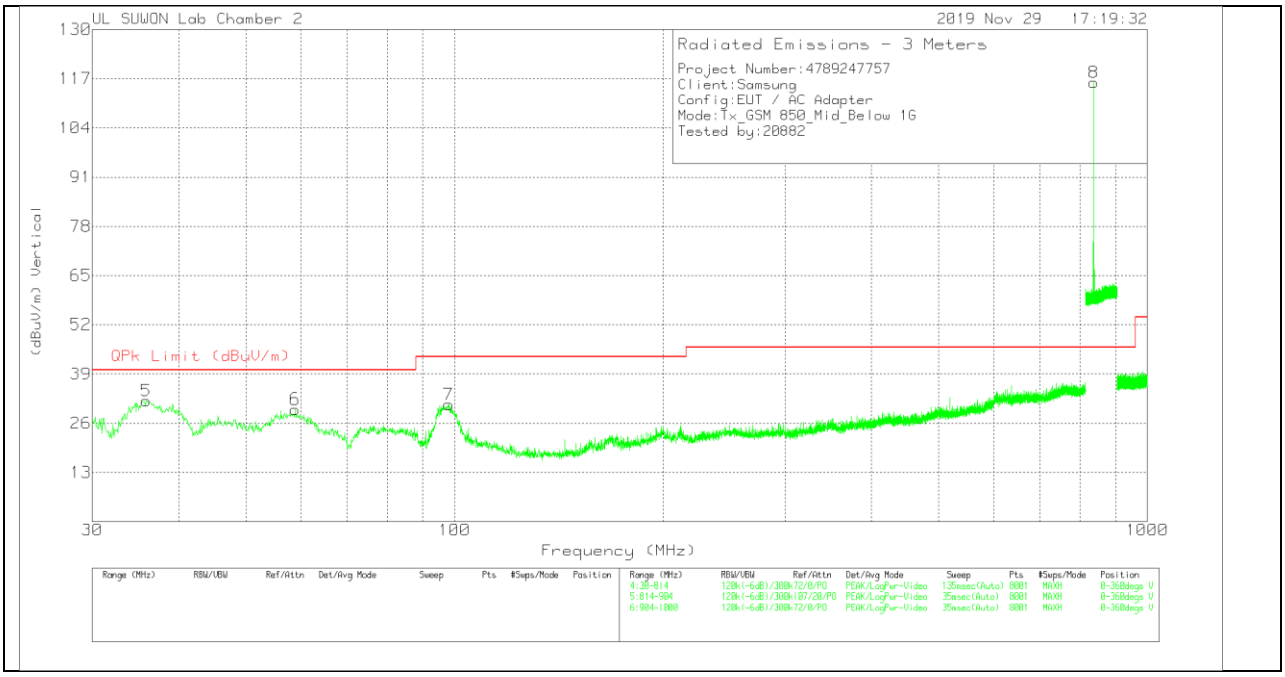
**MID CHANNEL(881.6MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 47.542 | 4.78 | Pk | 19.8 | .8 | 25.38 | 40 | -14.62 | 0-360 | 400 | H |
| 2 | 97.522 | 15.02 | Pk | 17.5 | 1.1 | 33.62 | 43.52 | -9.9 | 0-360 | 300 | H |
| 3 | 211.202 | 7.46 | Pk | 17 | 1.6 | 26.06 | 43.52 | -17.46 | 0-360 | 100 | H |
| 4 | 836.5675 | 84.24 | Pk | 27.1 | 3.3 | 114.64 | **46.02** | **68.62** | 0-360 | 100 | H |
| 5 | 35.88 | 14.07 | Pk | 17.1 | .7 | 31.87 | 40 | -8.13 | 0-360 | 100 | V |
| 6 | 58.91 | 10.01 | Pk | 18.7 | .9 | 29.61 | 40 | -10.39 | 0-360 | 100 | V |
| 7 | 98.11 | 12.16 | Pk | 17.6 | 1.1 | 30.86 | 43.52 | -12.66 | 0-360 | 100 | V |
| 8 | 836.5675 | 85.59 | Pk | 27.1 | 3.3 | 115.99 | **46.02** | **69.97** | 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.


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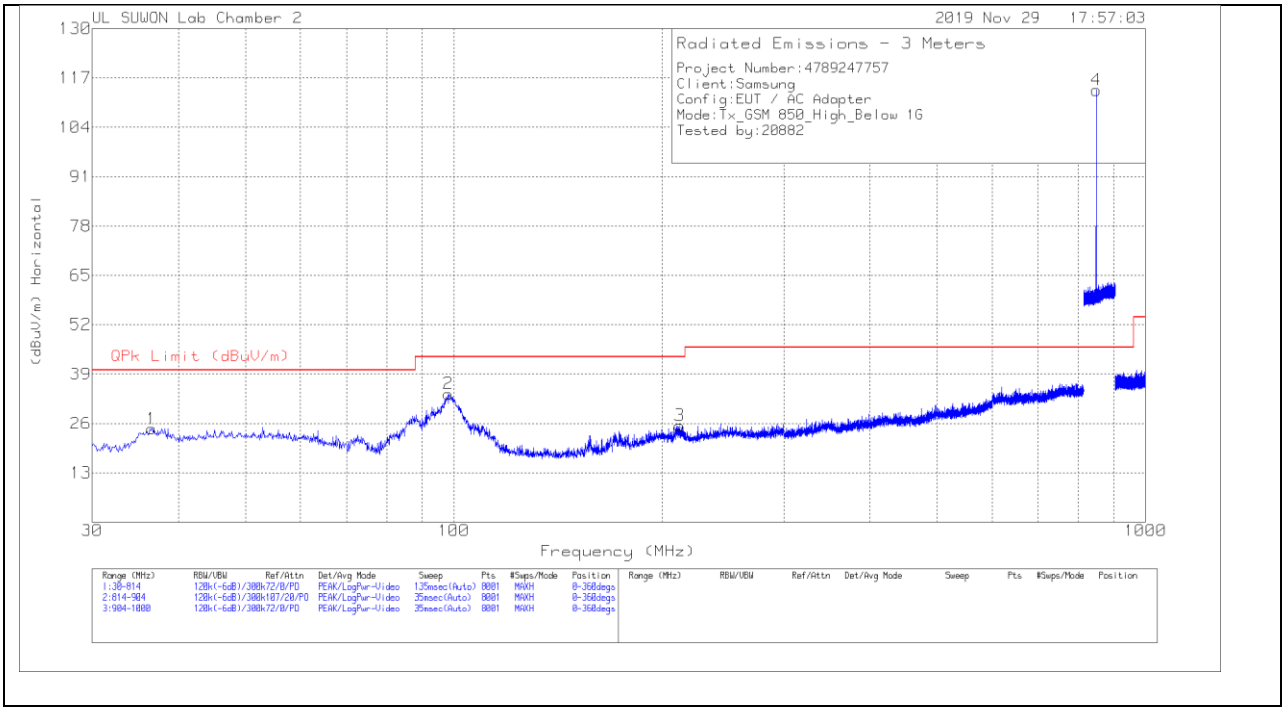
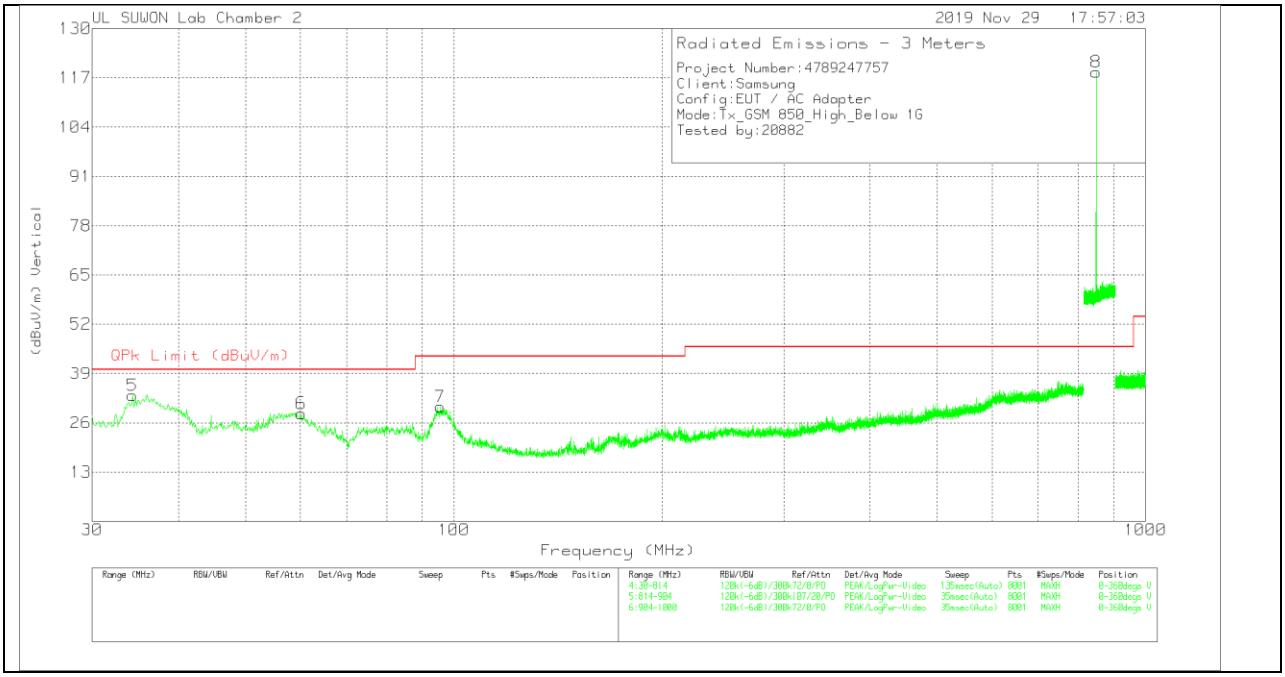
**HIGH CHANNEL(893.8MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 36.566 | 6.57 | Pk | 17.3 | .7 | 24.57 | 40 | -15.43 | 0-360 | 300 | H |
| 2 | 98.208 | 15.11 | Pk | 17.6 | 1.1 | 33.81 | 43.52 | -9.71 | 0-360 | 300 | H |
| 3 | 212.084 | 6.75 | Pk | 17.1 | 1.6 | 25.45 | 43.52 | -18.07 | 0-360 | 200 | H |
| 4 | 848.8638 | 83.11 | Pk | 27.4 | 3.3 | 113.81 | **46.02** | **67.79** | 0-360 | 200 | H |
| 5 | 34.312 | 16.29 | Pk | 16.2 | .7 | 33.19 | 40 | -6.81 | 0-360 | 100 | V |
| 6 | 60.184 | 9.04 | Pk | 18.5 | .9 | 28.44 | 40 | -11.56 | 0-360 | 100 | V |
| 7 | 95.562 | 11.82 | Pk | 17.3 | 1.1 | 30.22 | 43.52 | -13.3 | 0-360 | 100 | V |
| 8 | 848.8188 | 87.82 | Pk | 27.4 | 3.3 | 118.52 | **46.02** | **72.5** | 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.


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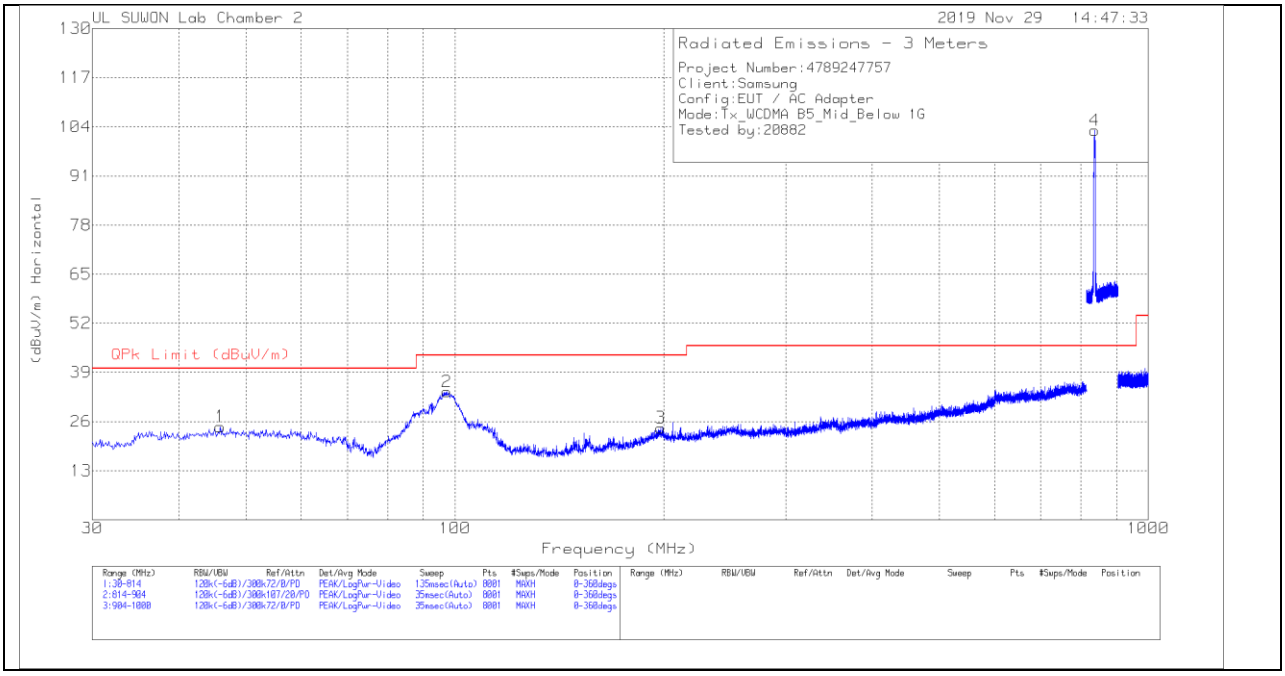
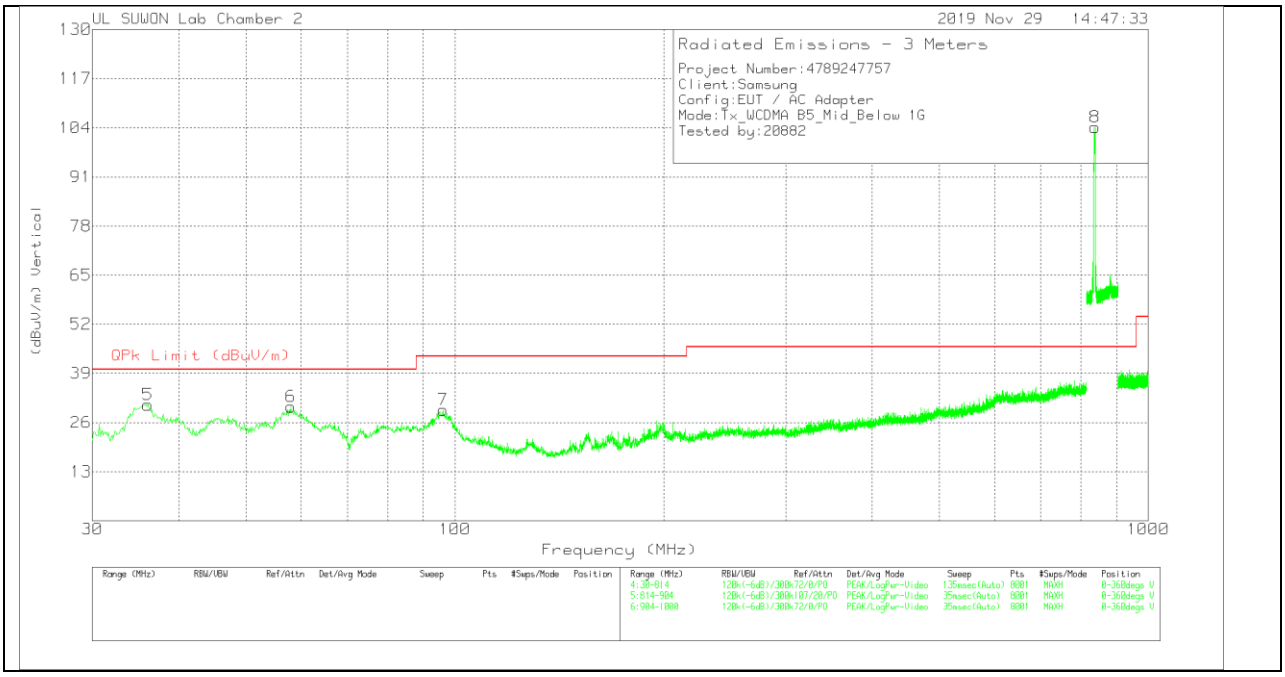
## 7.7. Below 1 GHz in the WCDMA Band 5

**MID CHANNEL(881.6MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 45.876 | 4.1 | Pk | 19.7 | .8 | 24.6 | 40 | -15.4 | 0-360 | 300 | H |
| 2 | 97.326 | 15.29 | Pk | 17.5 | 1.1 | 33.89 | 43.52 | -9.63 | 0-360 | 300 | H |
| 3 | 198.07 | 4.31 | Pk | 18.4 | 1.6 | 24.31 | 43.52 | -19.21 | 0-360 | 200 | H |
| 4 | 837.2763 | 72.64 | Pk | 27.1 | 3.3 | 103.04 | **46.02** | **57.02** | 0-360 | 100 | H |
| 5 | 36.076 | 12.87 | Pk | 17.1 | .7 | 30.67 | 40 | -9.33 | 0-360 | 100 | V |
| 6 | 58.028 | 10.49 | Pk | 18.8 | .9 | 30.19 | 40 | -9.81 | 0-360 | 100 | V |
| 7 | 96.15 | 10.83 | Pk | 17.4 | 1.1 | 29.33 | 43.52 | -14.19 | 0-360 | 100 | V |
| 8 | 838.1875 | 73.77 | Pk | 27.1 | 3.3 | 104.17 | **46.02** | **58.15** | 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.


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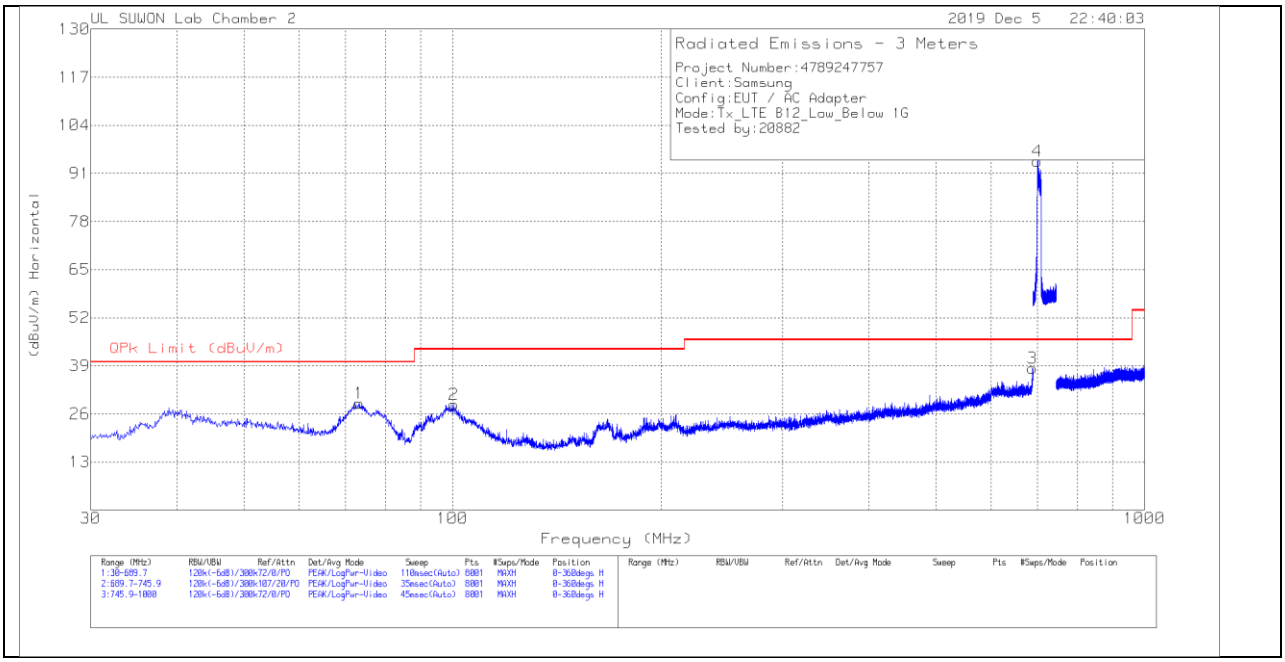
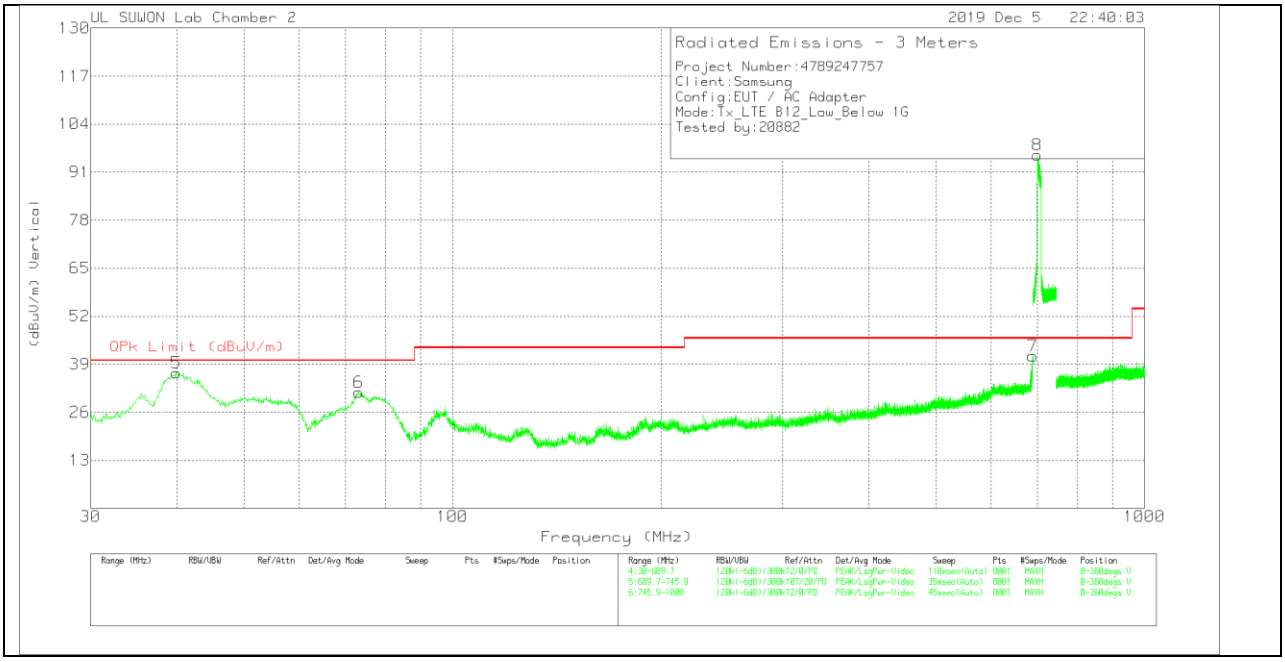
## 7.8. Below 1 GHz in the LTE Band 12

**LOW CHANNEL(730.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 73.2931 | 13.69 | Pk | 14.2 | 1 | 28.89 | 40 | -11.11 | 0-360 | 300 | H |
| 2 | 100.3409 | 9.78 | Pk | 17.7 | 1.1 | 28.58 | 43.52 | -14.94 | 0-360 | 300 | H |
| 3 | 689.0443 | 9.69 | Pk | 25.7 | 3 | 38.39 | 46.02 | -7.63 | 0-360 | 200 | H |
| 4 | 699.6123 | 65.67 | Pk | 25.6 | 3 | 94.27 | **46.02** | **48.25** | 0-360 | 100 | H |
| 5 | 39.8956 | 17.23 | Pk | 18.7 | .7 | 36.63 | 40 | -3.37 | 0-360 | 100 | V |
| 6 | 73.2106 | 16.21 | Pk | 14.2 | 1 | 31.41 | 40 | -8.59 | 0-360 | 100 | V |
| 7 | 689.3741 | 12.53 | Pk | 25.7 | 3 | 41.23 | 46.02 | -4.79 | 0-360 | 100 | V |
| 8 | 699.7668 | 66.99 | Pk | 25.6 | 3 | 95.59 | **46.02** | **49.57** | 0-360 | 100 | V |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 39.8956 | 13.59 | Qp | 18.7 | .7 | 32.99 | 40 | -7.01 | 232 | 100 | V |
| 689.3741 | 11.58 | Qp | 25.7 | 3 | 40.28 | 46.02 | -5.74 | 125 | 146 | V |

Qp - Quasi-Peak detector

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


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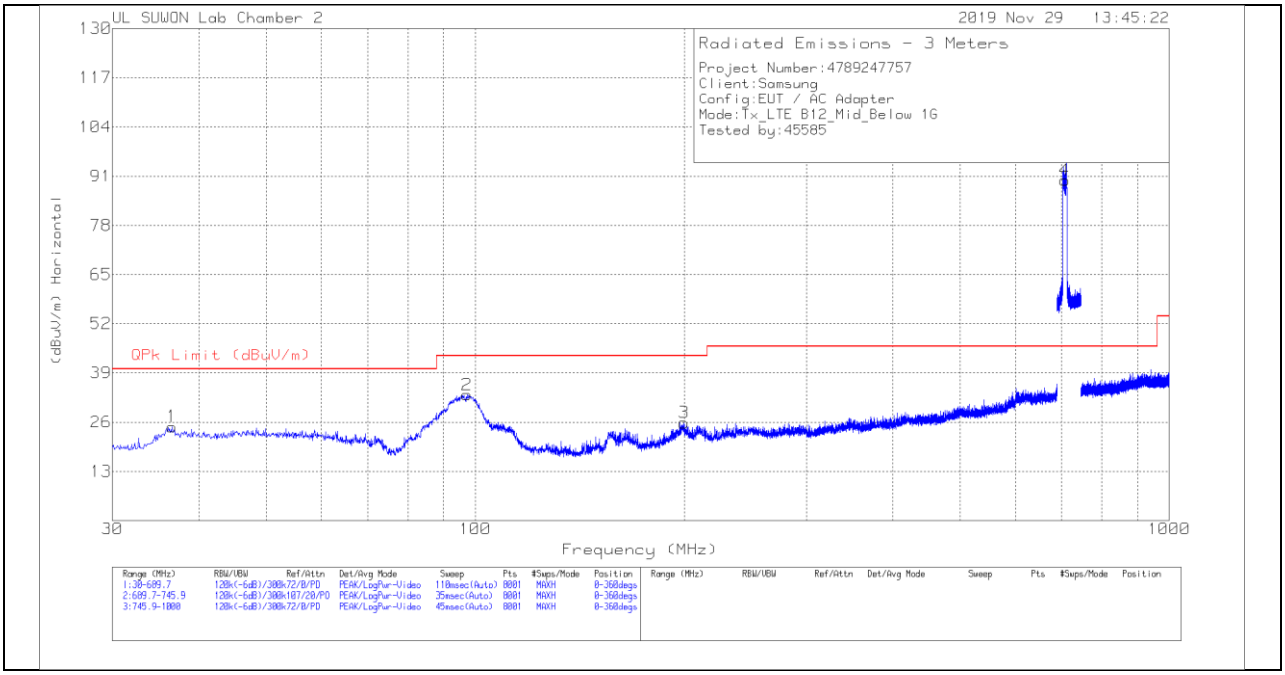
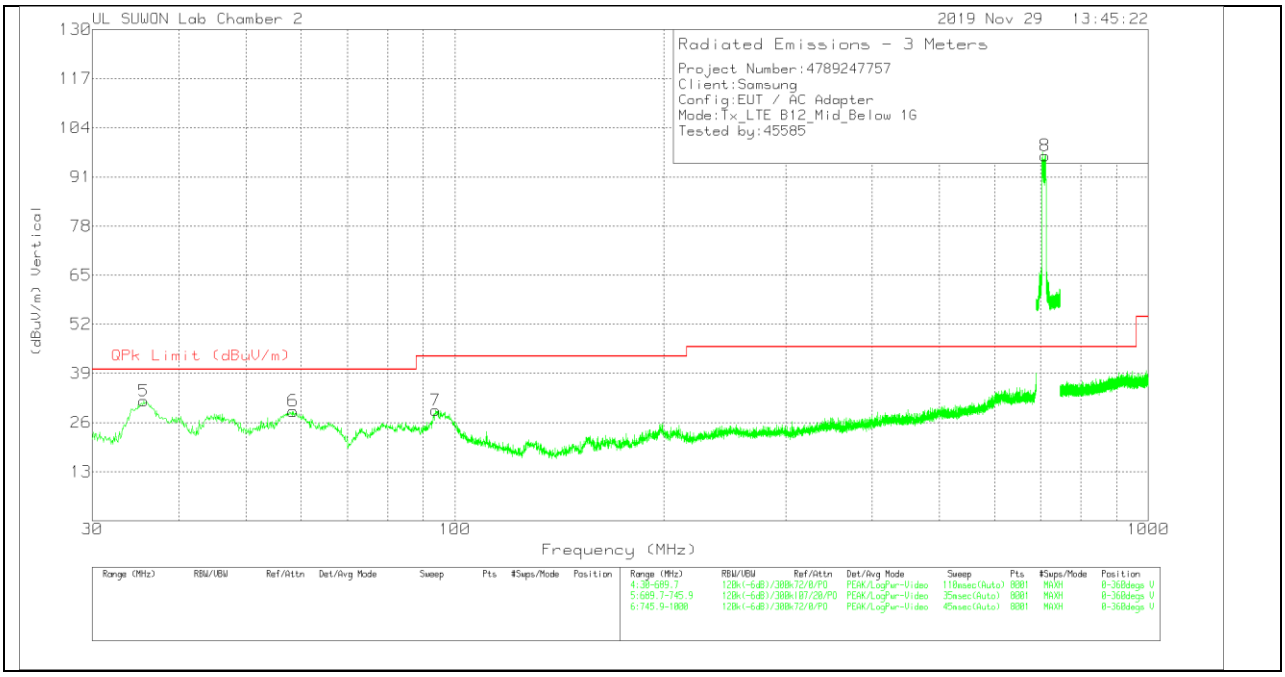
**MID CHANNEL(737.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 36.597 | 6.8 | Pk | 17.3 | .7 | 24.8 | 40 | -15.2 | 0-360 | 400 | H |
| 2 | 97.2898 | 14.61 | Pk | 17.5 | 1.1 | 33.21 | 43.52 | -10.31 | 0-360 | 300 | H |
| 3 | 199.9562 | 6.14 | Pk | 18.1 | 1.6 | 25.84 | 43.52 | -17.68 | 0-360 | 100 | H |
| 4 | 707.4381 | 61.41 | Pk | 25.5 | 3 | 89.91 | **46.02** | **43.89** | 0-360 | 100 | H |
| 5 | 35.6075 | 14.12 | Pk | 16.9 | .7 | 31.72 | 40 | -8.28 | 0-360 | 100 | V |
| 6 | 58.4497 | 9.3 | Pk | 18.8 | .9 | 29 | 40 | -11 | 0-360 | 100 | V |
| 7 | 93.8264 | 11.23 | Pk | 16.9 | 1.1 | 29.23 | 43.52 | -14.29 | 0-360 | 100 | V |
| 8 | 709.918 | 68.08 | Pk | 25.5 | 3 | 96.58 | **46.02** | **50.56** | 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.


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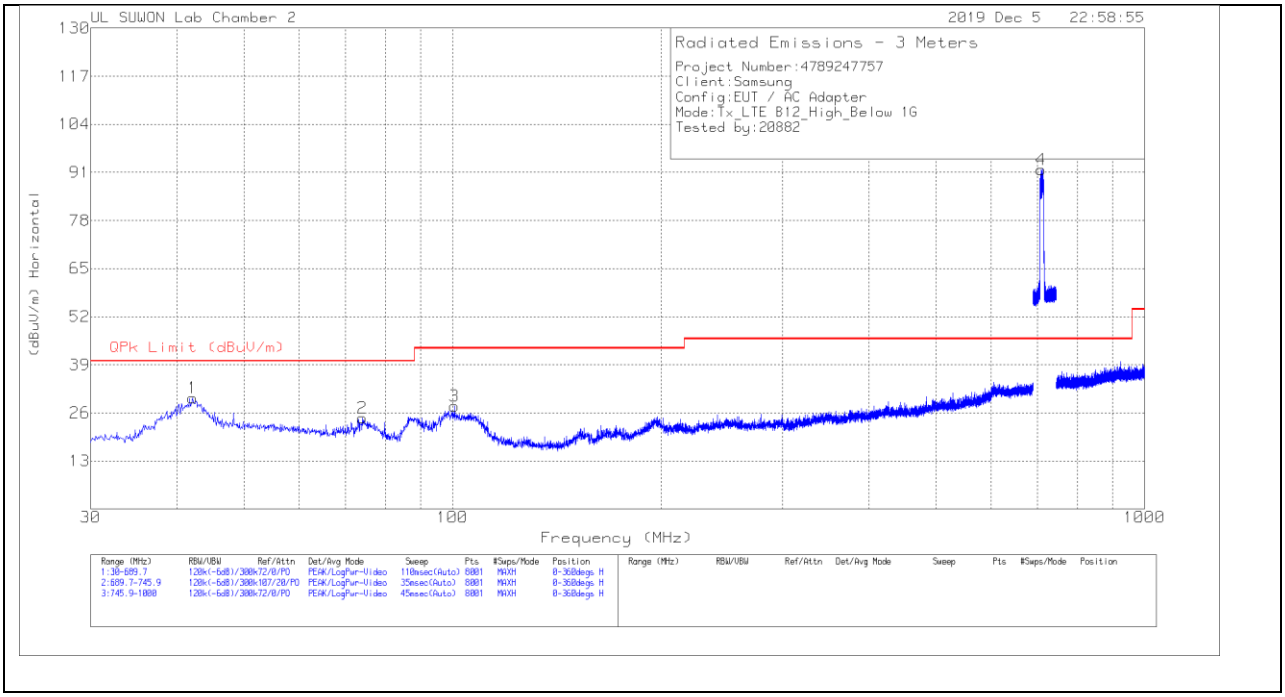
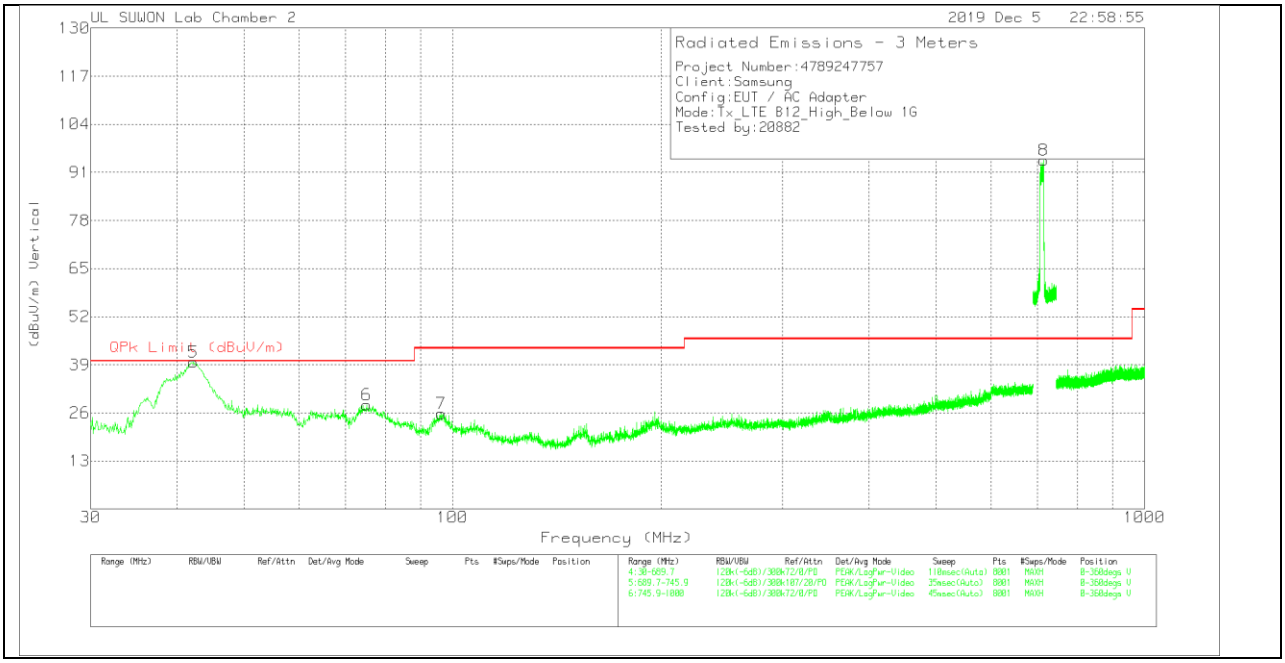
**HIGH CHANNEL(744.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**DATA**

## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass [dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42.1221 | 10.14 | Pk | 19.2 | .7 | 30.04 | 40 | -9.96 | 0-360 | 300 | H |
| 2 | 74.0352 | 9.81 | Pk | 13.8 | 1 | 24.61 | 40 | -15.39 | 0-360 | 300 | H |
| 3 | 100.6708 | 9 | Pk | 17.7 | 1.1 | 27.8 | 43.52 | -15.72 | 0-360 | 300 | H |
| 4 | 708.4287 | 63.23 | Pk | 25.5 | 3 | 91.73 | **46.02** | **45.71** | 0-360 | 100 | H |
| 5 | 42.2045 | 19.87 | Pk | 19.2 | .7 | 39.77 | 40 | -.23 | 0-360 | 100 | V |
| 6 | 75.1073 | 13.74 | Pk | 13.5 | 1 | 28.24 | 40 | -11.76 | 0-360 | 100 | V |
| 7 | 96.3003 | 7.26 | Pk | 17.4 | 1.1 | 25.76 | 43.52 | -17.76 | 0-360 | 100 | V |
| 8 | 714.7301 | 65.73 | Pk | 25.6 | 3 | 94.33 | **46.02** | **48.31** | 0-360 | 100 | V |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 42.2045 | 16.48 | Qp | 19.2 | .7 | 36.38 | 40 | -3.62 | 183 | 100 | V |

Qp - Quasi-Peak detector

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


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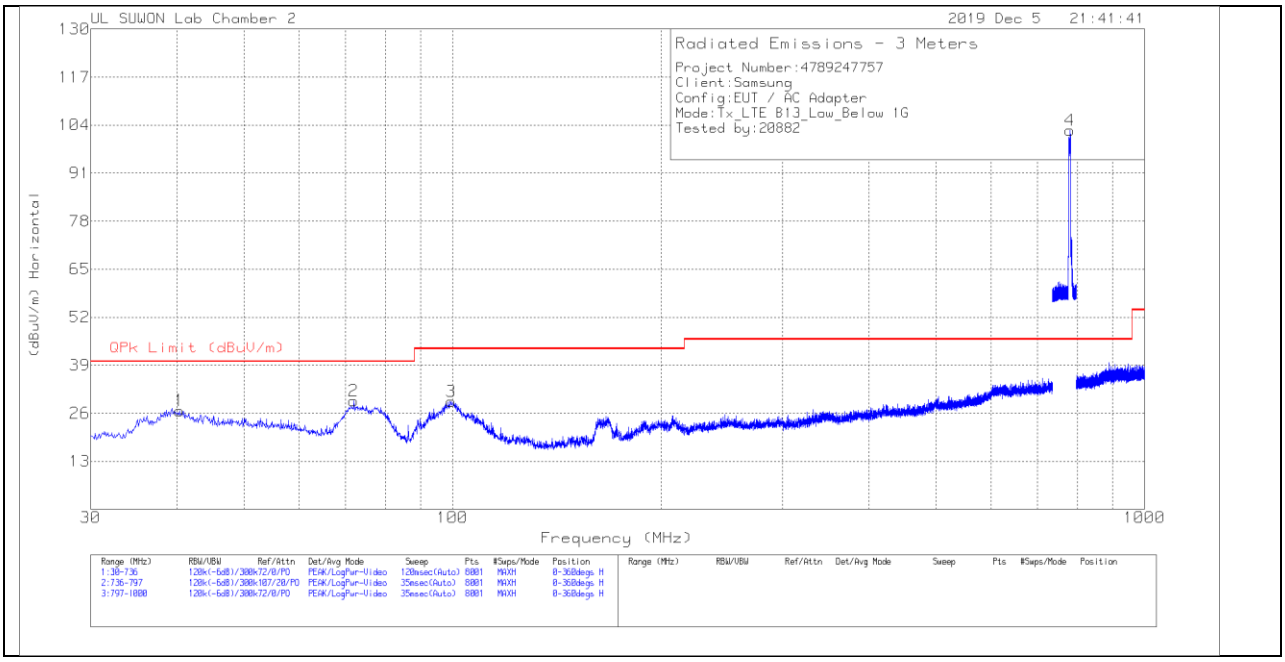
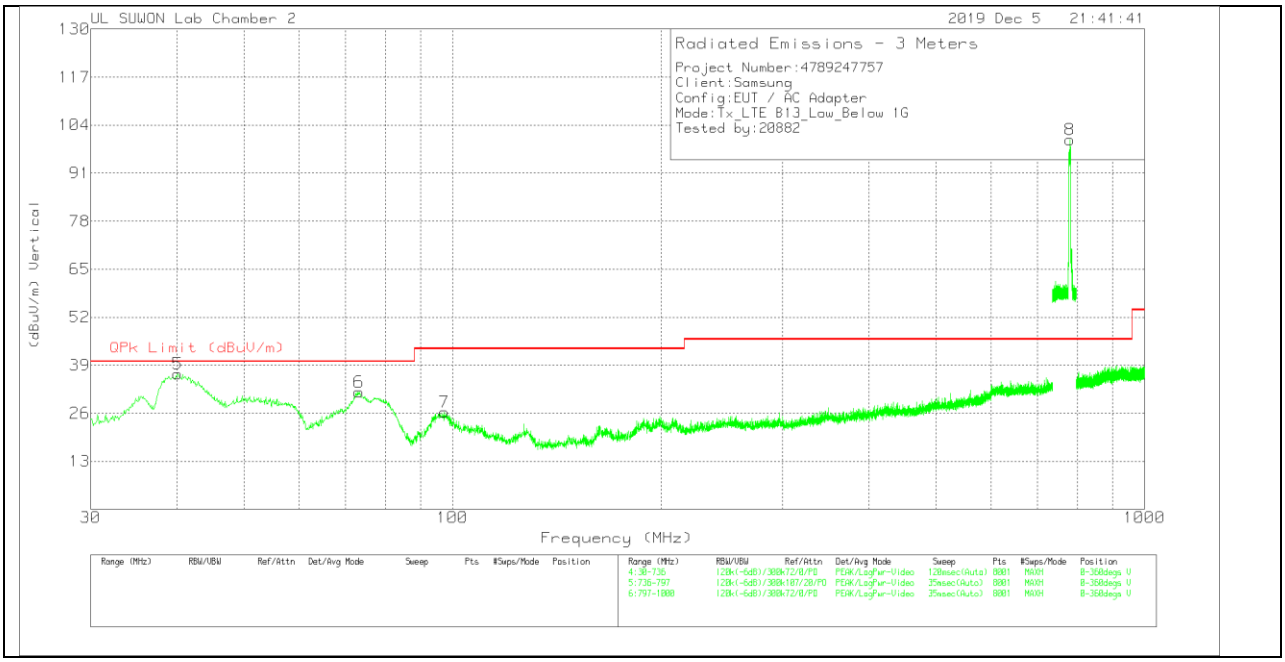
## 7.9. Below 1 GHz in the LTE Band 13

**LOW CHANNEL(748.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 40.3253 | 7.25 | Pk | 18.8 | .7 | 26.75 | 40 | -13.25 | 0-360 | 300 | H |
| 2 | 72.007 | 13.55 | Pk | 14.8 | 1 | 29.35 | 40 | -10.65 | 0-360 | 300 | H |
| 3 | 99.6293 | 10.4 | Pk | 17.7 | 1.1 | 29.2 | 43.52 | -14.32 | 0-360 | 300 | H |
| 4 | 780.4538 | 72.62 | Pk | 26.7 | 3.2 | 102.52 | **46.02** | **56.5** | 0-360 | 100 | H |
| 5 | 40.0605 | 17.33 | Pk | 18.7 | .7 | 36.73 | 40 | -3.27 | 0-360 | 100 | V |
| 6 | 73.2425 | 16.59 | Pk | 14.2 | 1 | 31.79 | 40 | -8.21 | 0-360 | 100 | V |
| 7 | 97.2465 | 7.9 | Pk | 17.4 | 1.1 | 26.4 | 43.52 | -17.12 | 0-360 | 100 | V |
| 8 | 780.7206 | 70.14 | Pk | 26.7 | 3.2 | 100.04 | **46.02** | **54.02** | 0-360 | 100 | V |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 40.0605 | 14.92 | Qp | 18.7 | .7 | 34.32 | 40 | -5.68 | 259 | 100 | V |

Qp - Quasi-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.


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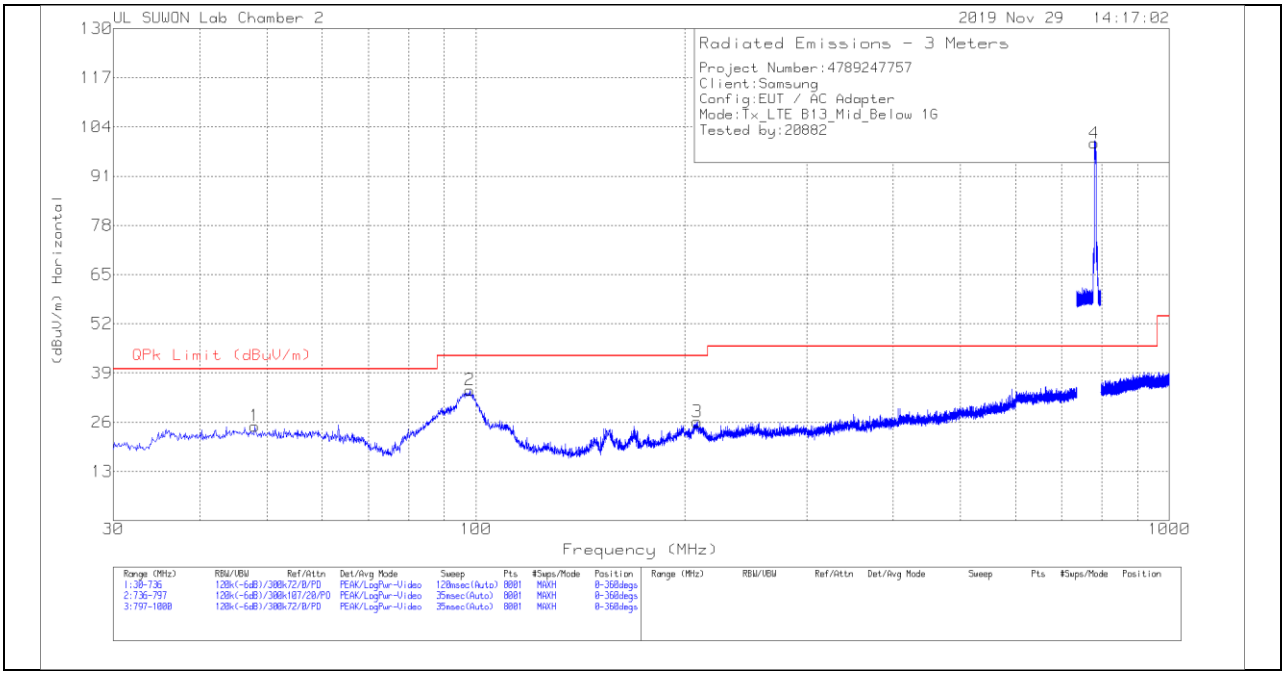
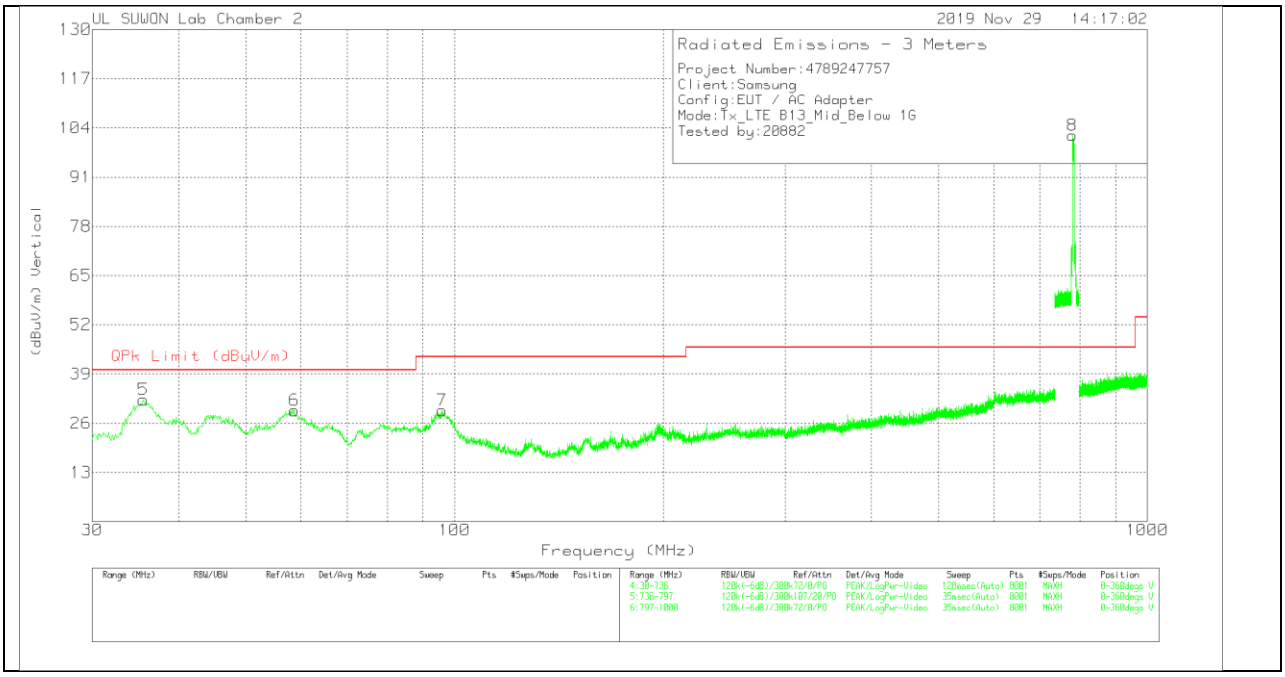
**MID CHANNEL(751.0MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**DATA**

Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[ dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48.003 | 4.4 | Pk | 19.8 | .8 | 25 | 40 | -15 | 0-360 | 100 | H |
| 2 | 97.9525 | 15.77 | Pk | 17.6 | 1.1 | 34.47 | 43.52 | -9.05 | 0-360 | 300 | H |
| 3 | 208.5298 | 7.51 | Pk | 17 | 1.6 | 26.11 | 43.52 | -17.41 | 0-360 | 100 | H |
| 4 | 780.347 | 69.79 | Pk | 26.7 | 3.2 | 99.69 | **46.02** | **53.67** | 0-360 | 100 | H |
| 5 | 35.5598 | 14.57 | Pk | 16.9 | .7 | 32.17 | 40 | -7.83 | 0-360 | 100 | V |
| 6 | 58.7695 | 9.76 | Pk | 18.7 | .9 | 29.36 | 40 | -10.64 | 0-360 | 100 | V |
| 7 | 96.011 | 10.86 | Pk | 17.4 | 1.1 | 29.36 | 43.52 | -14.16 | 0-360 | 100 | V |
| 8 | 779.9963 | 72.25 | Pk | 26.7 | 3.1 | 102.05 | **46.02** | **56.03** | 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.


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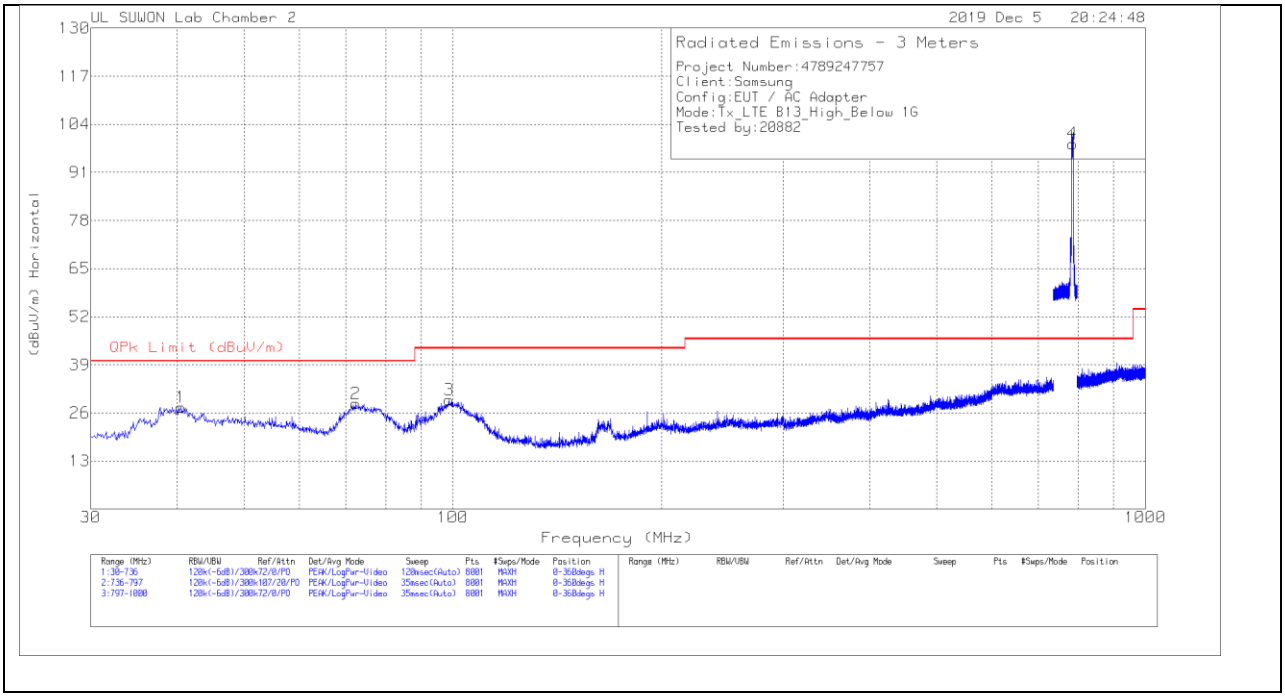
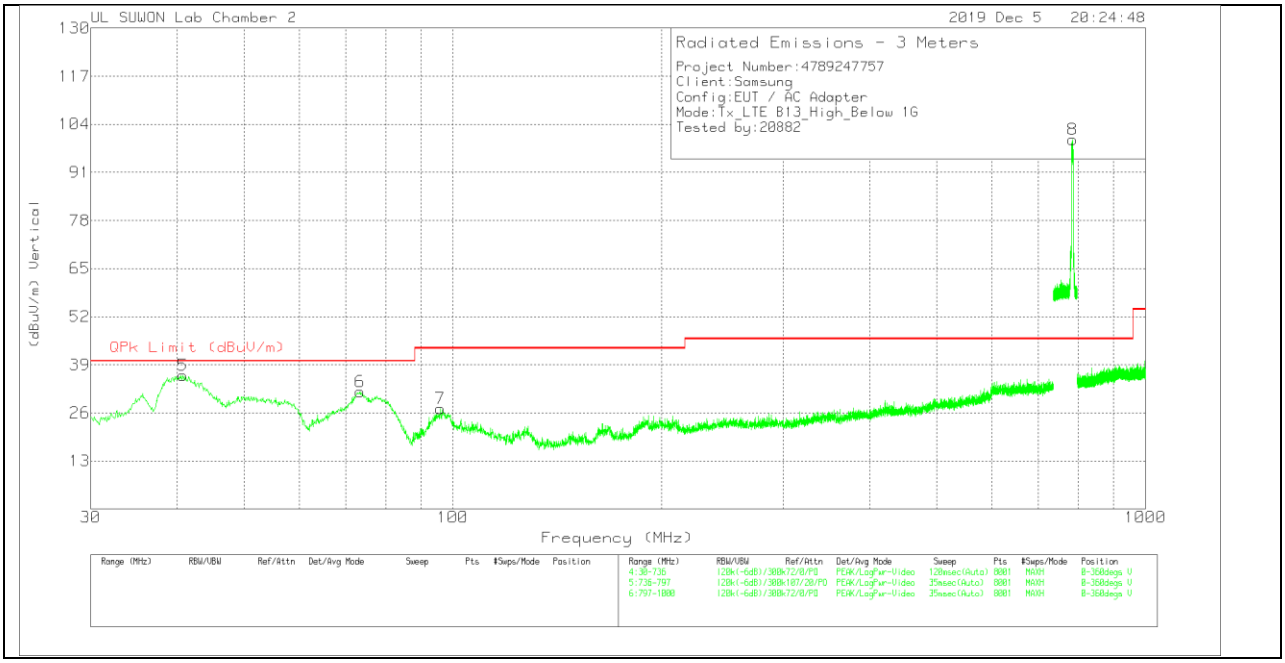
**HIGH CHANNEL(753.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 40.5018 | 7.85 | Pk | 18.9 | .7 | 27.45 | 40 | -12.55 | 0-360 | 300 | H |
| 2 | 72.4483 | 12.95 | Pk | 14.6 | 1 | 28.55 | 40 | -11.45 | 0-360 | 300 | H |
| 3 | 98.7468 | 10.71 | Pk | 17.7 | 1.1 | 29.51 | 43.52 | -14.01 | 0-360 | 100 | H |
| 4 | 784.7009 | 68.88 | Pk | 26.7 | 3.2 | 98.78 | **46.02** | **52.76** | 0-360 | 100 | H |
| 5 | 40.7665 | 16.59 | Pk | 18.9 | .7 | 36.19 | 40 | -3.81 | 0-360 | 100 | V |
| 6 | 73.419 | 16.64 | Pk | 14.1 | 1 | 31.74 | 40 | -8.26 | 0-360 | 100 | V |
| 7 | 96.011 | 8.75 | Pk | 17.4 | 1.1 | 27.25 | 43.52 | -16.27 | 0-360 | 100 | V |
| 8 | 785.9971 | 69.93 | Pk | 26.7 | 3.2 | 99.83 | **46.02** | **53.81** | 0-360 | 100 | V |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 40.7665 | 14.02 | Qp | 18.9 | .7 | 33.62 | 40 | -6.38 | 235 | 101 | V |

Qp - Quasi-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.


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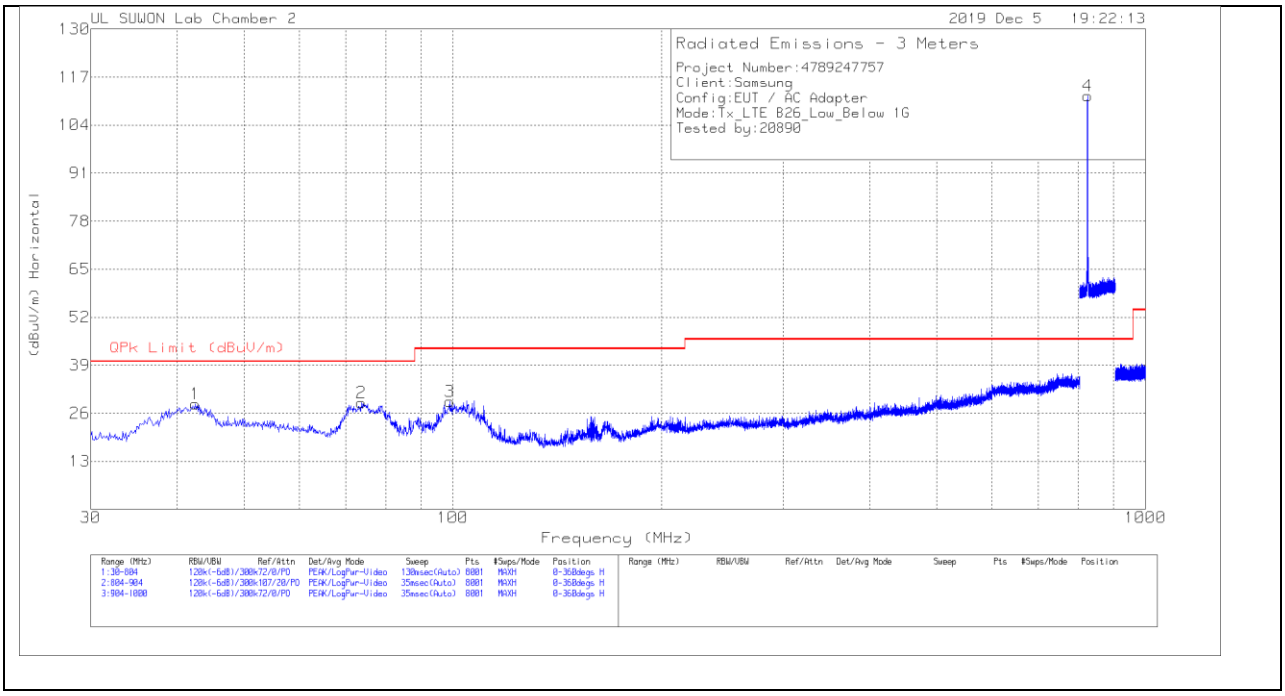
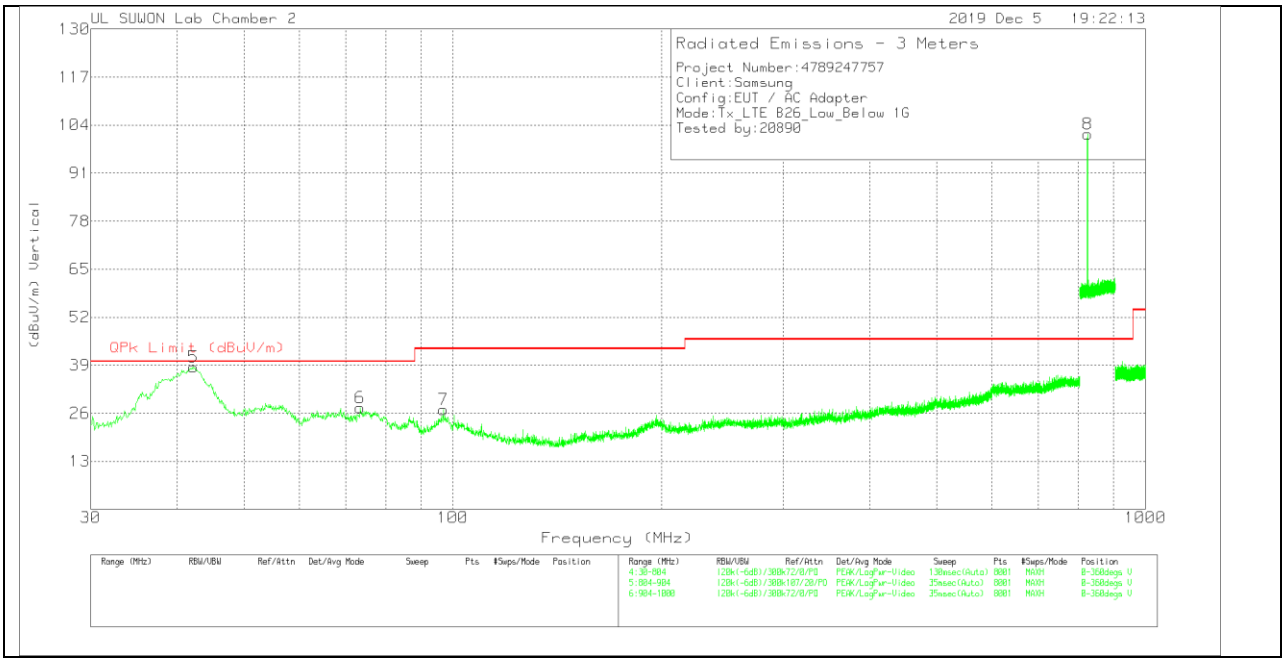
## 7.10. Below 1 GHz in the LTE Band 26

**LOW CHANNEL(860.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**DATA**

## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass [dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42.4808 | 8.59 | Pk | 19.3 | .7 | 28.59 | 40 | -11.41 | 0-360 | 400 | H |
| 2 | 73.731 | 13.81 | Pk | 14 | 1 | 28.81 | 40 | -11.19 | 0-360 | 300 | H |
| 3 | 98.886 | 10.35 | Pk | 17.7 | 1.1 | 29.15 | 43.52 | -14.37 | 0-360 | 300 | H |
| 4 | 824.675 | 81.84 | Pk | 26.9 | 3.2 | 111.94 | **46.02** | **65.92** | 0-360 | 100 | H |
| 5 | 42.1905 | 18.6 | Pk | 19.2 | .7 | 38.5 | 40 | -1.5 | 0-360 | 100 | V |
| 6 | 73.5375 | 12.45 | Pk | 14.1 | 1 | 27.55 | 40 | -12.45 | 0-360 | 400 | V |
| 7 | 96.8543 | 8.51 | Pk | 17.4 | 1.1 | 27.01 | 43.52 | -16.51 | 0-360 | 100 | V |
| 8 | 825.0625 | 71.48 | Pk | 26.9 | 3.2 | 101.58 | **46.02** | **55.56** | 0-360 | 200 | V |

Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 42.1905 | 11.03 | Qp | 19.2 | .7 | 30.93 | 40 | -9.07 | 227 | 100 | V |

Qp - Quasi-Peak detector

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


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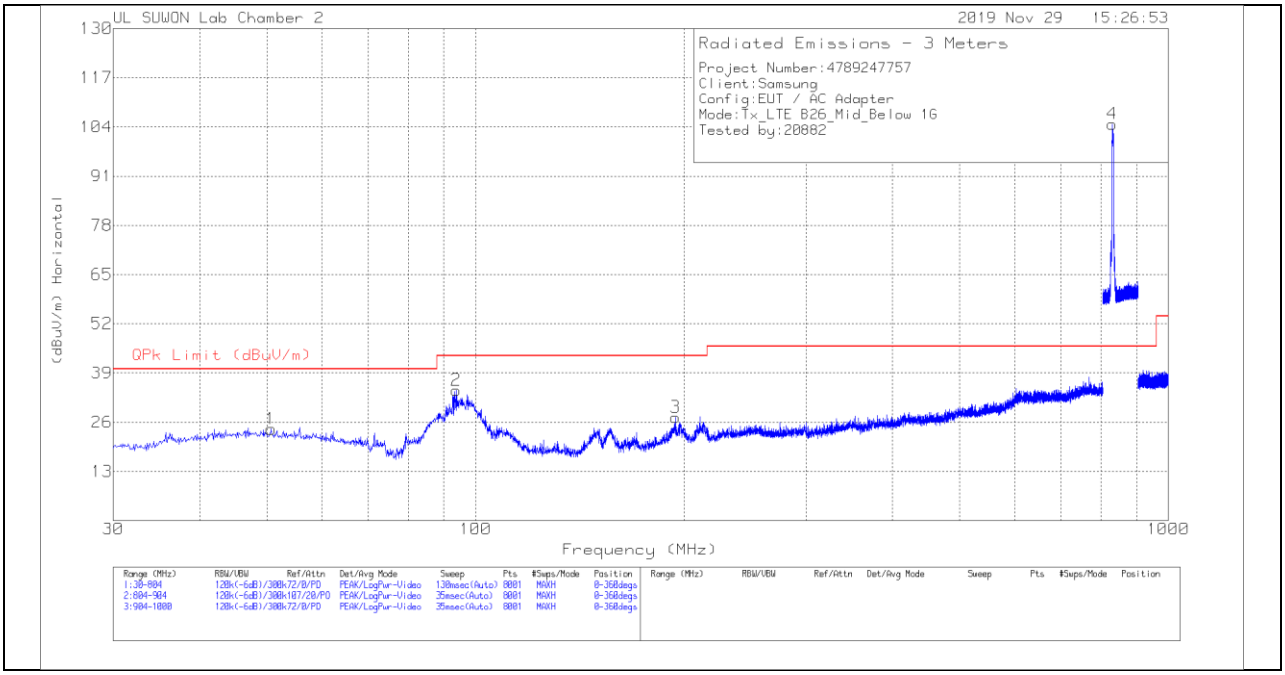
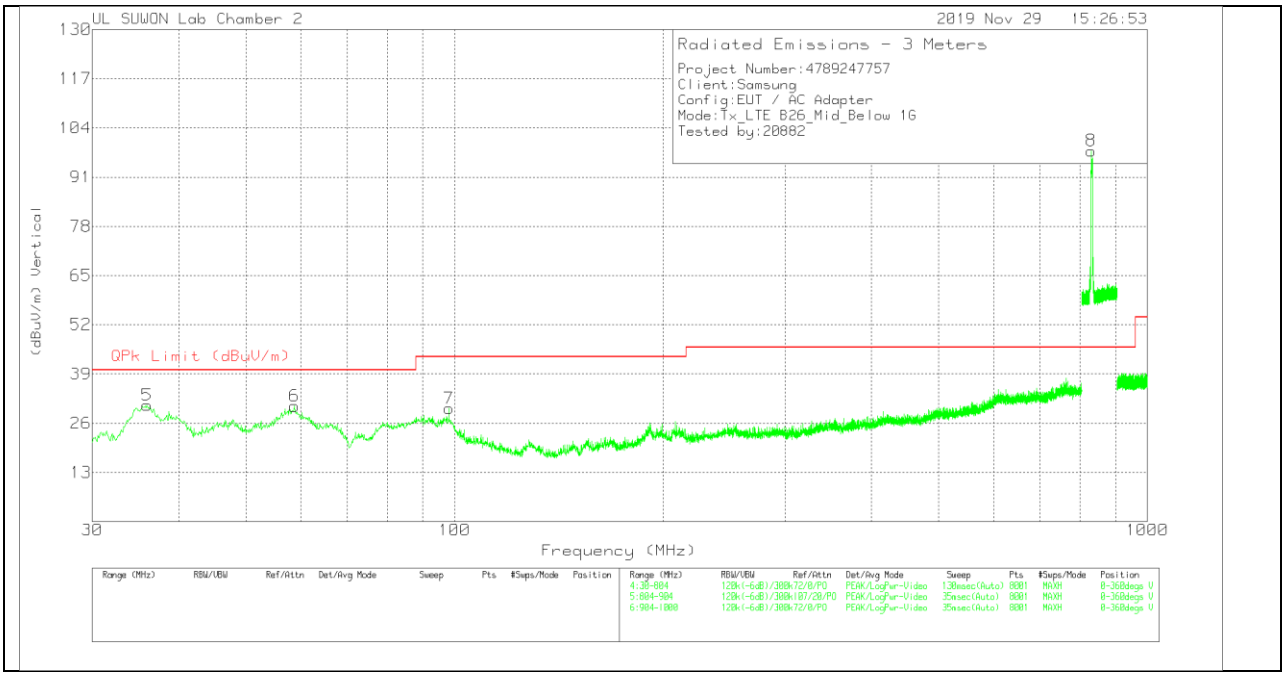
**MID CHANNEL(876.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**DATA**

Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_749 | Below_1G_Bypass[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50.7045 | 3.69 | Pk | 19.7 | .8 | 24.19 | 40 | -15.81 | 0-360 | 300 | H |
| 2 | 93.7583 | 16.46 | Pk | 16.9 | 1.1 | 34.46 | 43.52 | -9.06 | 0-360 | 200 | H |
| 3 | 194.5718 | 7.8 | Pk | 17.9 | 1.6 | 27.3 | 43.52 | -16.22 | 0-360 | 100 | H |
| 4 | 829.6125 | 74.4 | Pk | 27.1 | 3.3 | 104.8 | **46.02** | **58.78** | 0-360 | 100 | H |
| 5 | 35.9985 | 12.93 | Pk | 17.1 | .7 | 30.73 | 40 | -9.27 | 0-360 | 100 | V |
| 6 | 58.7348 | 10.91 | Pk | 18.7 | .9 | 30.51 | 40 | -9.49 | 0-360 | 100 | V |
| 7 | 98.2088 | 11.21 | Pk | 17.6 | 1.1 | 29.91 | 43.52 | -13.61 | 0-360 | 100 | V |
| 8 | 830.125 | 67.56 | Pk | 27.1 | 3.3 | 97.96 | **46.02** | **51.94** | 0-360 | 200 | V |

Pk - Peak detector

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


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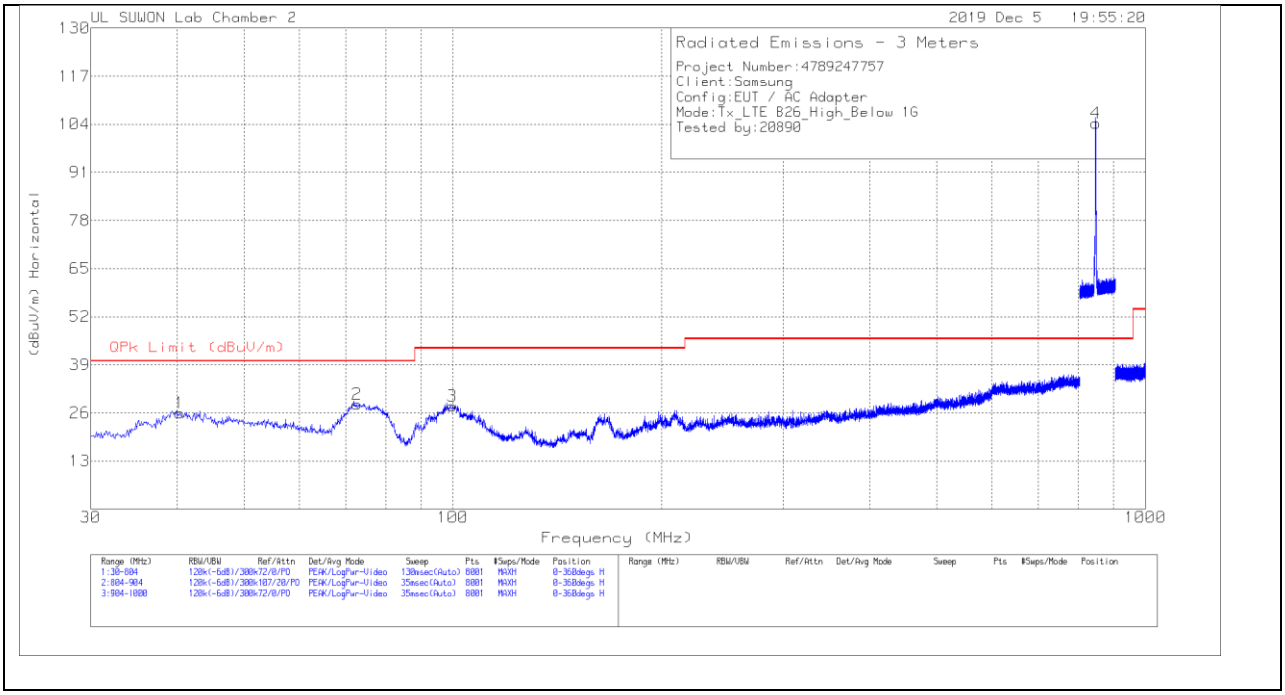
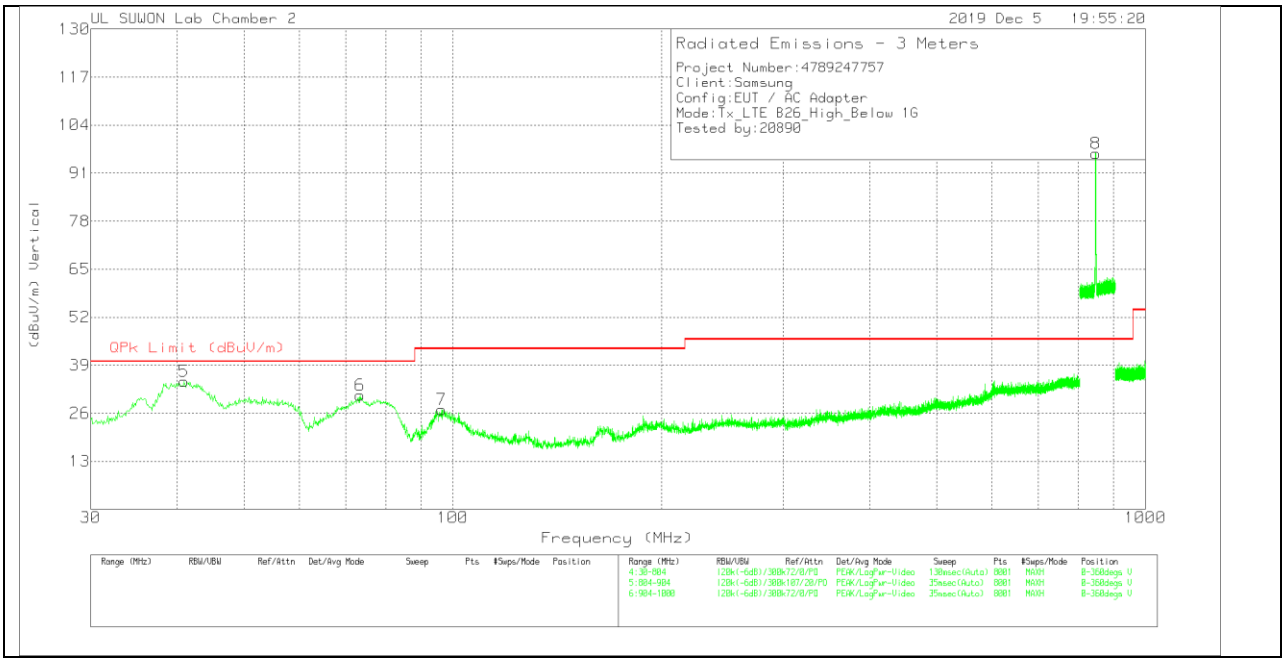
**HIGH CHANNEL(892.5MHz)**

**HORIZONTAL PEAK PLOT**




**VERTICAL PEAK PLOT**





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**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 | 40.3523 | 6.56 | Pk | 18.8 | .7 | 26.06 | 40 | -13.94 | 0-360 | 400 | H |
| 2 | 72.6668 | 12.81 | Pk | 14.5 | 1 | 28.31 | 40 | -11.69 | 0-360 | 300 | H |
| 3 | 99.8535 | 9.07 | Pk | 17.7 | 1.1 | 27.87 | 43.52 | -15.65 | 0-360 | 300 | H |
| 4 | 847.4125 | 73.61 | Pk | 27.3 | 3.3 | 104.21 | **46.02** | **58.19** | 0-360 | 100 | H |
| 5 | 40.9328 | 14.93 | Pk | 19 | .7 | 34.63 | 40 | -5.37 | 0-360 | 100 | V |
| 6 | 73.5375 | 15.82 | Pk | 14.1 | 1 | 30.92 | 40 | -9.08 | 0-360 | 400 | V |
| 7 | 96.2738 | 8.58 | Pk | 17.4 | 1.1 | 27.08 | 43.52 | -16.44 | 0-360 | 100 | V |
| 8 | 848.2 | 65.58 | Pk | 27.4 | 3.3 | 96.28 | **46.02** | **50.26** | 0-360 | 200 | V |

Pk - Peak detector

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

# END OF REPORT


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