# TEST REPORT

FCC Test for SM-F741U

**APPLICANT**
SAMSUNG Electronics Co., Ltd.

**REPORT NO.**
HCT-EM-2404-FC002

**DATE OF ISSUE**
April 26, 2024

**Tested by**
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**Technical Manager**
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HCT CO., LTD.
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# TEST REPORT

FCC Certification

**REPORT NO.**
HCT-EM-2404-FC002

**DATE OF ISSUE**
April 26, 2024

**FCC ID.**
A3LSMF741U

| | |
|---|---|
| Applicant | **SAMSUNG Electronics Co., Ltd.**<br>129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,<br>16677, Korea |
| Product Name<br>Model Name<br>Series Model Name | Mobile Phone<br>SM-F741U<br>SM-F741U1 |
| Date of Test | 04.18.2024 – 04.24.2024 |
| Location of Test | ☒ Permanent Testing Lab ☐ On Site Testing Lab<br>(Address: See clause 1.2) |
| Test Standard Used | FCC CFR 47 PART 15 Subpart B Class B<br>ANSI C63.4-2014 |
| Test Results | Refer to the present document |
| Manufacturer | SAMSUNG Electronics Co., Ltd. |



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## REVISION HISTORY

The revision history for this test report is shown in table.

| Revision No. | Date of Issue | Description |
|---|---|---|
| 0 | April 26, 2024 | Initial Release |

## Notice

| Content |
|---|
| The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.<br>The test results have only been applied with the test methods required by the standard(s).<br>The laboratory is not accredited for the test results marked *.<br>Information provided by the applicant is marked **.<br>Test results provided by external providers are marked ***.<br><br>When confirmation of authenticity of this test report is required, please contact www.hct.co.kr<br><br>The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA). |



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# 1. TESTING LABORATORY

## 1.1 General Information

| | |
|---|---|
| Organization Name | HCT Co., Ltd. |
| Address | 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383. Rep. of Korea |
| Telephone | +82 31 645 6300 |
| FAX | +82 31 645 6401 |

## 1.2 Location of the Test Site

The test site is located at the following address.;

| | |
|---|---|
| Address | 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383. Rep. of Korea |
| Telephone | 031-645-6300 |
| FAX | 031-645-6401 |



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# 2. GENERAL INFORMATION

## 2.1 Description of EUT

| | |
|---|---|
| **FCC ID** | A3LSMF741U |
| **Product Name** | Mobile Phone |
| **Model Name** | SM-F741U |
| **Series Model Name** | SM-F741U1 |
| **Operating Frequency Band** | GSM 850/900/1800/1900,<br>WCDMA FDD 1/2/4/5/8,<br>LTE FDD 1/2/3/4/5/7/8/12/13/14/18/19/20/25/26/28/29/30/66/71 TDD 38/39/40/41/48,<br>5G FR1 n1/2/3/5/7/8/12/20/25/26/28/29/30/38/41/48/66/70/71/77/78,<br>5G FR2 n257/258/260/261,<br>BT BDR/EDR/LE, WLAN a/b/g/n/ac/ax, GNSS, NFC, WPT |
| **Testing Frequency Band** | GSM 850/1900, WCDMA B2/4/5,<br>LTE B2/4/5/7/12/13/14/25/26/29/30/38/41/48/66/71<br>5G NR n2/5/7/12/25/26/30/38/41/48/66/70/71/77/78/258/260/261<br>BT BDR/EDR/LE, WLAN a/b/g/n/ac/ax, GNSS, NFC, WPT |
| **Manufacturer** | SAMSUNG Electronics Co., Ltd. |

## 2.2 Power Source

During the test, the following power supply levels are utilized/provided.;
Power supply: AC 120 V, 60 Hz



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## 2.3 Tested System Details

All equipment descriptions used in the tested system (including inserted cards) are:

| Device Type | Model Name | Serial Number | Manufacturer |
|---|---|---|---|
| Mobile Phone | SM-F741U | - | SAMSUNG Electronics Co., Ltd. |
| Travel Adapter a) | EP-TA800 | - | DONGYANG E&P |
| Data Cable | EP-DN980 | - | RFTECH |
| Earphone | EO-IC100 | - | CRESYN |

a) Input: 100~240 V, 50~60 Hz, 0.7 A / Output: (PDO)5.0 V, 3.0 A or 9.0 V, 2.77 A (PPS)3.3~5.9 V, 3.0 A or 3.3~11.0 V, 2.25 A

## 2.4 Cable Description

| Product Name | Port | Power Cord Shielded (Y/N) | I/O Cable Shielded (Y/N) | Length (m) |
|---|---|---|---|---|
| EUT | USB Type C (Data Cable) | Y | N/A | (P) 1.0 |
| | USB Type C (Earphone) | N/A | N | (D) 1.3 |

"(D)" data cable and "(P)" power cable.

## 2.5 Noise Suppression Parts on Cable (I/O Cable)

| Product Name | Port | Ferrite Bead (Y/N) | Location | Metal Hood (Y/N) | Location |
|---|---|---|---|---|---|
| EUT | Data Cable (USB Type C) | N | N/A | Y | Both End |
| | Earphone (USB Type C) | N | N/A | Y | EUT End |



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## 2.6 Test Facility

The measurement facilities are constructed in conformance with the requirements of ANSI C63.4-2014.
The Normalized site attenuations (30 MHz to 1 GHz) and Site validation (1 GHz to 18 GHz) were performed in accordance with the standard in ANSI C63.4-2014 and ANSI C63.4a-2017
Our laboratories are accredited and designated in accordance with the provisions of Radio Waves ACT and International Standard ISO/IEC 17025:2017. (National Radio Research Agency, CABID No. KR0032)

## 2.7 Calibration of Measuring Instrument

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturers recommendations for utilizing calibration equipment, which is traceable to recognized national standards.
Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5:2017.

## 2.8 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k$ = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the $U_{CISPR}$ measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

| Parameter | Test Site | Expanded Uncertainty | |
|---|---|---|---|
| Radiated Emission | 3 m Semi Anechoic Chamber #1 | 30 MHz to 1 GHz: | 5.8 dB |
| | | 1 GHz to 18 GHz: | 4.8 dB |
| | | 18 GHz to 40 GHz: | 5.8 dB |



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# 3. DESCRIPTION OF TESTING

## 3.1 Measurement of Conducted Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 7.3

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN).
If the EUT is connected to the PC through USB, the AC power-line adapter of the PC is directly connected to a line impedance stabilization network (LISN).
Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both conducted lines are measured in Quasi-Peak and Average mode, including the worst-case data points for each tested configuration.

c. The frequency range from 150 ㎑ to 30 ㎒ was searched.

**Conducted Emission Limits**

| Frequency (㎒) | Resolution Bandwidth (㎑) | Class A | | Class B | |
|---|---|---|---|---|---|
| | | Quasi-Peak (dBμV) | Average (dBμV) | Quasi-Peak (dBμV) | Average (dBμV) |
| 0.15 to 0.5 | 9 | 79 | 66 | 66 to 56* | 56 to 46* |
| 0.5 to 5 | 9 | 73 | 60 | 56 | 46 |
| 5 to 30 | 9 | 73 | 60 | 60 | 50 |

NOTE. Decreases with the logarithm of the frequency.



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## 3.2 Measurement of Radiated Emission

The test procedure was in accordance with ANSI C63.4-2014, Clause 8.3

a. The EUT was placed on the top of a turn table 0.8 meters above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from 1 m to 4 m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 m to 4 m and the turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to Peak and Average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
g. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. (1 GHz to 40 GHz)

**Radiated Emission Limits**

| Frequency (MHz) | Class A | | | Class B | | |
|---|---|---|---|---|---|---|
| | Antenna Distance (m) | Field Strength (μV/m) | Quasi-Peak (dBμV/m) | Antenna Distance (m) | Field Strength (μV/m) | Quasi-Peak (dBμV/m) |
| 30 to 88 | 10 | 90 | 39.0 | 3 | 100 | 40.0 |
| 88 to 216 | 10 | 150 | 43.5 | 3 | 150 | 43.5 |
| 216 to 960 | 10 | 210 | 46.4 | 3 | 200 | 46.0 |
| Above 960 | 10 | 300 | 49.5 | 3 | 500 | 54.0 |

| Frequency (MHz) | Antenna Distance (m) | Class A | | Class B | |
|---|---|---|---|---|---|
| | | Peak (dBμV/m) | Average (dBμV/m) | Peak (dBμV/m) | Average (dBμV/m) |
| Above 1 000 | 3 | 80 | 60 | 74 | 54 |



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**Frequency Range of Radiated Measurements**

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table

| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz) |
|---|---|
| Below 1.705 | 30 |
| 1.705 to 108 | 1 000 |
| 108 to 500 | 2 000 |
| 500 to 1 000 | 5 000 |
| Above 1 000 | 5th harmonic of the highest frequency or 40 GHz, whichever is lower |



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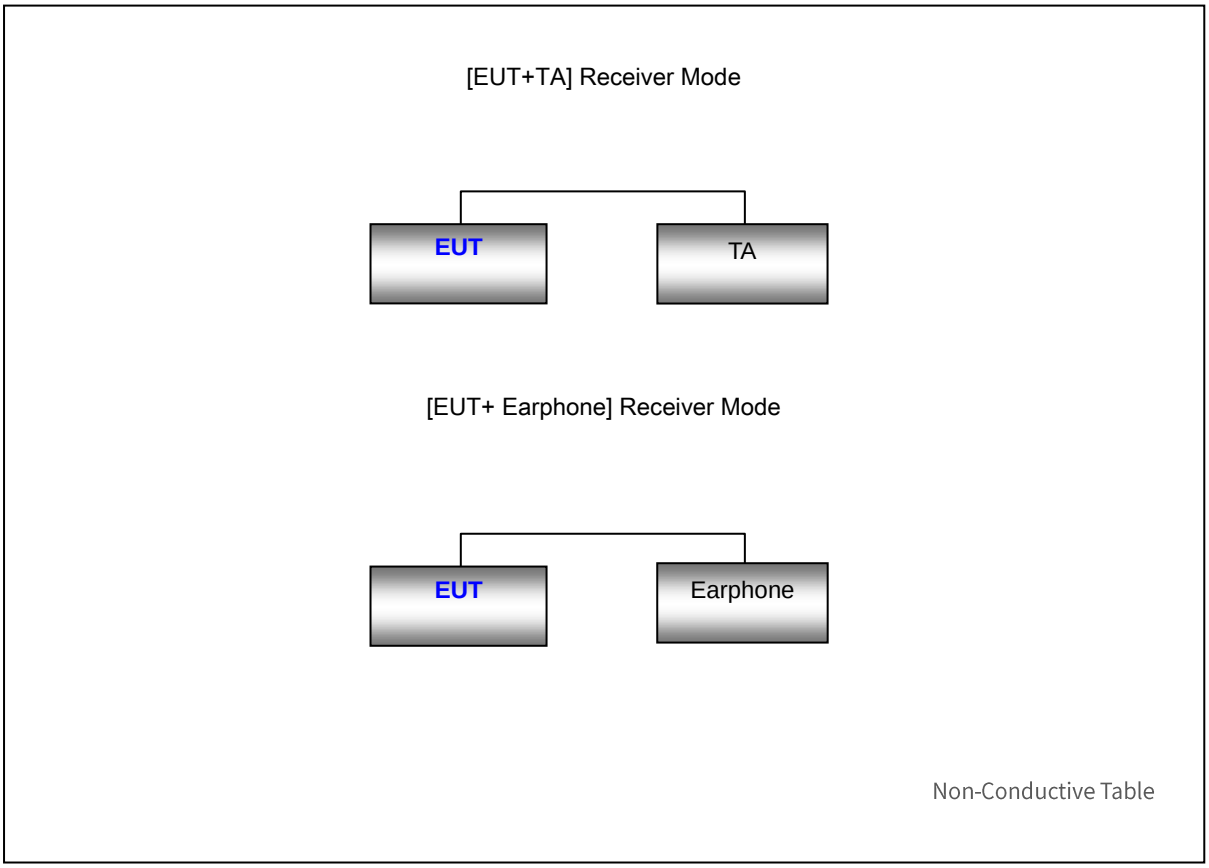
## 3.3 Configuration of Tested System

The EUT was configured in the following manner.

At the request of the manufacturer, the configuration of the tests was arranged.



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# 4. OPERATION OF THE EUT

During preliminary tests, the following operating mode was investigated.

Receiver mode(GSM 850 Low/Middle/High ch Idle)
Receiver mode(WCDMA B5 Low/Middle/High ch Idle)
Receiver mode(LTE B5_Low/Middle/High ch)
Receiver mode(LTE B12_Low/Middle/High ch)
Receiver mode(LTE B13_Low/Middle/High ch)
Receiver mode(LTE B14_Low/Middle/High ch)
Receiver mode(LTE B26_Low/Middle/High ch)
Receiver mode(LTE B29_Low/Middle/High ch)
Receiver mode(LTE B71_Low/Middle/High ch)
Receiver mode(5G NR n5_Low/Middle/High ch)
Receiver mode(5G NR n12_Low/Middle/High ch)
Receiver mode(5G NR n26_Low/Middle/High ch)
Receiver mode(5G NR n71_Low/Middle/High ch)

**NOTE.** The worst case is tested.

## 4.1 Conducted Emission (Not Applicable)

**Operating Mode: Not applicable**

NOTE. Conducted emission for receiver mode is covered by JBP report.

## 4.2 Radiated Emission

It was final tested the following operating mode, after connecting all peripheral devices.

**Operating Mode:**

**Radiated Emission below 1 GHz**

| | |
|---|---|
| [EUT+TA] EUT Unfolded | LTE B5+5G NR n5 Low ch Idle |
| | LTE B5+5G NR n5 Middle ch Idle |
| | LTE B5+5G NR n5 High ch Idle* |
| | LTE B12+B13+5G NR n12 Low ch Idle* |



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| | |
|---|---|
| | LTE B12+B13+5G NR n12 Middle ch Idle |
| | LTE B12+B13+5G NR n12 High ch Idle |
| | LTE B14 Low ch Idle |
| | LTE B14 Middle ch Idle* |
| | LTE B14 High ch Idle |
| | LTE B26+5G NR n26 Low ch Idle |
| | LTE B26+5G NR n26 Middle ch Idle |
| | LTE B26+5G NR n26 High ch Idle* |
| | LTE B29 Low ch Idle* |
| | LTE B29 Middle ch Idle |
| | LTE B29 High ch Idle |
| | LTE B71+5G NR n71 Low ch Idle* |
| | LTE B71+5G NR n71 Middle ch Idle |
| | LTE B71+5G NR n71 High ch Idle |
| [EUT+TA] EUT Folded | LTE B5+5G NR n5 High ch Idle* |
| [EUT+ Earphone] | LTE B5+5G NR n5 High ch Idle* |

**Radiated Emission above 1 GHz**

| | |
|---|---|
| [EUT+TA] EUT Unfolded | LTE B5+5G NR n5 High ch Idle* |
| | LTE B12+B13+5G NR n12 Low ch Idle |
| | LTE B14 Middle ch Idle |
| | LTE B26+5G NR n26 High ch Idle |
| | LTE B29 Low ch Idle |
| | LTE B71+5G NR n71 Low ch Idle |
| [EUT+TA] EUT Folded | LTE B5+5G NR n5 High ch Idle* |
| [EUT+ Earphone] | LTE B5+5G NR n5 High ch Idle* |

NOTE.

1. Three orientations have been investigated and the worst-case orientation (x-axis: The display of EUT placed on the table is facing upwards) is reported.
2. Frequency bands adjacent to each other are tested as one mode.
3. The worst case of operating mode is reported. [*].



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## 5. MEASURING INSTRUMENT

| | Type | Model Name | Manufacturer | Serial Number | Calibration Cycle | Next Calibration Date |
|---|---|---|---|---|---|---|
| Conducted emission | | | | | | |
| ☐ | EMI Test Receiver | ESR7 | Rohde & Schwarz | 101910 | 1 year | 05.26.2024 |
| ☐ | LISN | ENV216 | Rohde & Schwarz | 102245 | 1 year | 08.02.2024 |
| ☐ | Software | EMC32 | Rohde & Schwarz | - | - | - |
| Radiated emission below 1 ㎓ | | | | | | |
| ☒ | EMI Test Receiver | ESU40 | Rohde & Schwarz | 100524 | 1 year | 05.09.2024 |
| ☒ | Bi-Log Antenna | VULB9168 | Schwarzbeck | 255 | 2 year | 03.10.2025 |
| ☒ | Antenna master | MA4640-XP-ET | INNCO SYSTEM | - | N/A | - |
| ☒ | Antenna master controller | CO3000 | INNCO SYSTEM | CO3000/870/ 35990515/L | N/A | - |
| ☒ | Turn Table | 1060 | INNCO SYSTEM | - | N/A | - |
| ☒ | Turn Table controller | CO2000 | INNCO SYSTEM | CO2000/095/ 7590304/L | N/A | - |
| ☒ | Universal radio communication tester | CMU200 | Rohde & Schwarz | 107488 | 1 year | 09.22.2024 |
| ☒ | Mobile communication test set | CMW500 | Rohde & Schwarz | 103246 | 1 year | 08.28.2024 |
| ☒ | Radio communication analyzer | MT8821C | ANRITSU | 6262192376 | 1 year | 10.17.2024 |
| ☒ | Antenna (for Communication) | HyperLOG7060 | Aaronia | 66450 | - | - |
| ☒ | Radio communication analyzer | MT8000A | ANRITSU | 6262208294 | 1 year | 10.17.2024 |
| ☒ | Antenna (for Communication) | HyperLOG7060 | Aaronia | 66451 | - | - |
| ☒ | Software | EMC32 | Rohde & Schwarz | - | - | - |



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| | Type | Model Name | Manufacturer | Serial Number | Calibration Cycle | Next Calibration Date |
|---|---|---|---|---|---|---|
| Radiated emission above 1 GHz | | | | | | |
| ☒ | EMI Test Receiver | ESU40 | Rohde & Schwarz | 100524 | 1 year | 05.09.2024 |
| ☒ | Antenna master | MA4640-XP-ET | INNCO SYSTEM | - | N/A | - |
| ☒ | Antenna master controller | CO3000 | INNCO SYSTEM | CO3000/870/ 35990515/L | N/A | - |
| ☒ | Turn Table | 1060 | INNCO SYSTEM | - | N/A | - |
| ☒ | Turn Table controller | CO2000 | INNCO SYSTEM | CO2000/095/ 7590304/L | N/A | - |
| ☒ | Low Noise Amplifier | TK-PA18H | TESTEK | 170034-L | 1 year | 11.01.2024 |
| ☒ | Low Noise Amplifier | TK-PA1840H | TESTEK | 170030-L | 1 year | 02.20.2025 |
| ☒ | Horn Antenna | HF907 | Rohde & Schwarz | 103160 | 1 year | 10.16.2024 |
| ☒ | Horn Antenna | BBHA 9170 | Schwarzbeck | BBHA9170 #786 | 1 year | 11.01.2024 |
| ☒ | Radio communication analyzer | MT8821C | ANRITSU | 6262192376 | 1 year | 10.17.2024 |
| ☒ | Mobile communication test set | CMW500 | Rohde & Schwarz | 103246 | 1 year | 08.28.2024 |
| ☒ | Universal radio communication tester | CMU200 | Rohde & Schwarz | 107488 | 1 year | 09.22.2024 |
| ☒ | Antenna (for Communication) | HyperLOG7060 | Aaronia | 66450 | - | - |
| ☒ | Radio communication analyzer | MT8000A | ANRITSU | 6262208294 | 1 year | 10.17.2024 |
| ☒ | Antenna (for Communication) | HyperLOG7060 | Aaronia | 66451 | - | - |
| ☒ | Software | EMC32 | Rohde & Schwarz | - | - | - |



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# 6. EMISSION TEST SUMMARY

## 6.1 Conducted Emission

### 6.1.1 Operating Condition

The test results of conducted emission at mains ports provide the following information:

| | |
|---|---|
| **Test Standard Used** | FCC CFR 47 PART 15 Subpart B Class B<br>ANSI C63.4-2014 |
| **Frequency Range** | 150 ㎑ to 30 ㎒ |
| **Detector** | Quasi-Peak, CISPR-Average |
| **Bandwidth** | 9 ㎑ (6 dB) |
| **Operating Mode** | Not applicable |
| **Test Site** | EMI Shield Room |
| **Temperature** | min. - °C / max. - °C |
| **Relative Humidity** | min. - % / max. - % |
| **Test Date** | - |

A conducted emission is calculated by the following equation.;

Calculation Formula: QuasiPeak or CAverage= Receiver Reading + Corr.
Corr. = LISN Factor + Cable Loss
Margin = Limit – QuasiPeak or CAverage
L1 = Live, N = Neutral

※ Two graphs measurement for both Live(L1) and Neutral(N) of the LISN are combined into one graph.

### 6.1.2 Measuring Data

Not applicable



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## 6.2 Radiated Emission Below 1 GHz

### 6.2.1 Operating Condition

The test results of radiated emission provide the following information:

| | |
|---|---|
| **Used Test Standard** | FCC CFR 47 PART 15 Subpart B Class B<br>ANSI C63.4-2014 |
| **Frequency Range** | 30 MHz to 1 000 MHz |
| **Detector** | Quasi-Peak |
| **Bandwidth** | 120 kHz (6 dB) |
| **Antenna Height** | 1 m to 4 m |
| **Operating Mode** | **[EUT+TA] EUT Unfolded**<br>LTE B5+5G NR n5 High ch Idle<br>LTE B12+B13+5G NR n12 Low ch Idle<br>LTE B14 Middle ch Idle<br>LTE B26+5G NR n26 High ch Idle<br>LTE B29 Low ch Idle<br>LTE B71+5G NR n71 Low ch Idle<br>**[EUT+TA] EUT Folded**<br>LTE B5+5G NR n5 High ch Idle<br>**[EUT+Earphone]**<br>LTE B5+5G NR n5 High ch Idle |
| **Test Site** | 3 m Semi Anechoic Chamber #1 |
| **Temperature** | min. 21.8 °C, max. 25.2 °C |
| **Relative Humidity** | min. 34.2 %, max. 37.8 % |
| **Test Date** | 04.18.2024 - 04.23.2024 |

A field strength is calculated by the following equation.;

Calculation Formula:
QuasiPeak = Reading (Receiver Reading) + Corr.
Corr. (Correction Factor) = Antenna Factor + Cable Loss
Margin = Limit - QuasiPeak
Polarity H = Horizontal, Polarity V = Vertical



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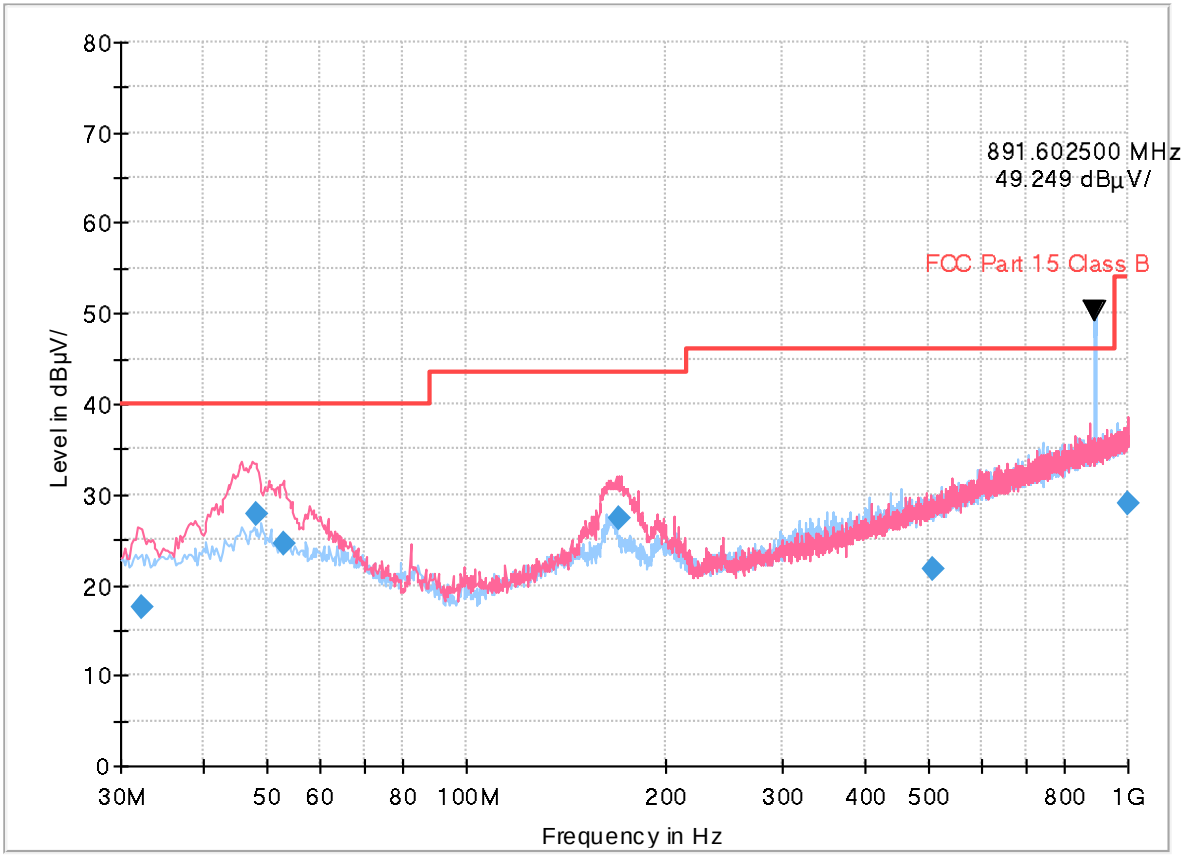
### 6.2.2 Measuring Data

**[EUT+TA] EUT Unfolded**

LTE B5+5G NR n5 High ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 32.1902 | 17.46 | 40.00 | 22.54 | 125.3 | V | 153.0 | 18.9 |
| 47.9836 | 27.82 | 40.00 | 12.18 | 100.0 | V | 98.0 | 20.2 |
| 52.7846 | 24.65 | 40.00 | 15.35 | 125.3 | V | 1.0 | 20.2 |
| 169.7248 | 27.47 | 43.50 | 16.03 | 100.0 | V | 189.0 | 19.1 |
| 506.0617 | 21.70 | 46.00 | 24.30 | 100.0 | H | 31.0 | 25.5 |
| 996.8887 | 28.98 | 54.00 | 25.02 | 274.7 | V | 248.0 | 32.7 |

NOTE. 1. Carrier Frequency: Rx 891.6025 ㎒

2. These are signals for fundamental frequency from the base station



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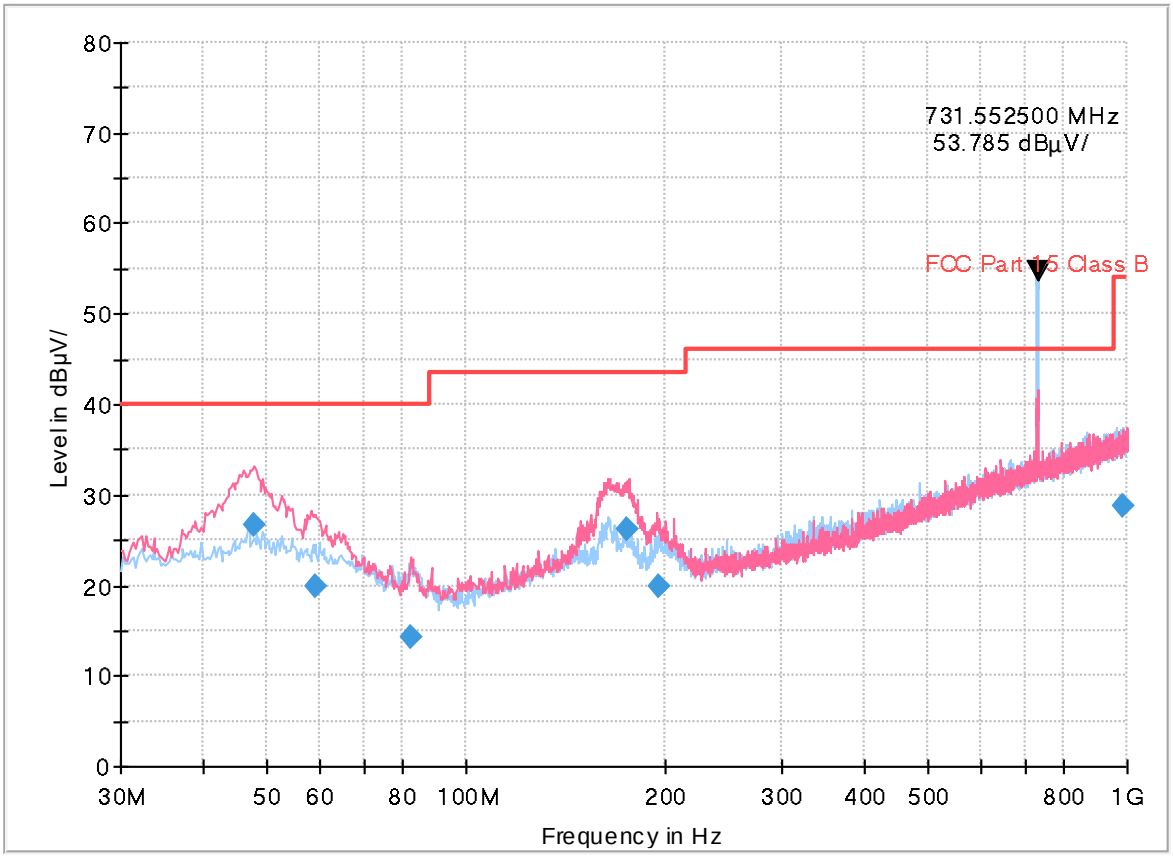
LTE B12+B13+5G NR n12 Low ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 47.7447 | 26.72 | 40.00 | 13.28 | 100.0 | V | 0.0 | 20.2 |
| 59.0537 | 19.80 | 40.00 | 20.20 | 107.9 | V | 288.0 | 19.7 |
| 82.3562 | 14.19 | 40.00 | 25.81 | 183.7 | V | 260.0 | 15.4 |
| 174.5291 | 26.29 | 43.50 | 17.21 | 100.0 | V | 57.0 | 18.7 |
| 196.1430 | 19.90 | 43.50 | 23.60 | 100.0 | V | 109.0 | 17.4 |
| 985.9751 | 28.82 | 54.00 | 25.18 | 324.0 | H | 15.0 | 32.5 |

NOTE. 1. Carrier Frequency: Rx 731.5525 ㎒

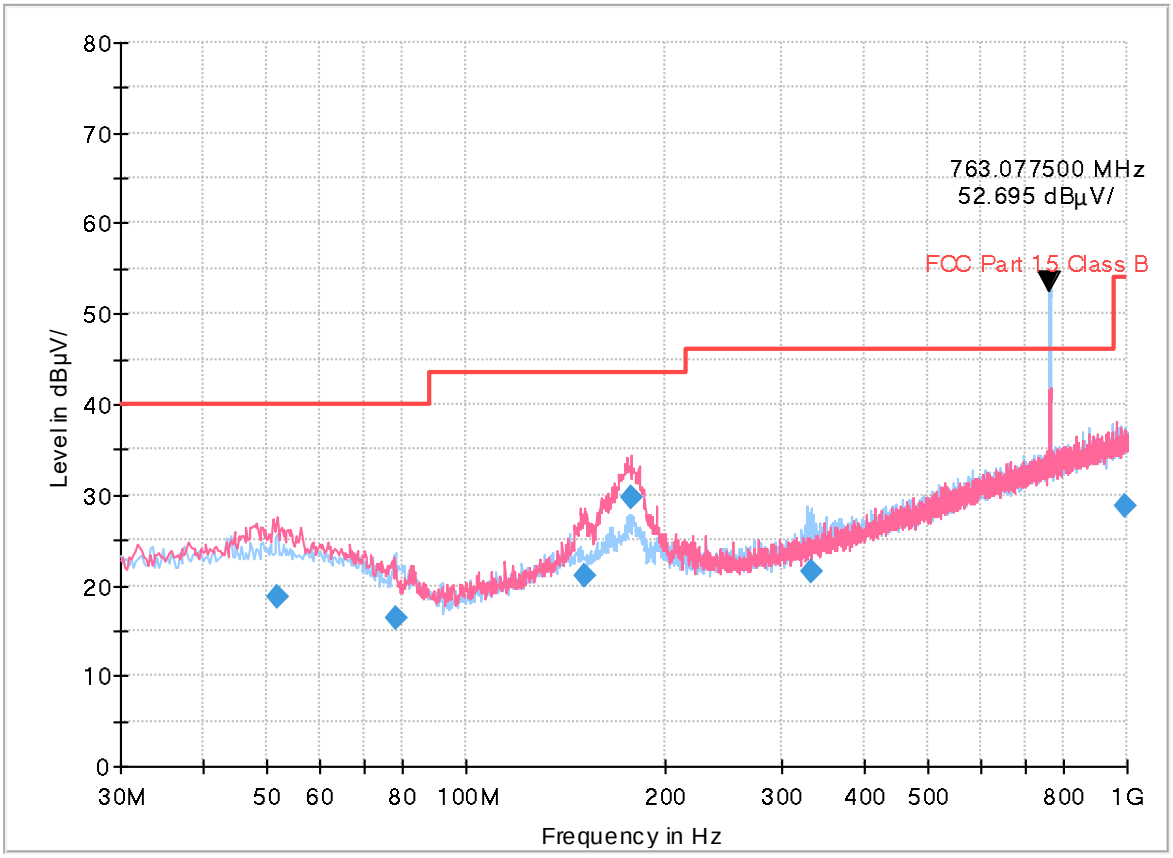
2. These are signals for fundamental frequency from the base station



The report shall not be (partly) reproduced except in full without approval of the laboratory.

LTE B14 Middle ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 51.8274 | 18.81 | 40.00 | 21.19 | 100.0 | V | 15.0 | 20.3 |
| 78.2225 | 16.39 | 40.00 | 23.61 | 274.8 | H | 216.0 | 16.1 |
| 150.9852 | 21.06 | 43.50 | 22.44 | 100.0 | V | 99.0 | 19.7 |
| 177.6579 | 29.79 | 43.50 | 13.71 | 100.0 | V | 162.0 | 18.5 |
| 332.3939 | 21.54 | 46.00 | 24.46 | 100.0 | H | 45.0 | 21.4 |
| 995.4389 | 28.89 | 54.00 | 25.11 | 274.7 | H | 88.0 | 32.6 |

NOTE. 1. Carrier Frequency: Rx 763.0775 ㎒

2. These are signals for fundamental frequency from the base station



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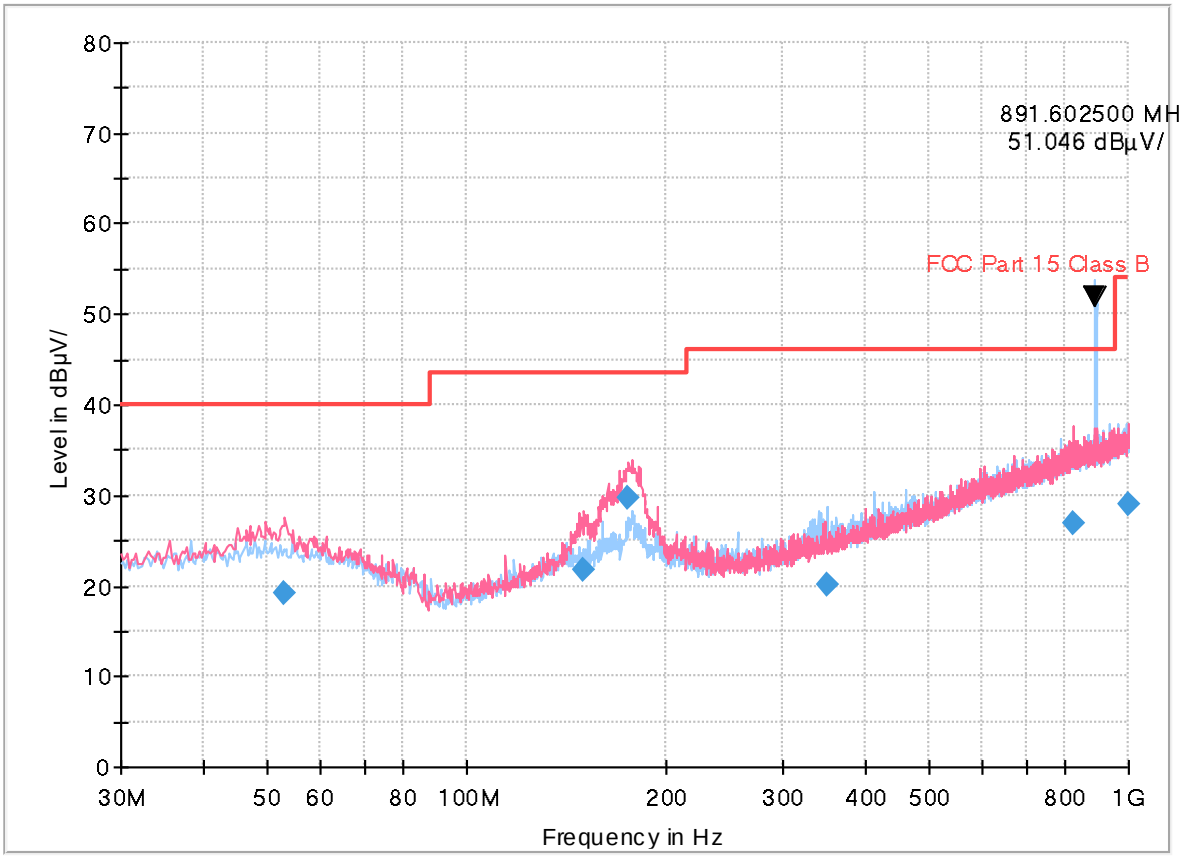
LTE B26+5G NR n26 High ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 53.0444 | 19.16 | 40.00 | 20.84 | 100.0 | V | 214.0 | 20.2 |
| 149.8133 | 21.86 | 43.50 | 21.64 | 100.0 | V | 118.0 | 19.7 |
| 175.6978 | 29.62 | 43.50 | 13.88 | 100.0 | V | 178.0 | 18.6 |
| 349.8387 | 20.17 | 46.00 | 25.83 | 100.0 | H | 33.0 | 21.8 |
| 824.1553 | 26.90 | 46.00 | 19.10 | 283.7 | V | 45.0 | 30.7 |
| 999.9816 | 29.02 | 54.00 | 24.98 | 125.0 | V | 255.0 | 32.7 |

NOTE. 1. Carrier Frequency: Rx 891.6025 ㎒

2. These are signals for fundamental frequency from the base station



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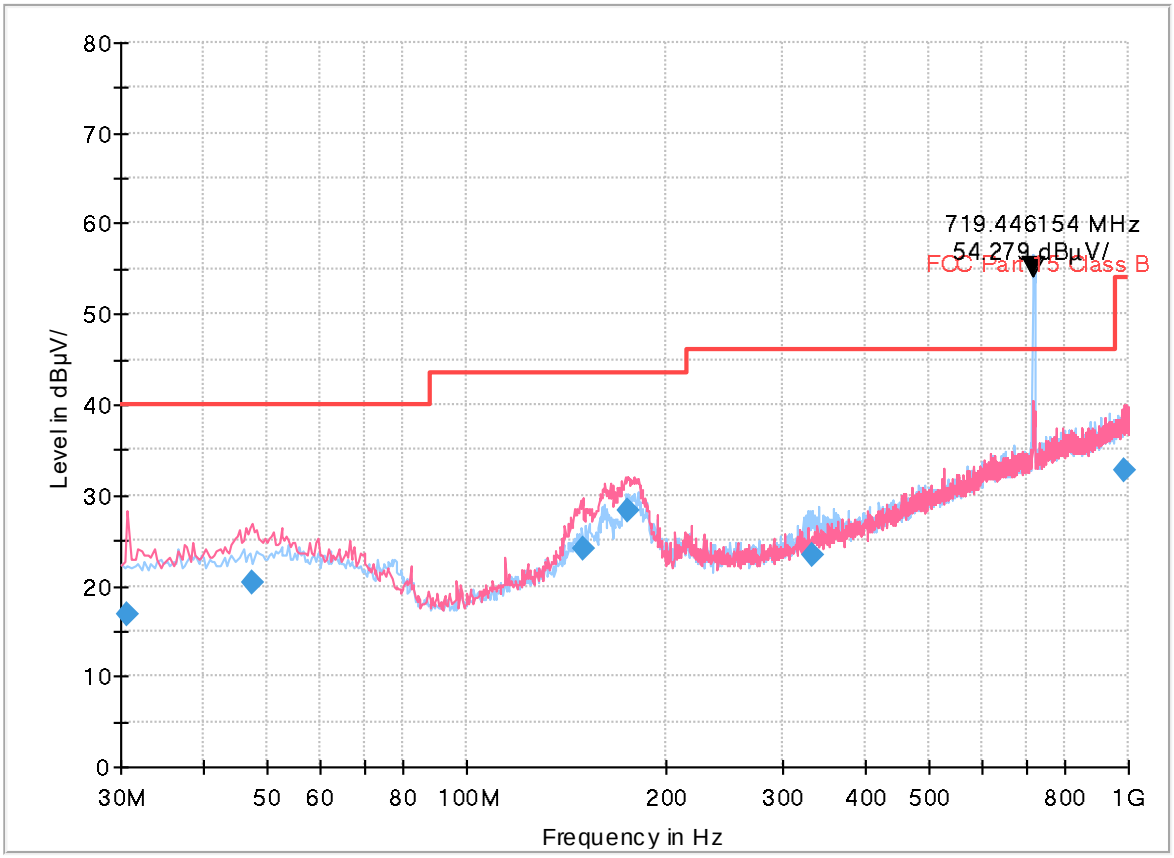
LTE B29 Low ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 30.7061 | 16.78 | 40.00 | 23.22 | 100.0 | V | 0.0 | 18.7 |
| 47.5030 | 20.34 | 40.00 | 19.66 | 100.0 | V | 7.0 | 20.2 |
| 149.7631 | 24.03 | 43.50 | 19.47 | 100.0 | V | 115.0 | 19.7 |
| 175.5499 | 28.28 | 43.50 | 15.22 | 100.0 | V | 188.0 | 18.6 |
| 332.9451 | 23.40 | 46.00 | 22.60 | 100.0 | H | 170.0 | 21.4 |
| 984.3785 | 32.78 | 54.00 | 21.22 | 325.1 | H | 77.0 | 32.5 |

NOTE. 1. Carrier Frequency: Rx 719.4461 ㎒

2. These are signals for fundamental frequency from the base station



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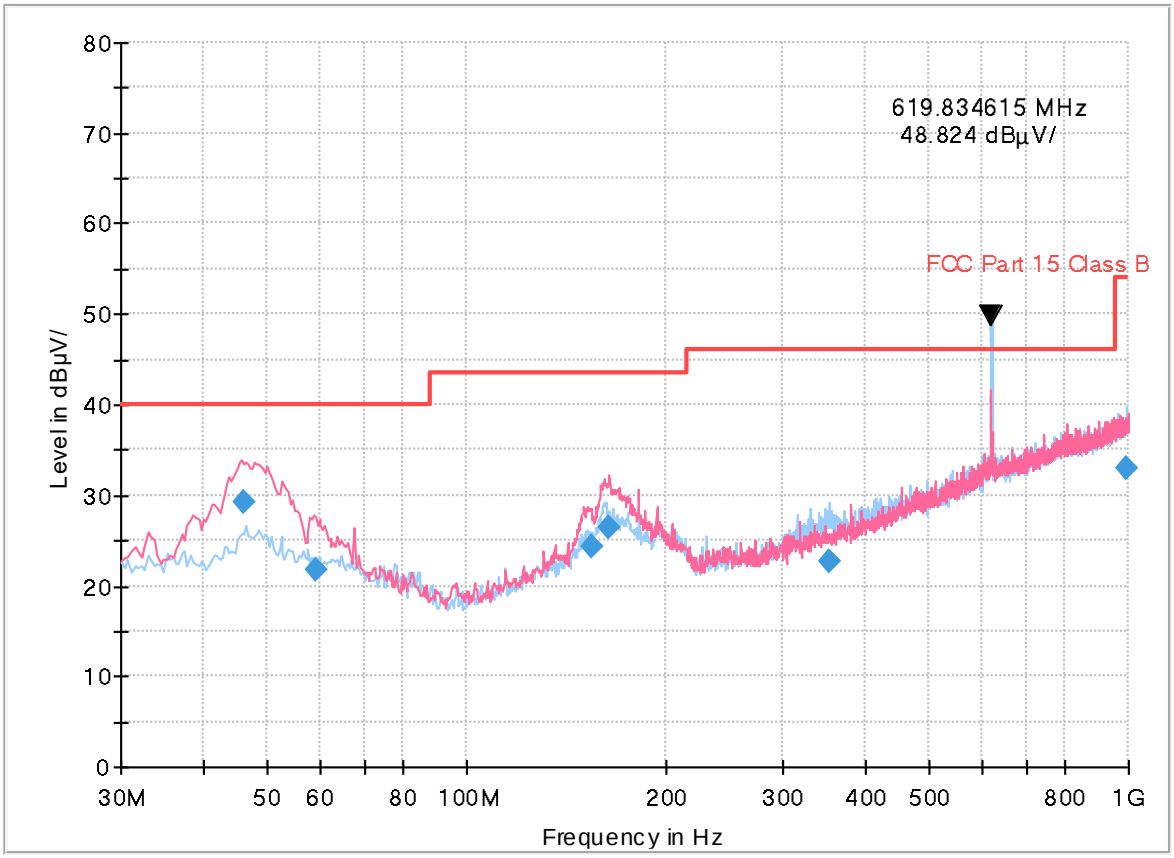
LTE B71+5G NR n71 Low ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 46.0292 | 29.19 | 40.00 | 10.81 | 100.0 | V | 144.0 | 20.1 |
| 59.1497 | 21.76 | 40.00 | 18.24 | 109.8 | V | 289.0 | 19.7 |
| 154.2031 | 24.25 | 43.50 | 19.25 | 100.1 | V | 130.0 | 19.8 |
| 164.3148 | 26.35 | 43.50 | 17.15 | 100.0 | V | 173.0 | 19.6 |
| 353.0471 | 22.73 | 46.00 | 23.27 | 100.0 | H | 76.0 | 21.9 |
| 996.2766 | 32.96 | 54.00 | 21.04 | 225.1 | H | 156.0 | 32.7 |

NOTE. 1. Carrier Frequency: Rx 619.8346 ㎒

2. These are signals for fundamental frequency from the base station



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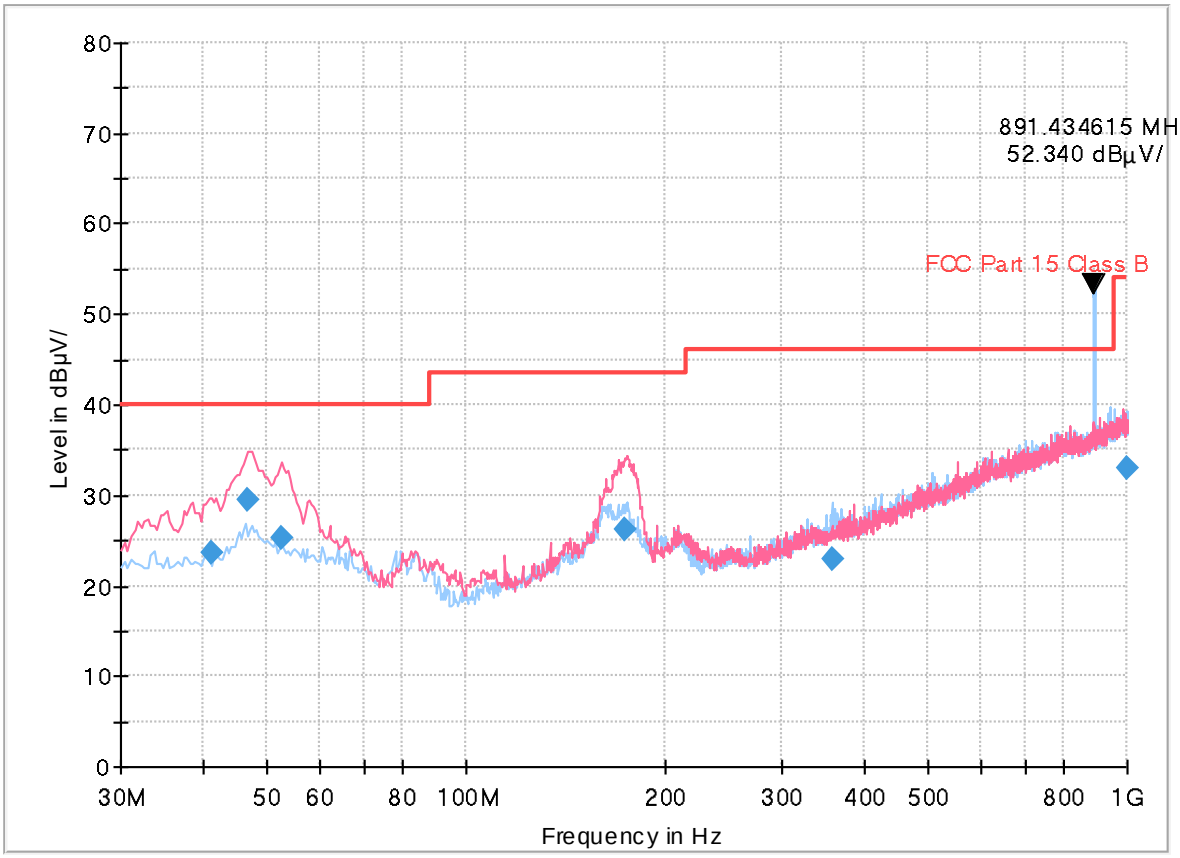
**[EUT+TA] EUT Folded**

LTE B5+5G NR n5 High ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 41.1845 | 23.63 | 40.00 | 16.37 | 106.7 | V | 173.0 | 19.7 |
| 46.8197 | 29.37 | 40.00 | 10.63 | 100.0 | V | 107.0 | 20.1 |
| 52.7197 | 25.33 | 40.00 | 14.67 | 110.8 | V | 77.0 | 20.2 |
| 173.3091 | 26.09 | 43.50 | 17.41 | 100.0 | V | 176.0 | 18.8 |
| 357.2058 | 22.85 | 46.00 | 23.15 | 100.0 | H | 77.0 | 22.0 |
| 998.8323 | 32.98 | 54.00 | 21.02 | 274.8 | H | 32.0 | 32.7 |

NOTE. 1. Carrier Frequency: Rx 891.4346 ㎒

2. These are signals for fundamental frequency from the base station



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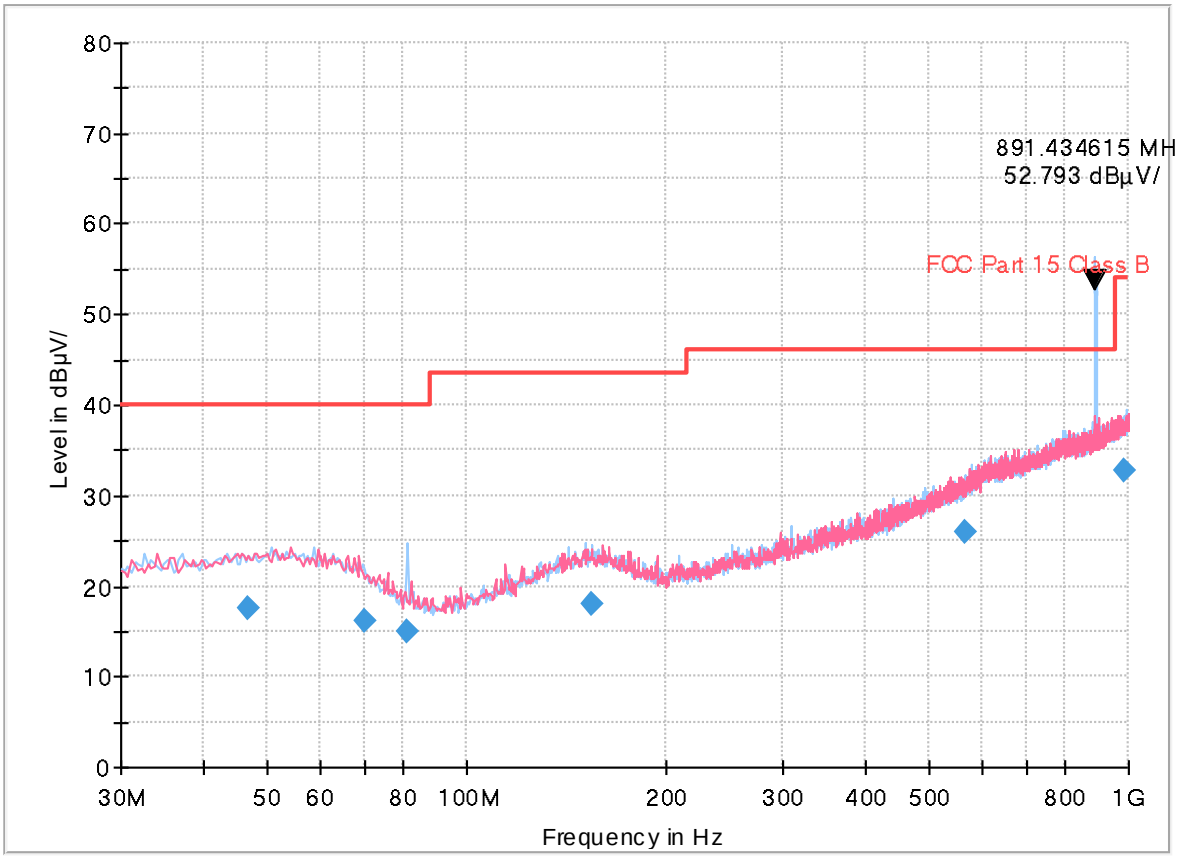
[EUT+Earphone]

LTE B5+5G NR n5 High ch Idle

Full Spectrum




| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 46.8009 | 17.47 | 40.00 | 22.53 | 325.0 | V | 201.0 | 20.1 |
| 69.9296 | 16.15 | 40.00 | 23.85 | 174.9 | H | 192.0 | 18.4 |
| 81.4902 | 14.87 | 40.00 | 25.13 | 221.8 | H | 0.0 | 15.4 |
| 154.2683 | 18.02 | 43.50 | 25.48 | 174.9 | H | 15.0 | 19.8 |
| 567.2491 | 26.02 | 46.00 | 19.98 | 174.9 | H | 134.0 | 26.8 |
| 982.8476 | 32.71 | 54.00 | 21.29 | 201.7 | H | 296.0 | 32.5 |

NOTE. 1. Carrier Frequency: Rx 891.4346 ㎒

2. These are signals for fundamental frequency from the base station



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## 6.3 Radiated Emission Above 1 GHz

### 6.3.1 Operating Condition

The test results of radiated emission provide the following information:

| | |
|---|---|
| **Used Test Standard** | FCC CFR 47 PART 15 Subpart B Class B<br>ANSI C63.4-2014 |
| **Detector** | Peak, CISPR-Average |
| **Bandwidth** | 1 MHz |
| **Highest Frequency** | n260 |
| **Tested Frequency Range** | 1 GHz to 40 GHz |
| **Antenna Height** | 1 m to 4 m |
| **Operating Mode** | **[EUT+TA] EUT Unfolded**<br>LTE B5+5G NR n5 High ch Idle<br>**[EUT+TA] EUT Folded**<br>LTE B5+5G NR n5 High ch Idle<br>**[EUT+Earphone]**<br>LTE B5+5G NR n5 High ch Idle |
| **Test Site** | 3 m Semi Anechoic Chamber #1 |
| **Temperature** | min. 22.2 °C, max. 25.2 °C |
| **Relative Humidity** | min. 34.2 %, max. 41.1 % |
| **Test Date** | 04.23.2024 – 04.24.2024 |

A field strength is calculated by the following equation.;

Calculation Formula: Peak or CAverage = Reading (Receiver Reading) + Corr.

Corr. (Correction Factor) = Antenna Factor+ Cable Loss – Amplifier gain

Margin = Limit - Peak or CAverage

Polarity H = Horizontal, Polarity V = Vertical



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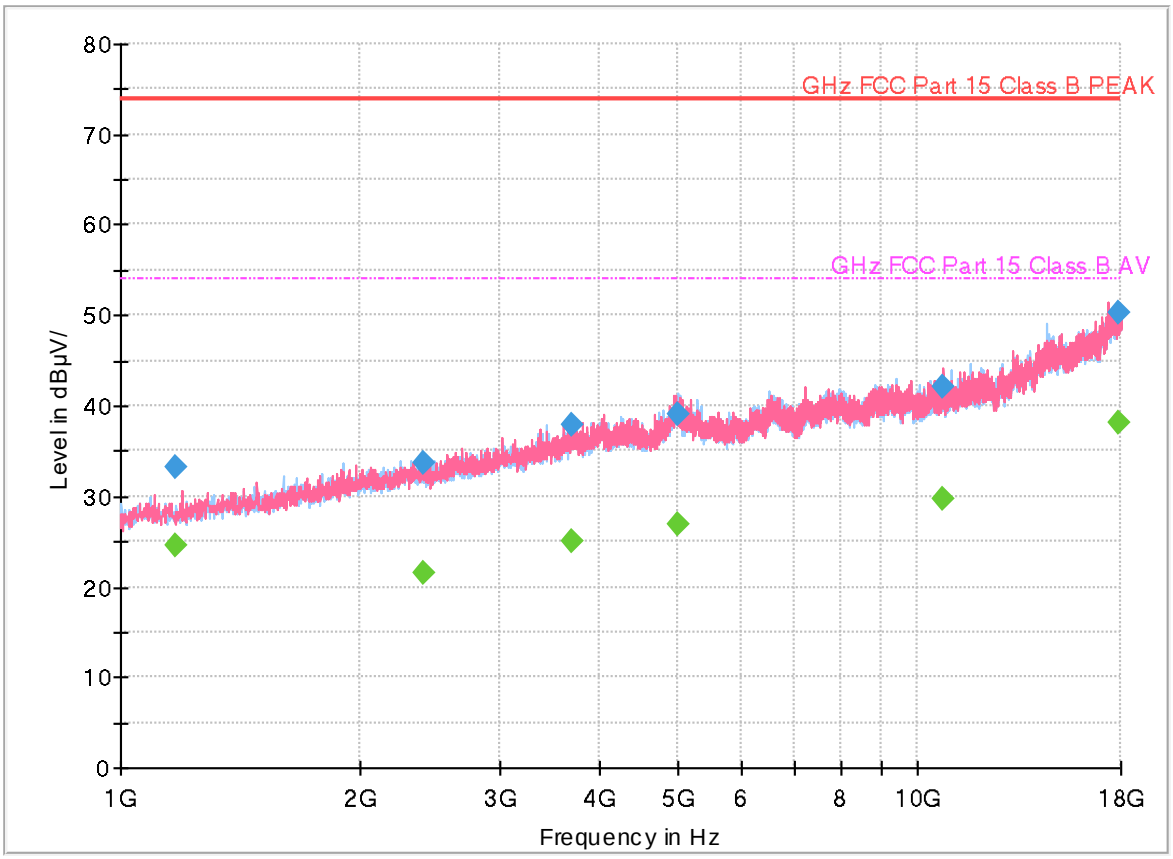
### 6.3.2 Measuring Data

**[EUT+TA / EUT Unfolded]** LTE B5+5G NR n5 High ch Idle

1 GHz to 18 GHz

Full Spectrum




| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1170.7200 | 33.28 | 74.00 | 40.72 | 222.9 | V | 82.0 | -30.7 |
| 2399.0800 | 33.64 | 74.00 | 40.36 | 225.0 | V | 220.0 | -24.3 |
| 3678.2550 | 37.84 | 74.00 | 36.16 | 195.8 | H | 37.0 | -18.9 |
| 5014.4500 | 39.08 | 74.00 | 34.92 | 274.8 | H | 309.0 | -14.9 |
| 10786.2750 | 42.22 | 74.00 | 31.78 | 109.9 | V | 339.0 | -7.1 |
| 17892.7800 | 50.27 | 74.00 | 23.73 | 186.0 | H | 222.0 | 5.9 |

| Frequency (MHz) | CAverage (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1170.7200 | 24.58 | 54.00 | 29.42 | 222.9 | V | 82.0 | -30.7 |
| 2399.0800 | 21.50 | 54.00 | 32.50 | 225.0 | V | 220.0 | -24.3 |
| 3678.2550 | 25.05 | 54.00 | 28.95 | 195.8 | H | 37.0 | -18.9 |
| 5014.4500 | 26.96 | 54.00 | 27.04 | 274.8 | H | 309.0 | -14.9 |
| 10786.2750 | 29.68 | 54.00 | 24.32 | 109.9 | V | 339.0 | -7.1 |
| 17892.7800 | 38.06 | 54.00 | 15.94 | 186.0 | H | 222.0 | 5.9 |



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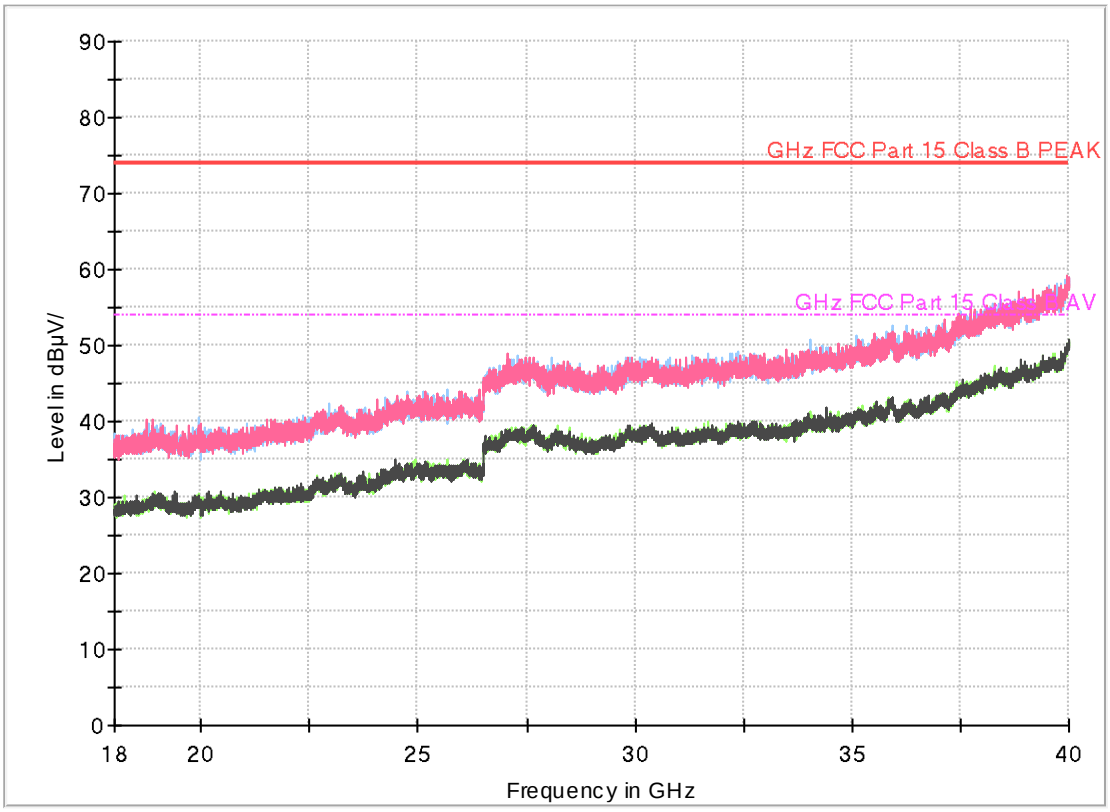
18 GHz to 40 GHz

Full Spectrum



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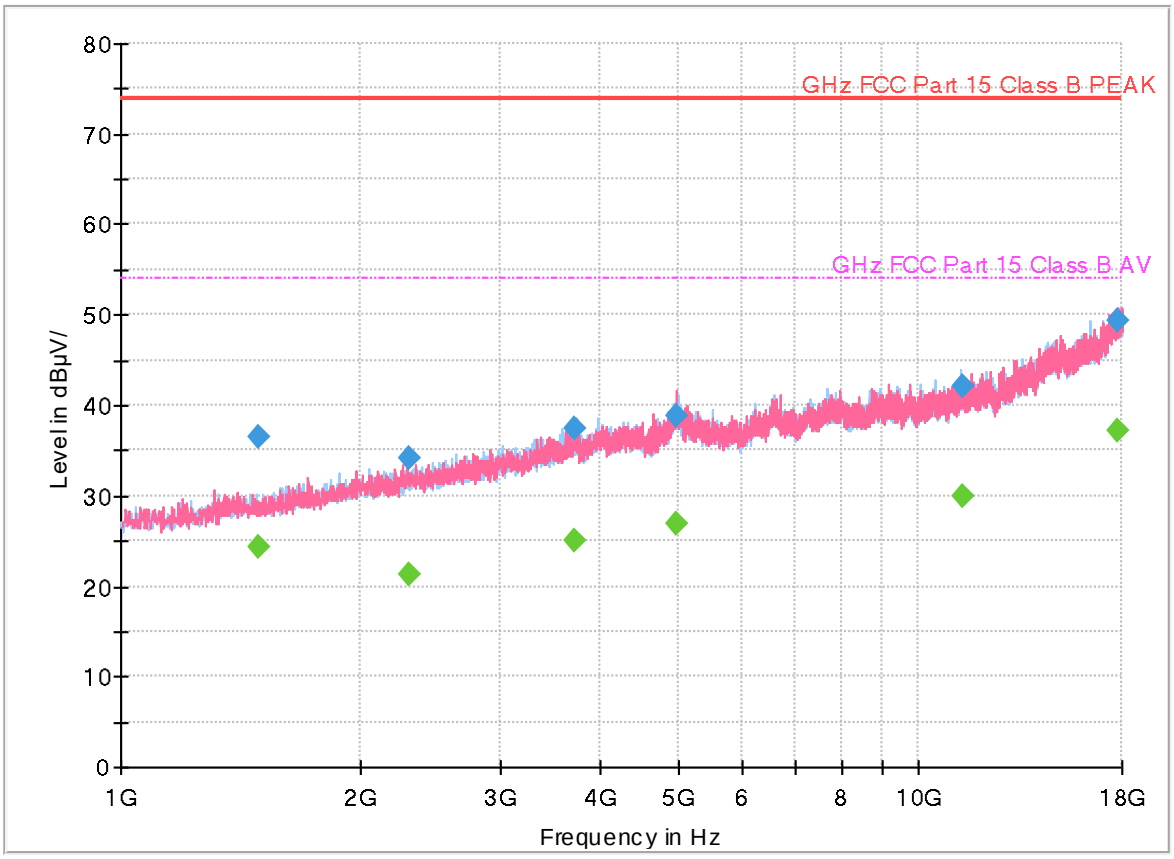
**[EUT+TA / EUT Folded]** LTE B5+5G NR n5 High ch Idle

1 GHz to 18 GHz

Full Spectrum




| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1491.0600 | 36.57 | 74.00 | 37.43 | 274.7 | H | 277.0 | -29.1 |
| 2297.5950 | 34.06 | 74.00 | 39.94 | 184.8 | H | 138.0 | -24.7 |
| 3717.4350 | 37.51 | 74.00 | 36.49 | 100.0 | V | 295.0 | -18.7 |
| 4970.9850 | 38.93 | 74.00 | 35.07 | 308.7 | V | 219.0 | -15.0 |
| 11355.1250 | 42.02 | 74.00 | 31.98 | 325.1 | V | 1.0 | -6.0 |
| 17775.5100 | 49.40 | 74.00 | 24.60 | 313.8 | V | 214.0 | 5.5 |

| Frequency (MHz) | CAverage (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1491.0600 | 24.35 | 54.00 | 29.65 | 274.7 | H | 277.0 | -29.1 |
| 2297.5950 | 21.26 | 54.00 | 32.74 | 184.8 | H | 138.0 | -24.7 |
| 3717.4350 | 24.96 | 54.00 | 29.04 | 100.0 | V | 295.0 | -18.7 |
| 4970.9850 | 26.93 | 54.00 | 27.07 | 308.7 | V | 219.0 | -15.0 |
| 11355.1250 | 29.92 | 54.00 | 24.08 | 325.1 | V | 1.0 | -6.0 |
| 17775.5100 | 37.13 | 54.00 | 16.87 | 313.8 | V | 214.0 | 5.5 |



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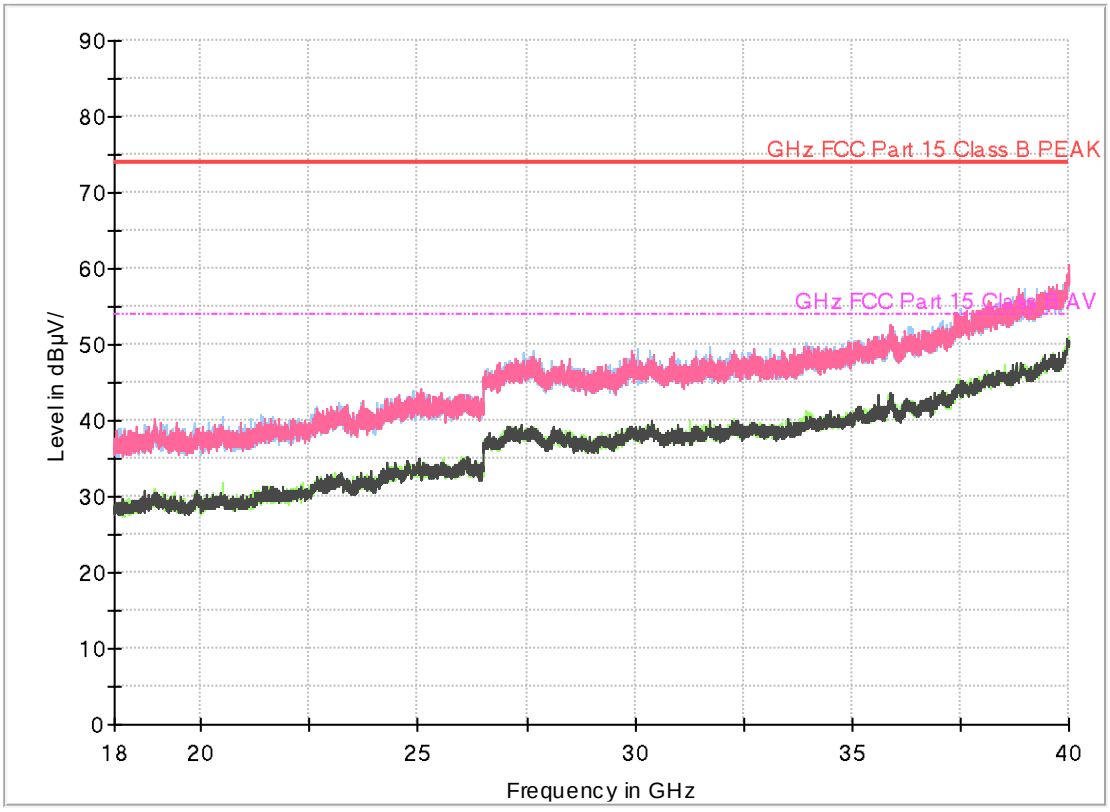
18 GHz to 40 GHz

Full Spectrum



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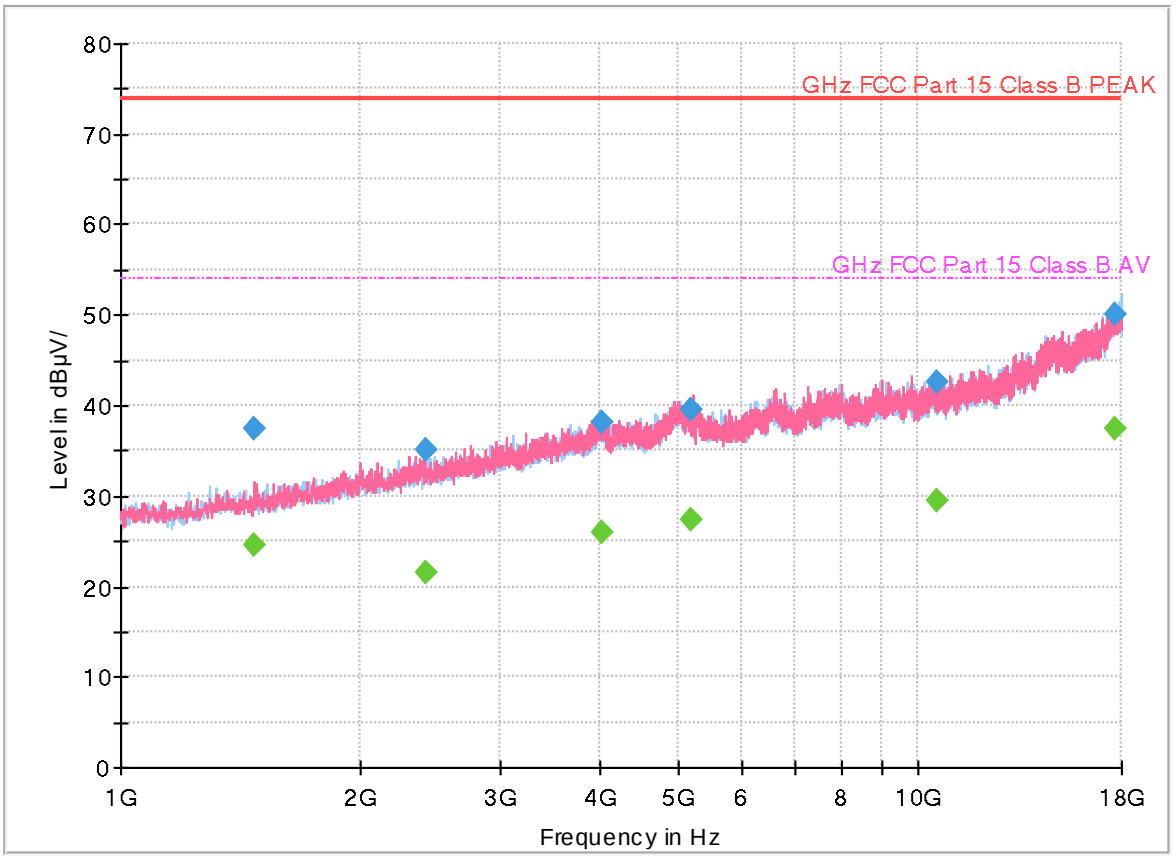
[EUT+Earphone] LTE B5+5G NR n5 High ch Idle

1 GHz to 18 GHz

Full Spectrum




| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1470.0300 | 37.52 | 74.00 | 36.48 | 225.1 | V | 335.0 | -29.2 |
| 2408.6500 | 35.06 | 74.00 | 38.94 | 183.8 | V | 224.0 | -24.2 |
| 4013.0900 | 38.11 | 74.00 | 35.89 | 293.7 | V | 269.0 | -17.6 |
| 5178.2450 | 39.59 | 74.00 | 34.41 | 219.9 | H | 336.0 | -14.6 |
| 10595.7400 | 42.68 | 74.00 | 31.32 | 208.8 | V | 167.0 | -7.6 |
| 17720.2500 | 50.07 | 74.00 | 23.93 | 117.7 | V | 331.0 | 5.3 |

| Frequency (MHz) | CAverage (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|---|---|---|---|---|---|---|---|
| 1470.0300 | 24.56 | 54.00 | 29.44 | 225.1 | V | 335.0 | -29.2 |
| 2408.6500 | 21.48 | 54.00 | 32.52 | 183.8 | V | 224.0 | -24.2 |
| 4013.0900 | 26.02 | 54.00 | 27.98 | 293.7 | V | 269.0 | -17.6 |
| 5178.2450 | 27.46 | 54.00 | 26.54 | 219.9 | H | 336.0 | -14.6 |
| 10595.7400 | 29.55 | 54.00 | 24.45 | 208.8 | V | 167.0 | -7.6 |
| 17720.2500 | 37.52 | 54.00 | 16.48 | 117.7 | V | 331.0 | 5.3 |



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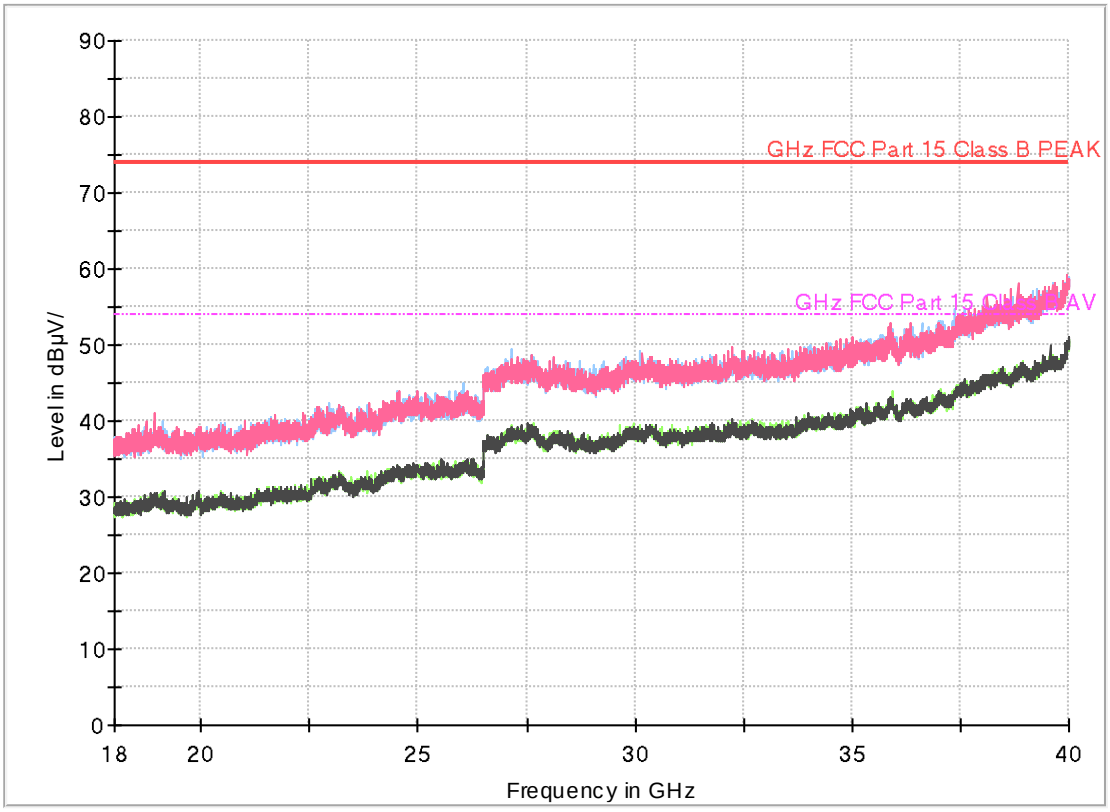
18 GHz to 40 GHz

Full Spectrum



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## 7. APPENDIX A. TEST SETUP PHOTO

Please refer to Appendix. A and test setup photo file no. as follows;

| File No. | Date of Issue | Description |
|---|---|---|
| HCT-EM-2404-FC002-P | April 30, 2024 | Initial Release |

End of report



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