



# TEST REPORT

No.25T04Z100239-026

for

TCL Communication Ltd.

GSM/UMTS/LTE/NR Mobile phone

T513V

FCC ID: 2ACCJH187

with

Hardware Version: 04

Software Version: 9ABJ

Issued Date: 2025-04-14

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

**Test Laboratory:**

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## **REPORT HISTORY**

| Report Number    | Revision | Description | Issue Date |
|------------------|----------|-------------|------------|
| 25T04Z100239-026 | Rev.0    | 1st edition | 2025-04-14 |

Note: the latest revision of the test report supersedes all previous version.

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## 1. Test Laboratory

### 1.1. Introduction & Accreditation

**Telecommunication Technology Labs, CAICT** is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

### 1.2. Testing Location

Location 1: CTTL(Huayuan North Road)

Address: No. 52 Huayuan North Road, Haidian District, Beijing,  
100191, P. R. China

### 1.3. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

### 1.4. Project data

Testing Start Date: 2025-02-24

Testing End Date: 2025-03-17

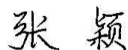
### 1.5. Signature



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Zhang Xia

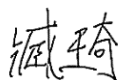
(Prepared this test report)



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Zhang Ying

(Reviewed this test report)



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Zang Qi

(Approved this test report)

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd.  
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Park, Shatin, NT, Hong Kong  
Contact: Ting Wang  
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### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science  
Park, Shatin, NT, Hong Kong  
Contact: Ting Wang  
Telephone: ting.wang.hz@tcl.com  
Email: +86 752 2639091

### 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

|             |                              |
|-------------|------------------------------|
| Description | GSM/UMTS/LTE/NR Mobile phone |
| Model Name  | T513V                        |

Note1: The EUT functions are described in Annex A of this test report. Specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the client. Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, CAICT.

Note2: According to the declaration of client, the model T513V is the same as T513SP product, the test was not repeated and the results of this report were all from test report 25T04Z100239-001.

#### 3.2. Internal Identification of EUT

| EUT ID* | SN or IMEI                          | HW Version | SW Version | Date of receipt |
|---------|-------------------------------------|------------|------------|-----------------|
| EUT1    | 016644000212792/<br>016644000212800 | 04         | 9ABJ       | 2025-02-24      |

\*EUT ID: is used to identify the test sample in the lab internally. The HW and SW version information were provided by the applicant.

#### 3.3. Internal Identification of AE

| AE ID* | Description | Model        | Manufacturer               | Note       |
|--------|-------------|--------------|----------------------------|------------|
| AE1    | USB Cable   | CDA0000218C1 | JUWEI                      | Data cable |
| AE2    | Charger     | /            | Provided by the laboratory | ---        |

\*AE ID: is used to identify the test sample in the lab internally.

#### 3.4. EUT set-ups

| EUT set-up No. | Combination of EUT and AE | Remarks                       |
|----------------|---------------------------|-------------------------------|
| Set.1          | EUT1 + AE1 + AE2          | Charging                      |
| Set.2          | EUT1 + AE1 + PC           | Connected to PC               |
| Set.3          | EUT1 + AE1 + Mobile phone | OTG(Provide power for others) |

## **4. Reference Documents**

### **4.1. Documents supplied by applicant**

EUT parameters, referring to Annex A for detailed information, were supplied by the client or manufacturer, which is the basis of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

### **4.2. Reference Documents for testing**

The following documents listed in this section are referred for testing.

| Reference              | Title                                                                                                                                                                            | Version |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| FCC Part 15, Subpart B | Radio frequency devices - Unintentional Radiators                                                                                                                                | 2023    |
| ANSI C63.4             | American National Standard for<br>Methods of Measurement of Radio-<br>Noise Emissions from Low-Voltage<br>Electrical and Electronic Equipment<br>in the Range of 9 kHz to 40 GHz | 2014    |

Note: The test methods have no deviation with standards.

## 5. Test Results

| Abbreviations used in this clause: |    |                                           |
|------------------------------------|----|-------------------------------------------|
| Verdict Column                     | P  | Pass                                      |
|                                    | F  | Fail                                      |
|                                    | BR | Re-use test data from basic model report. |
|                                    | NA | Not applicable                            |
|                                    | NM | Not measured                              |

| Items | Test Name          | Clause in FCC rules | Section in this report | Verdict | Test Location            |
|-------|--------------------|---------------------|------------------------|---------|--------------------------|
| 1     | Radiated Emission  | 15.109(a)           | B.1                    | P       | CTTL(Huayuan North Road) |
| 2     | Conducted Emission | 15.107(a)           | B.2                    | P       | CTTL(Huayuan North Road) |



## 6. Test Facilities Utilized

Test instruments list:

| No. | Equipment                            | Model     | Serial Number | Manufacturer | Calibration Period | Calibration Due date |
|-----|--------------------------------------|-----------|---------------|--------------|--------------------|----------------------|
| 1   | LISN                                 | ENV216    | 101200        | R&S          | 1 year             | 2025-05-16           |
| 2   | Test Receiver                        | ESCI      | 100344        | R&S          | 1 year             | 2025-04-01           |
| 3   | Universal Radio Communication Tester | CMW500    | 116588        | R&S          | 1 year             | 2026-01-25           |
| 4   | Test Receiver                        | ESW44     | 103023        | R&S          | 1 year             | 2025-06-06           |
| 5   | BiLog Antenna                        | VULB9163  | 01222         | Schwarzbeck  | 1 year             | 2025-09-11           |
| 6   | EMI Antenna                          | 3115      | 00167250      | ETS-Lindgren | 1 year             | 2025-04-11           |
| 7   | PC<br>With mouse and keyboard        | M4000e-17 | M706GWXD      | Lenovo       | N/A                | N/A                  |
| 8   | Printer                              | P1606dn   | VNC3L52122    | HP           | N/A                | N/A                  |
| 9   | Universal Radio Communication Tester | CMW500    | 116588        | R&S          | 1 year             | 2026-01-25           |

Note: the No.3 equipment was in calibration due date when used for testing.

Test software list:

| Test Item          | Test Software | Software Vendor |
|--------------------|---------------|-----------------|
| Radiated Emission  | EMC32         | R&S             |
| Conducted Emission | EMC32         | R&S             |

**Semi-anechoic chamber utilized** did not exceed following limits along the testing:

|                                                 |                                                 |
|-------------------------------------------------|-------------------------------------------------|
| Temperature                                     | Min. = 15 °C, Max. = 35 °C                      |
| Relative humidity                               | Min. = 15 %, Max. = 75 %                        |
| Shielding effectiveness                         | 0.014MHz-1MHz, >60dB;<br>1MHz - 1000MHz, >90dB. |
| Electrical insulation                           | > 2 MΩ                                          |
| Ground system resistance                        | < 4 Ω                                           |
| Normalised site attenuation (NSA)               | < ±4 dB, 10 m distance                          |
| Site voltage standing-wave ratio ( $S_{VSWR}$ ) | Between 0 and 6 dB, from 1GHz to 18GHz          |

**Shielded room utilized** did not exceed following limits along the testing:

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Temperature              | Min. = 15 °C, Max. = 35 °C                    |
| Relative humidity        | Min. = 20 %, Max. = 75 %                      |
| Shielding effectiveness  | 0.014MHz-1MHz, >60dB;<br>1MHz—1000MHz, >90dB. |
| Electrical insulation    | > 2 MΩ                                        |
| Ground system resistance | < 4 Ω                                         |

## 7. Measurement Uncertainty

Where relevant, the following measurement uncertainty(worse case) levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

### Location 1: CTTL(huayuan North Road)

| Test item          | Frequency ranges | Measurement uncertainty        |
|--------------------|------------------|--------------------------------|
| Radiated Emission  | 30MHz-1GHz       | 5.15dB( $k=2$ )                |
|                    | 1GHz-18GHz       | 5.54dB( $k=2$ )                |
| Conducted Emission | 150kHz-30MHz     | AC Power Line: 3.08dB( $k=2$ ) |

## **ANNEX A: EUT parameters**

|                                             |                                                                                                                                                                                                                    |              |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Cellular Bands operate between 30MHz-960MHz | <input checked="" type="checkbox"/> GSM                                                                                                                                                                            | Band 850     |
|                                             | <input checked="" type="checkbox"/> WCDMA                                                                                                                                                                          | Band V       |
|                                             | <input checked="" type="checkbox"/> LTE                                                                                                                                                                            | Band 5/12/13 |
|                                             | <input checked="" type="checkbox"/> 5G NR SA                                                                                                                                                                       | Band 5       |
| Other FCC Part 15B related features         | <input checked="" type="checkbox"/> FM <input type="checkbox"/> MP3 <input checked="" type="checkbox"/> Video <input checked="" type="checkbox"/> Camera <input checked="" type="checkbox"/> USB data/charging/OTG |              |

## **ANNEX B: Detailed Test Results**

### **B.1. Radiated Emission**

**Reference:** FCC Part 15.109(a).

**Method of measurement:** The field strength of radiated emissions from the unintentional radiator at distances of 10 meters (for 30MHz-1GHz) and 3 meters (for above 1GHz) were tested. The test was in accordance with the procedures of ANSI C63.4 – 2014, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at the specified distance from the EUT. During the test, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

**EUT operating mode:** The EUT was operating in the USB data and/or charging mode. During the test, the EUT was connected to a charger in the case of charging mode. The EUT was tested while operating in licensed band Rx mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in Annex A, were investigated. Only the worst case emissions are reported. All equipment was placed on the test table top and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions.

#### **Measurement limit:**

| Frequency range<br>(MHz) | Field strength limit (μV/m) |         |      |
|--------------------------|-----------------------------|---------|------|
|                          | Quasi-peak                  | Average | Peak |
| 30-88                    | 100                         |         |      |
| 88-216                   | 150                         |         |      |
| 216-960                  | 200                         |         |      |
| 960-1000                 | 500                         |         |      |
| >1000                    |                             | 500     | 5000 |

Note: the above limit is for 3 meters test distance. The limits for 10 meters distance is got by converting:  $\text{Limit}(10\text{m}) = \text{Limit}(3\text{m}) + 20[\log(3/10)]$ , which is according to FCC 15.109(g)(2)

#### **Test settings:**

| Frequency range (MHz) | RBW/VBW               | Sweep Time (s) | Detector        |
|-----------------------|-----------------------|----------------|-----------------|
| 30-1000               | 120kHz (IF Bandwidth) | 5              | Peak/Quasi-peak |
| Above 1000            | 1MHz/3MHz             | 15             | Peak, Average   |

#### **Measurement results:**

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + G_A + G_{\text{PL}}$$

Where

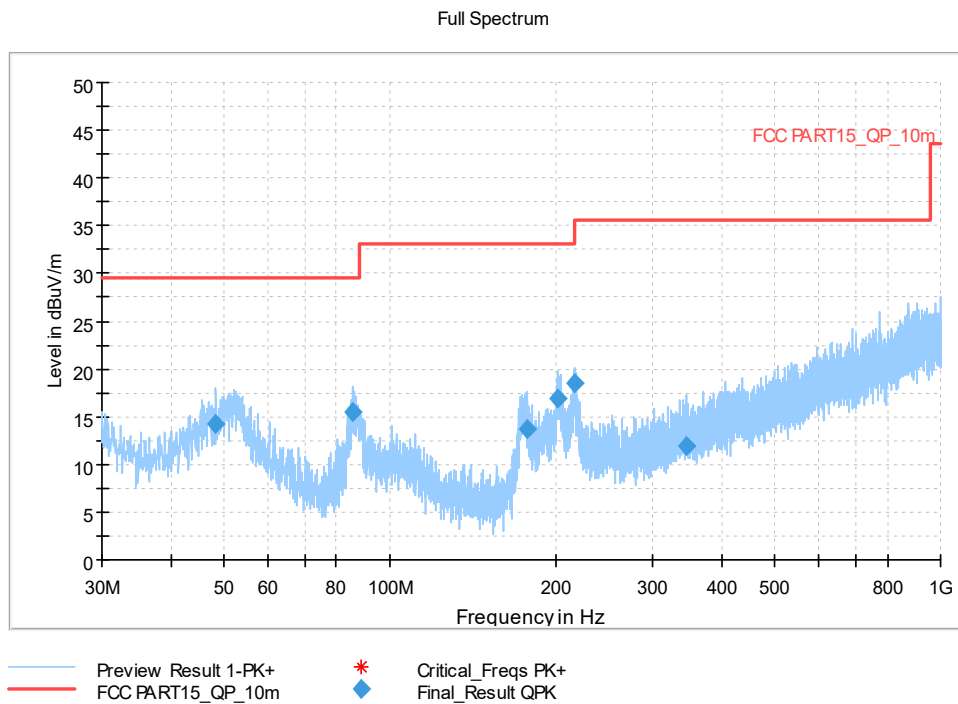
$G_A$ : Antenna factor of receive antenna

$G_{PL}$ : Path Loss

$P_{Mea}$ : Measurement result on receiver.

Note: The measurement results showed as followed are worst cases, and the combinations of different batteries, cables and headsets were considered if applicable.

### EUT1 Front camera, GSM 850, MP3 and charger mode, Set.1

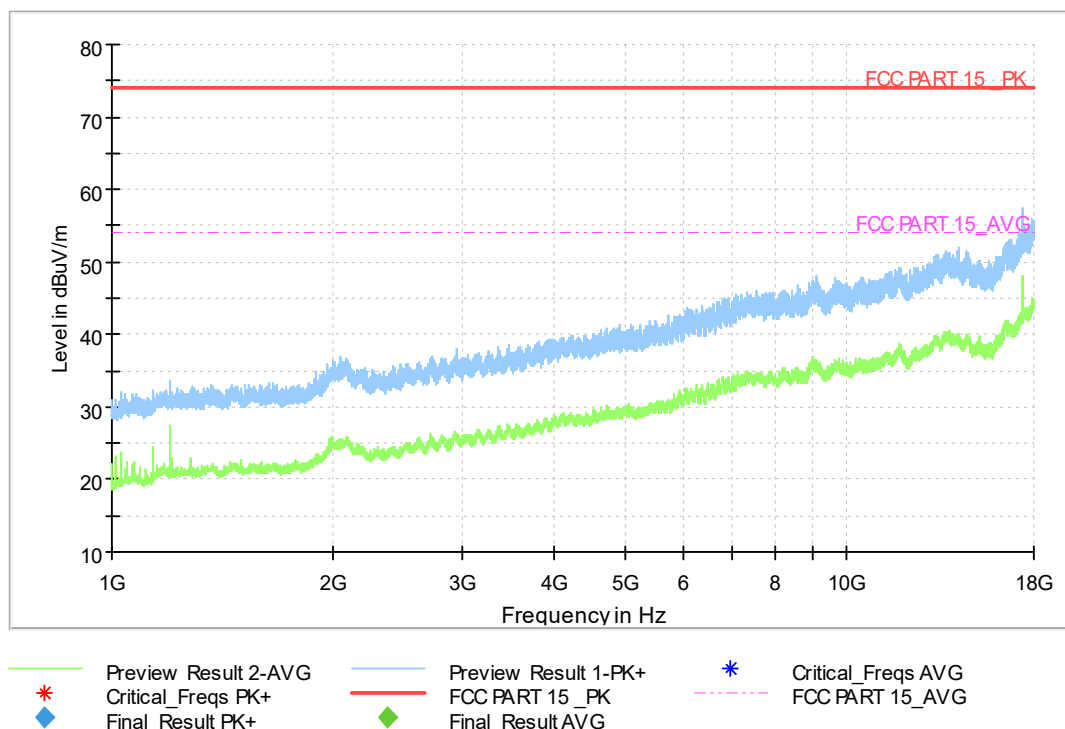


**Figure A.1 Radiated Emission from 30MHz to 1GHz**

QP detector

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-------------|-----|---------------|
| 48.333000       | 14.26              | 29.54          | 15.28       | 120.000         | 100.0       | V   | -44.0         |
| 85.484000       | 15.52              | 29.54          | 14.02       | 120.000         | 194.0       | V   | 293.0         |
| 176.955000      | 13.67              | 33.06          | 19.39       | 120.000         | 206.0       | V   | 255.0         |
| 201.835500      | 16.92              | 33.06          | 16.14       | 120.000         | 283.0       | H   | 27.0          |
| 216.531000      | 18.53              | 35.56          | 17.03       | 120.000         | 119.0       | V   | 158.0         |
| 344.813500      | 11.96              | 35.56          | 23.60       | 120.000         | 225.0       | V   | -22.0         |

Full Spectrum



**Figure A.2 Radiated Emission from 1GHz to 18GHz**

**Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17357.1         | 48.1                        | -27.46          | 42.1                  | 33.46                   | 54             | 5.9         | H                  |
| 17356.7         | 47.98                       | -27.46          | 42.1                  | 33.34                   | 54             | 6.02        | H                  |
| 17354.3         | 47.78                       | -27.46          | 42.1                  | 33.14                   | 54             | 6.22        | H                  |
| 17354           | 45.68                       | -27.46          | 42.1                  | 31.04                   | 54             | 8.32        | H                  |
| 17918.1         | 45                          | -26.8           | 42.3                  | 29.5                    | 54             | 9           | H                  |
| 17934           | 44.66                       | -26.8           | 42.3                  | 29.16                   | 54             | 9.34        | V                  |

**Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17357.1         | 57.51                       | -27.46          | 42.1                  | 42.87                   | 74             | 16.49       | H                  |
| 17354.3         | 56.56                       | -27.46          | 42.1                  | 41.92                   | 74             | 17.44       | H                  |
| 17354           | 56.22                       | -27.46          | 42.1                  | 41.58                   | 74             | 17.78       | H                  |
| 17401.9         | 56.06                       | -28.04          | 42.1                  | 42                      | 74             | 17.94       | H                  |
| 17919.4         | 55.77                       | -26.8           | 42.3                  | 40.27                   | 74             | 18.23       | H                  |
| 17951           | 55.74                       | -26.8           | 42.3                  | 40.24                   | 74             | 18.26       | V                  |

# EUT1 LTE Band 5 idle, rear camera, FM and charger mode, Set.1

Full Spectrum

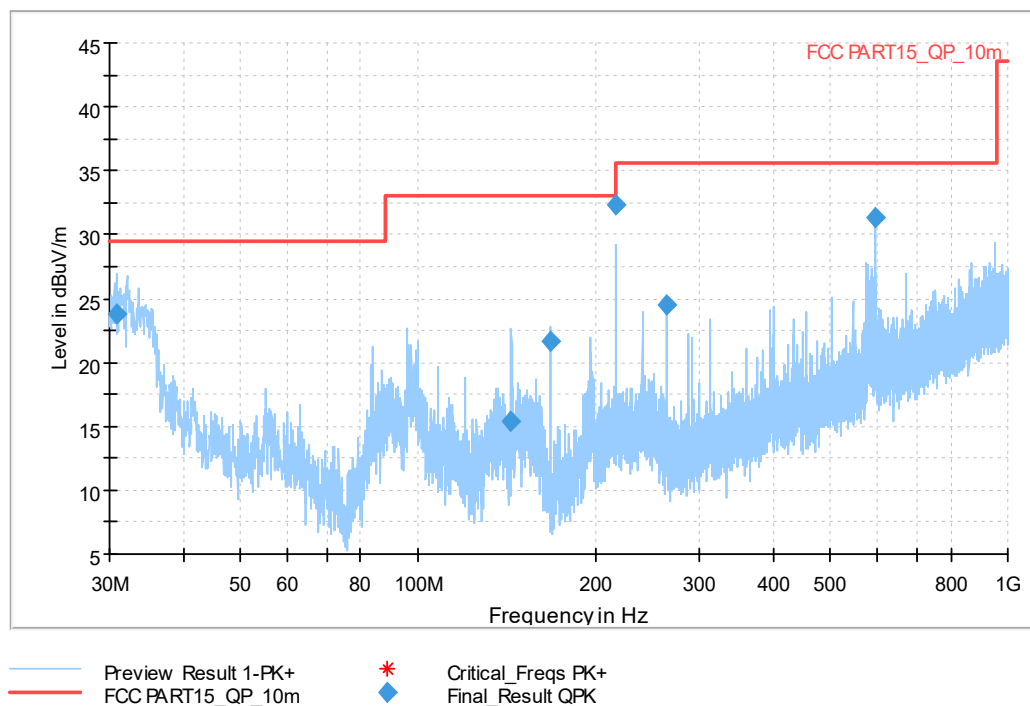
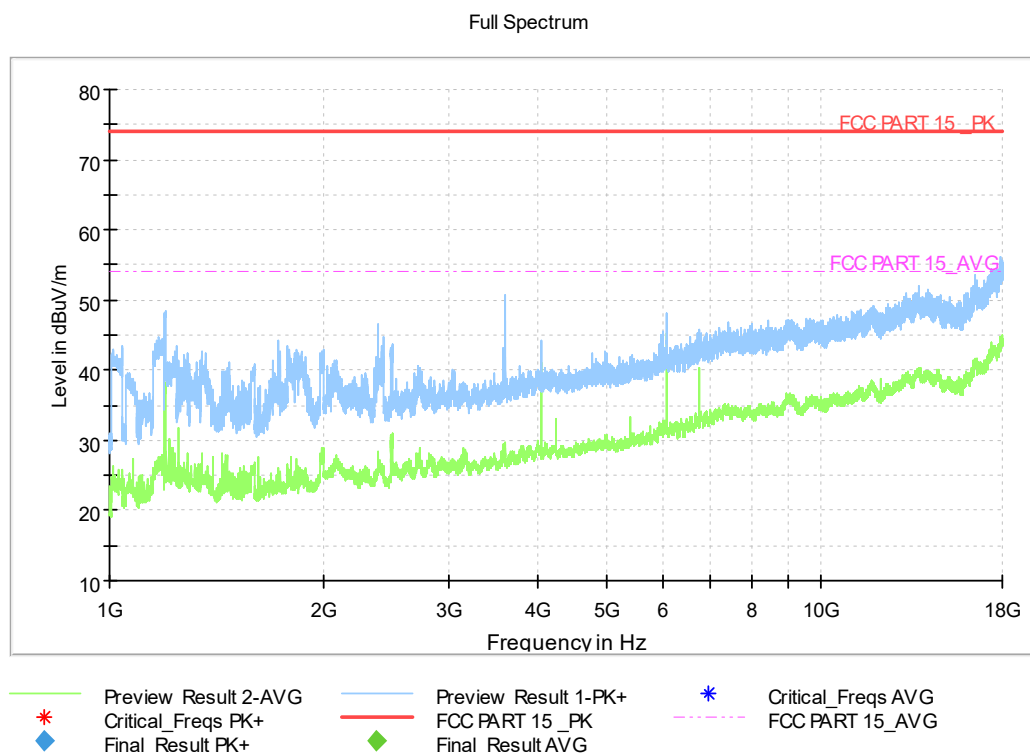


Figure A.3 Radiated Emission from 30MHz to 1GHz

## QP detector

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-------------|-----|---------------|
| 30.921500       | 23.77              | 29.54          | 5.77        | 120.000         | 125.0       | V   | 215.0         |
| 144.023500      | 15.40              | 33.06          | 17.66       | 120.000         | 125.0       | V   | 46.0          |
| 167.982500      | 21.62              | 33.06          | 11.44       | 120.000         | 325.0       | H   | 45.0          |
| 215.997500      | 32.38              | 33.06          | 0.68        | 120.000         | 108.0       | V   | 126.0         |
| 263.964000      | 24.46              | 35.56          | 11.10       | 120.000         | 204.0       | H   | 164.0         |
| 594.685500      | 31.32              | 35.56          | 4.24        | 120.000         | 225.0       | V   | 299.0         |



**Figure A.4 Radiated Emission from 1GHz to 18GHz**

#### Average detector

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 6056.1          | 45.36                       | -36.15          | 35.4                  | 46.11                   | 54             | 8.64        | V                  |
| 17920.8         | 44.81                       | -26.8           | 42.3                  | 29.31                   | 54             | 9.19        | H                  |
| 6056.5          | 44.68                       | -36.15          | 35.4                  | 45.43                   | 54             | 9.32        | V                  |
| 17937.4         | 44.58                       | -26.8           | 42.3                  | 29.08                   | 54             | 9.42        | H                  |
| 17926.6         | 44.56                       | -26.8           | 42.3                  | 29.06                   | 54             | 9.44        | H                  |
| 17940.2         | 44.55                       | -26.8           | 42.3                  | 29.05                   | 54             | 9.45        | V                  |

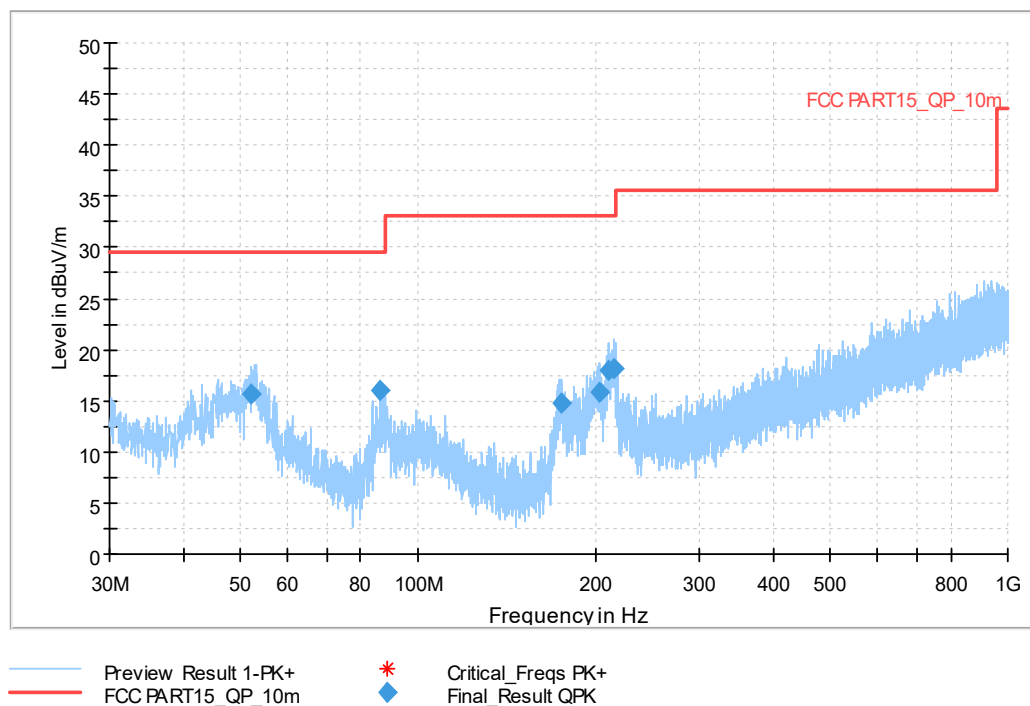
#### Peak detector

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17943.9         | 56.02                       | -26.8           | 42.3                  | 40.52                   | 74             | 17.98       | V                  |
| 17953.4         | 55.7                        | -26.8           | 42.3                  | 40.2                    | 74             | 18.3        | H                  |
| 17939.5         | 55.49                       | -26.8           | 42.3                  | 39.99                   | 74             | 18.51       | H                  |
| 17920.1         | 55.44                       | -26.8           | 42.3                  | 39.94                   | 74             | 18.56       | H                  |
| 17981.3         | 55.32                       | -26.8           | 42.3                  | 39.82                   | 74             | 18.68       | V                  |
| 17985.7         | 55.32                       | -26.8           | 42.3                  | 39.82                   | 74             | 18.68       | V                  |



**EUT1 USB connected to PC and NR n5 idle mode, Set.2**

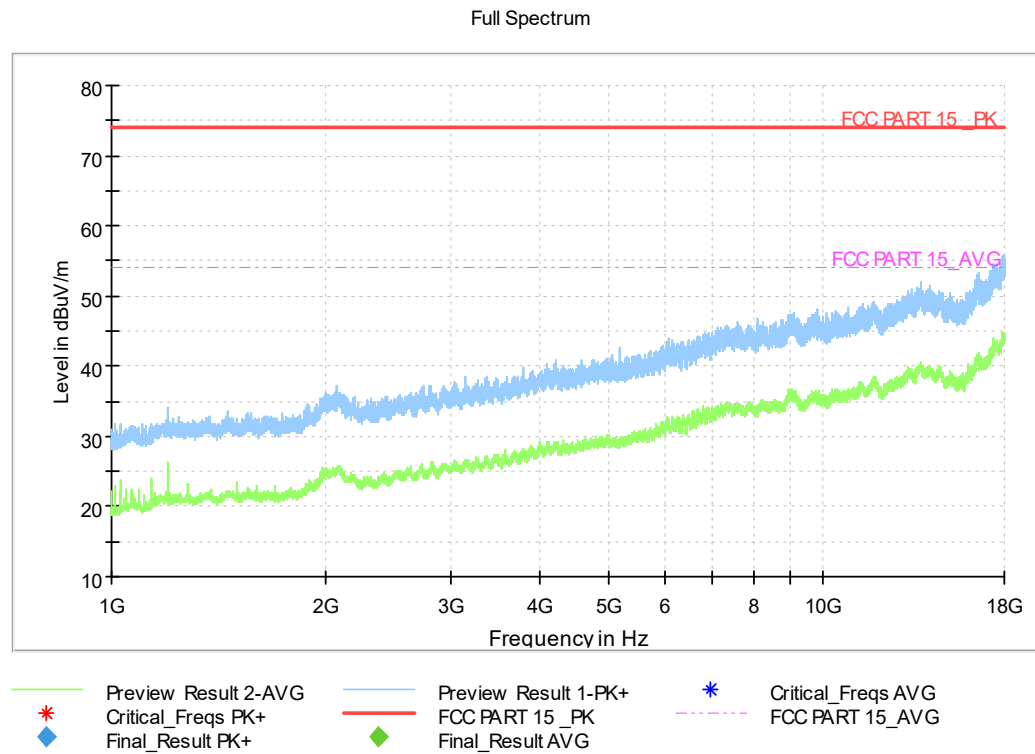
Full Spectrum



**Figure A.5 Radiated Emission from 30MHz to 1GHz**

**QP detector**

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-------------|-----|---------------|
| 52.261500       | 15.65              | 29.54          | 13.89       | 120.000         | 119.0       | V   | 17.0          |
| 86.260000       | 16.08              | 29.54          | 13.46       | 120.000         | 175.0       | V   | 293.0         |
| 174.772500      | 14.79              | 33.06          | 18.27       | 120.000         | 108.0       | V   | 255.0         |
| 202.611500      | 15.89              | 33.06          | 17.17       | 120.000         | 275.0       | H   | 6.0           |
| 210.662500      | 17.95              | 33.06          | 15.11       | 120.000         | 294.0       | V   | 274.0         |
| 214.639500      | 18.12              | 33.06          | 14.94       | 120.000         | 317.0       | V   | 278.0         |



**Figure A.6 Radiated Emission from 1GHz to 18GHz**

**Average detector**

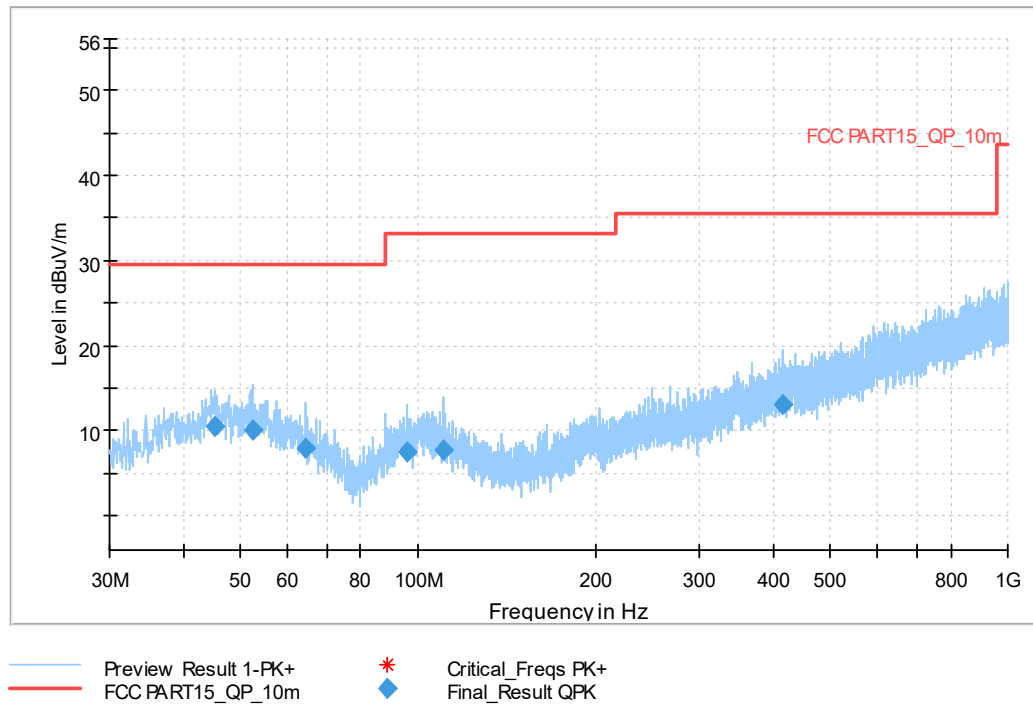
| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17947.3         | 44.59                       | -26.8           | 42.3                  | 29.09                   | 54             | 9.41        | H                  |
| 17979.9         | 44.57                       | -26.8           | 42.3                  | 29.07                   | 54             | 9.43        | V                  |
| 17915           | 44.54                       | -26.8           | 42.3                  | 29.04                   | 54             | 9.46        | V                  |
| 17911.3         | 44.5                        | -26.8           | 42.3                  | 29                      | 54             | 9.5         | H                  |
| 17930.6         | 44.5                        | -26.8           | 42.3                  | 29                      | 54             | 9.5         | H                  |
| 17986.7         | 44.49                       | -26.8           | 42.3                  | 28.99                   | 54             | 9.51        | V                  |

**Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17906.5         | 56.06                       | -26.8           | 42.3                  | 40.56                   | 74             | 17.94       | H                  |
| 17975.9         | 55.6                        | -26.8           | 42.3                  | 40.1                    | 74             | 18.4        | H                  |
| 17911.6         | 55.55                       | -26.8           | 42.3                  | 40.05                   | 74             | 18.45       | V                  |
| 17917.7         | 55.47                       | -26.8           | 42.3                  | 39.97                   | 74             | 18.53       | H                  |
| 17944.6         | 55.36                       | -26.8           | 42.3                  | 39.86                   | 74             | 18.64       | V                  |
| 17931.3         | 55.32                       | -26.8           | 42.3                  | 39.82                   | 74             | 18.68       | H                  |

# EUT1 USB connected to another mobile phone and LTE idle mode, Set.3

Full Spectrum

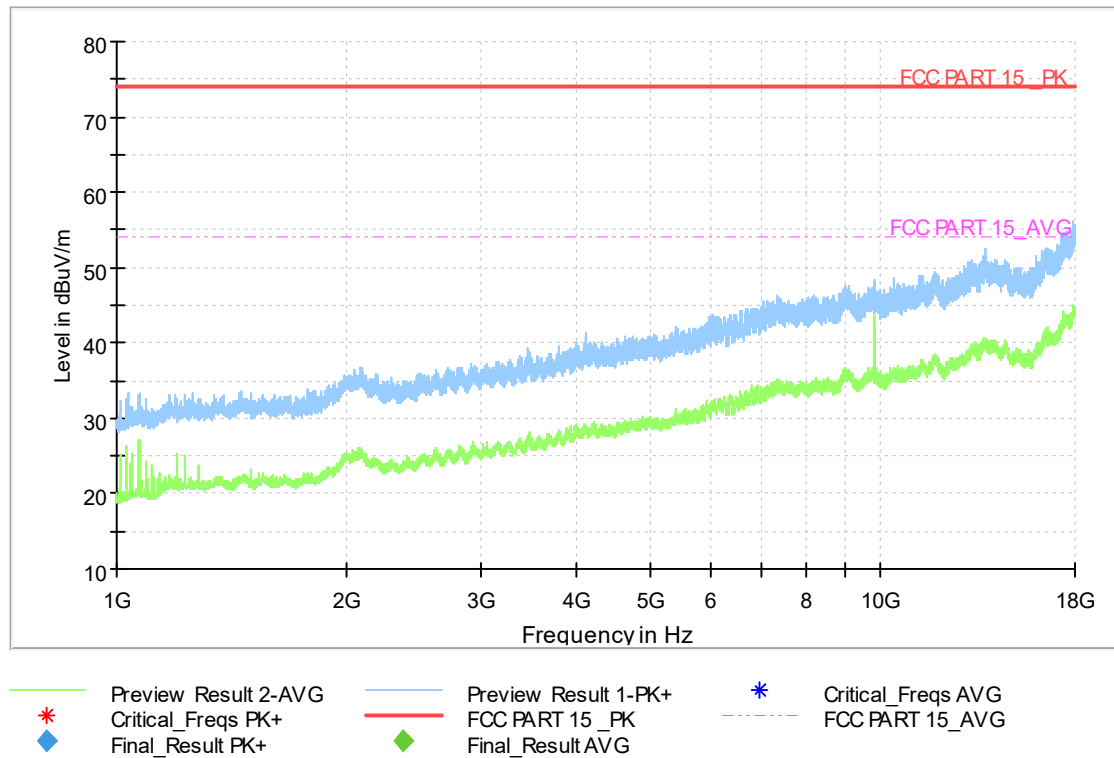


**Figure A.7 Radiated Emission from 30MHz to 1GHz**

**QP detector**

| Frequency (MHz) | QuasiPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-------------|-----|---------------|
| 45.374500       | 10.60              | 29.54          | 18.94       | 120.000         | 221.0       | V   | 135.0         |
| 52.358500       | 10.09              | 29.54          | 19.45       | 120.000         | 108.0       | V   | 45.0          |
| 64.580500       | 7.97               | 29.54          | 21.57       | 120.000         | 108.0       | V   | 98.0          |
| 96.154000       | 7.49               | 33.06          | 25.57       | 120.000         | 125.0       | H   | 225.0         |
| 110.364500      | 7.78               | 33.06          | 25.28       | 120.000         | 175.0       | H   | 128.0         |
| 416.593500      | 13.17              | 35.56          | 22.39       | 120.000         | 125.0       | V   | 226.0         |

Full Spectrum



**Figure A.8 Radiated Emission from 1GHz to 18GHz**

**Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17931.3         | 44.65                       | -26.8           | 42.3                  | 29.15                   | 54             | 9.35        | V                  |
| 17995.2         | 44.58                       | -26.8           | 42.3                  | 29.08                   | 54             | 9.42        | V                  |
| 17953.8         | 44.49                       | -26.8           | 42.3                  | 28.99                   | 54             | 9.51        | V                  |
| 17978.9         | 44.49                       | -26.8           | 42.3                  | 28.99                   | 54             | 9.51        | V                  |
| 17951.4         | 44.48                       | -26.8           | 42.3                  | 28.98                   | 54             | 9.52        | H                  |
| 17987.8         | 44.45                       | -26.8           | 42.3                  | 28.95                   | 54             | 9.55        | H                  |

**Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Limit (dBμV/m) | Margin (dB) | Antenna Pol. (H/V) |
|-----------------|-----------------------------|-----------------|-----------------------|-------------------------|----------------|-------------|--------------------|
| 17972.8         | 55.81                       | -26.8           | 42.3                  | 40.31                   | 74             | 18.19       | H                  |
| 17912.3         | 55.6                        | -26.8           | 42.3                  | 40.1                    | 74             | 18.4        | H                  |
| 17913           | 55.55                       | -26.8           | 42.3                  | 40.05                   | 74             | 18.45       | V                  |
| 17926.2         | 55.35                       | -26.8           | 42.3                  | 39.85                   | 74             | 18.65       | V                  |
| 17930.6         | 55.32                       | -26.8           | 42.3                  | 39.82                   | 74             | 18.68       | V                  |
| 17928.3         | 55.26                       | -26.8           | 42.3                  | 39.76                   | 74             | 18.74       | H                  |

## B.2. Conducted Emission

**Reference:** FCC: Part 15.107(a).

**Method of measurement:** For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 7.3.

**EUT operating mode:** The EUT is operating in the charging mode and USB data mode if applicable.

### Measurement limit:

| Frequency of emission (MHz)                    | Conducted limit (dBμV) |           |
|------------------------------------------------|------------------------|-----------|
|                                                | Quasi-peak             | Average   |
| 0.15-0.5                                       | 66 to 56*              | 56 to 46* |
| 0.5-5                                          | 56                     | 46        |
| 5-30                                           | 60                     | 50        |
| *Decreases with the logarithm of the frequency |                        |           |

### Test Settings:

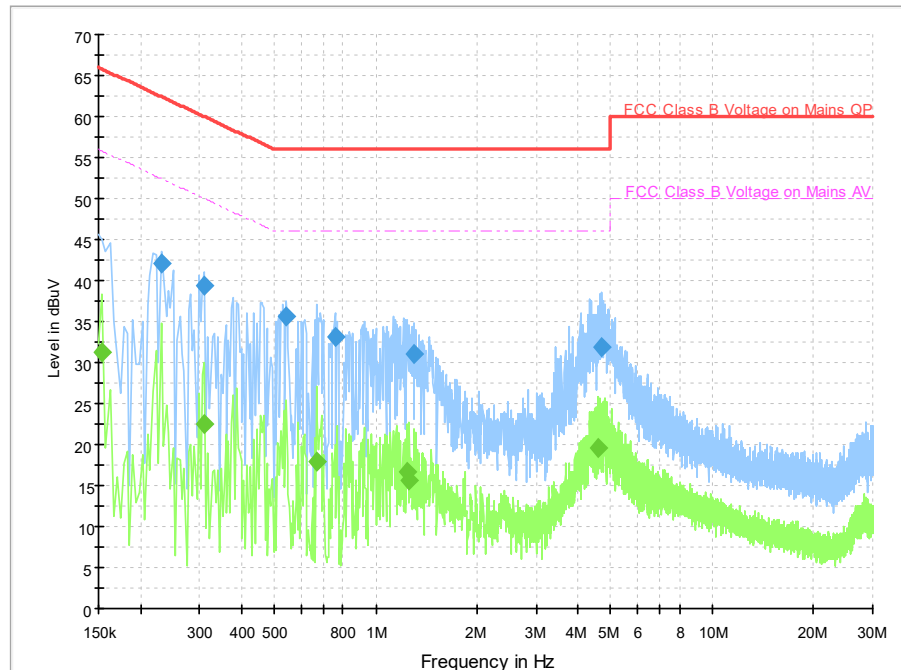
|            |               |
|------------|---------------|
| Voltage(V) | Frequency(Hz) |
| 120        | 60            |

|                  |               |
|------------------|---------------|
| RBW/IF bandwidth | Sweep Time(s) |
| 9kHz             | 1             |

### Measurement results:

The measurement results showed as followed are worst cases, and the combinations of different batteries, cables and headsets were considered if applicable.

**EUT1 Rear camera, FM, LTE Band 5 idle and charger mode, Set.1**



**Figure A.9 Conducted Emission**

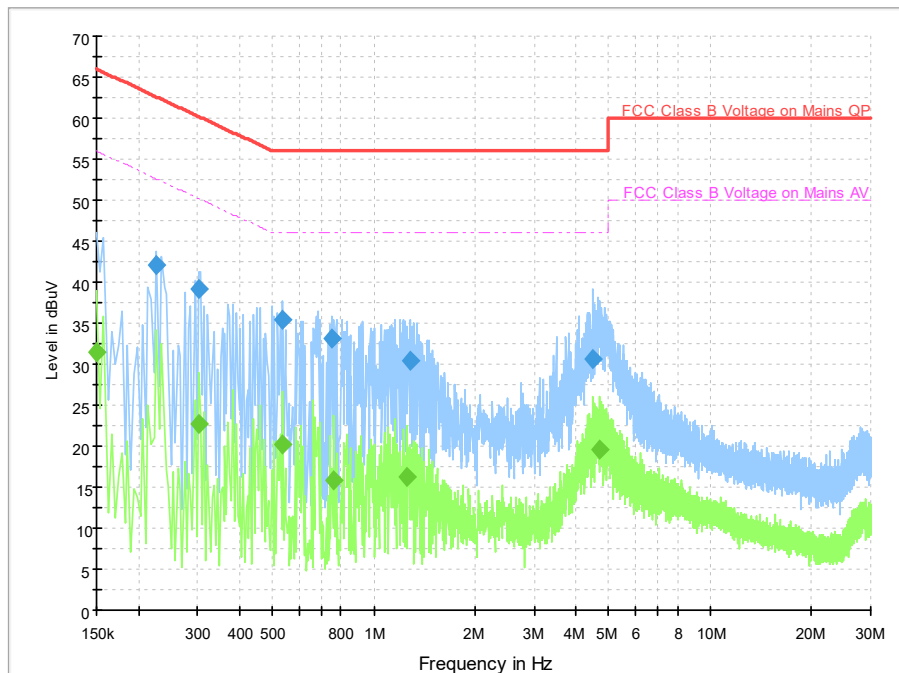
**Final Result 1**

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.230000        | 42.1             | 2000.0          | 9.000           | On     | N    | 19.8       | 20.4        | 62.4         |
| 0.310000        | 39.4             | 2000.0          | 9.000           | On     | L1   | 19.9       | 20.6        | 60.0         |
| 0.542000        | 35.6             | 2000.0          | 9.000           | On     | N    | 19.9       | 20.4        | 56.0         |
| 0.758000        | 33.2             | 2000.0          | 9.000           | On     | N    | 19.8       | 22.8        | 56.0         |
| 1.302000        | 31.1             | 2000.0          | 9.000           | On     | N    | 19.7       | 24.9        | 56.0         |
| 4.698000        | 31.9             | 2000.0          | 9.000           | On     | N    | 19.6       | 24.1        | 56.0         |

**Final Result 2**

| Frequency (MHz) | CAverage (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.154000        | 31.2            | 2000.0          | 9.000           | On     | L1   | 20.0       | 24.6        | 55.8         |
| 0.310000        | 22.6            | 2000.0          | 9.000           | On     | L1   | 19.9       | 27.4        | 50.0         |
| 0.666000        | 17.8            | 2000.0          | 9.000           | On     | N    | 19.8       | 28.2        | 46.0         |
| 1.234000        | 16.7            | 2000.0          | 9.000           | On     | N    | 19.7       | 29.3        | 46.0         |
| 1.262000        | 15.7            | 2000.0          | 9.000           | On     | N    | 19.7       | 30.3        | 46.0         |
| 4.574000        | 19.5            | 2000.0          | 9.000           | On     | N    | 19.6       | 26.5        | 46.0         |

**EUT1 GSM850 idle, front camera, MP3 and charger mode, Set.1**



**Figure A.10 Conducted Emission**

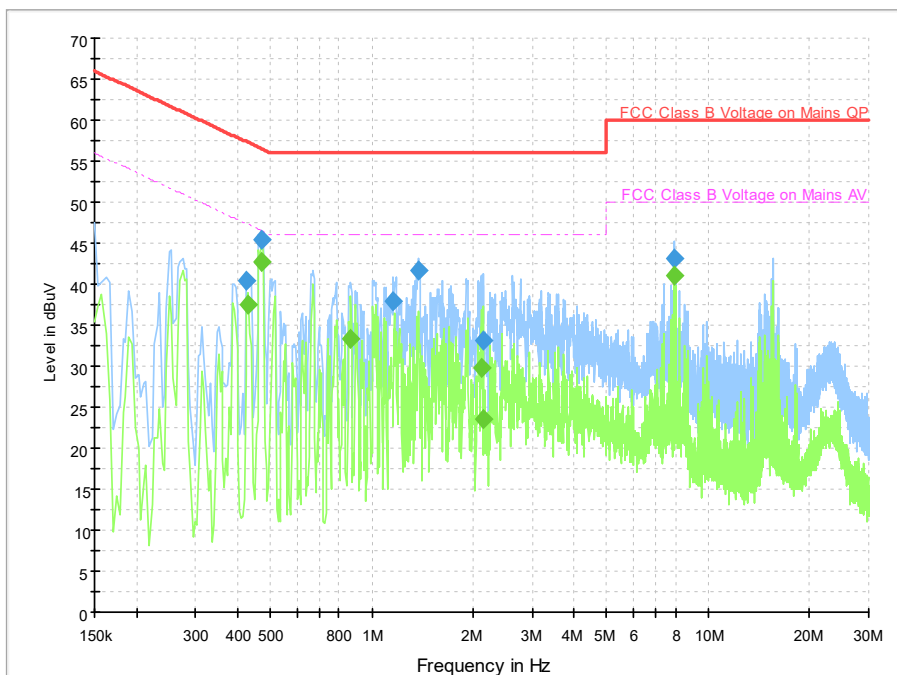
**Final Result 1**

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.226000        | 42.1             | 2000.0          | 9.000           | On     | N    | 19.8       | 20.5        | 62.6         |
| 0.302000        | 39.2             | 2000.0          | 9.000           | On     | L1   | 19.9       | 21.0        | 60.2         |
| 0.538000        | 35.4             | 2000.0          | 9.000           | On     | N    | 19.9       | 20.6        | 56.0         |
| 0.754000        | 33.2             | 2000.0          | 9.000           | On     | N    | 19.8       | 22.8        | 56.0         |
| 1.278000        | 30.5             | 2000.0          | 9.000           | On     | N    | 19.7       | 25.5        | 56.0         |
| 4.502000        | 30.5             | 2000.0          | 9.000           | On     | N    | 19.6       | 25.5        | 56.0         |

**Final Result 2**

| Frequency (MHz) | CAverage (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.150000        | 31.5            | 2000.0          | 9.000           | On     | N    | 20.1       | 24.5        | 56.0         |
| 0.302000        | 22.8            | 2000.0          | 9.000           | On     | L1   | 19.9       | 27.4        | 50.2         |
| 0.538000        | 20.1            | 2000.0          | 9.000           | On     | L1   | 20.0       | 25.9        | 46.0         |
| 0.762000        | 15.8            | 2000.0          | 9.000           | On     | N    | 19.8       | 30.2        | 46.0         |
| 1.258000        | 16.3            | 2000.0          | 9.000           | On     | L1   | 19.9       | 29.7        | 46.0         |
| 4.698000        | 19.6            | 2000.0          | 9.000           | On     | N    | 19.6       | 26.4        | 46.0         |

**EUT1 USB connected to PC and NR n5 idle mode, Set.2**



**Figure A.11 Conducted Emission**

**Final Result 1**

| Frequency<br>(MHz) | QuasiPeak<br>(dBμV) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Filter | Line | Corr.<br>(dB) | Margin<br>(dB) | Limit<br>(dBμV) |
|--------------------|---------------------|--------------------|--------------------|--------|------|---------------|----------------|-----------------|
| 0.426000           | 40.4                | 2000.0             | 9.000              | On     | L1   | 20.0          | 16.9           | 57.3            |
| 0.470000           | 45.4                | 2000.0             | 9.000              | On     | L1   | 20.0          | 11.1           | 56.5            |
| 1.154000           | 37.9                | 2000.0             | 9.000              | On     | N    | 19.7          | 18.1           | 56.0            |
| 1.378000           | 41.7                | 2000.0             | 9.000              | On     | L1   | 19.9          | 14.3           | 56.0            |
| 2.142000           | 33.1                | 2000.0             | 9.000              | On     | L1   | 19.8          | 22.9           | 56.0            |
| 7.926000           | 43.1                | 2000.0             | 9.000              | On     | L1   | 19.9          | 16.9           | 60.0            |

**Final Result 2**

| Frequency<br>(MHz) | CAverage<br>(dBμV) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Filter | Line | Corr.<br>(dB) | Margin<br>(dB) | Limit<br>(dBμV) |
|--------------------|--------------------|--------------------|--------------------|--------|------|---------------|----------------|-----------------|
| 0.430000           | 37.6               | 2000.0             | 9.000              | On     | N    | 19.9          | 9.7            | 47.3            |
| 0.470000           | 42.7               | 2000.0             | 9.000              | On     | L1   | 20.0          | 3.8            | 46.5            |
| 0.866000           | 33.4               | 2000.0             | 9.000              | On     | N    | 19.8          | 12.6           | 46.0            |
| 2.110000           | 29.8               | 2000.0             | 9.000              | On     | L1   | 19.8          | 16.2           | 46.0            |
| 2.142000           | 23.6               | 2000.0             | 9.000              | On     | L1   | 19.8          | 22.4           | 46.0            |
| 7.926000           | 41.0               | 2000.0             | 9.000              | On     | L1   | 19.9          | 9.0            | 50.0            |



### **ANNEX C: Persons involved in this testing**

| Test Item          | Tester       |
|--------------------|--------------|
| Radiated Emission  | Guo Zilong   |
| Conducted Emission | Chen Tianwei |

**\*\*\*END OF REPORT\*\*\***