



# FCC 15B TEST REPORT

No. I20Z62065-EMC01

for

**TCL Communication Ltd.**

**GSM/UMTS/LTE Mobile phone**

**Model Name: 5002H**

**FCC ID: 2ACCJH135**

with

**Hardware Version: V1.2**

**Software Version: v3C7N**

**Issued Date: 2020-12-18**

**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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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## **REPORT HISTORY**

| <b>Report Number</b> | <b>Revision</b> | <b>Description</b>      | <b>Issue Date</b> |
|----------------------|-----------------|-------------------------|-------------------|
| I20Z62065-EMC01      | Rev.0           | 1 <sup>st</sup> edition | 2020-12-18        |



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## 1. Test Laboratory

### 1.1. Testing Location

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

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

### 1.2. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

### 1.3. Project data

Testing Start Date: 2020-11-29

Testing End Date: 2020-12-18

### 1.4. Signature




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An Hui  
(Prepared this test report)



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Zhang Ying  
(Reviewed this test report)



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Zhang Xia  
Deputy Director of the laboratory  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd.  
Address /Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science  
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### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
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Contact Person: Gong Zhizhou  
Contact Email: zhizhou.gong@tcl.com  
Telephone: 0086-755-36611722  
Fax: 0086-755-36612000-81722

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

#### **3.1. About EUT**

|             |                           |
|-------------|---------------------------|
| Description | GSM/UMTS/LTE Mobile phone |
| Model Name  | 5002H                     |
| FCC ID      | 2ACCJH135                 |

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

#### **3.2. Internal Identification of EUT used during the test**

| EUT ID* | SN or IMEI                      | HW Version | SW Version |
|---------|---------------------------------|------------|------------|
| EUT1    | 355789140200154/355789140200162 | V1.2       | v3C7N      |

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

#### **3.3. Internal Identification of AE used during the test**

| AE ID* | Description | SN | Remarks |
|--------|-------------|----|---------|
| AE1    | Battery     | /  | /       |
| AE2    | Battery     | /  | /       |
| AE3    | charger     | /  | /       |
| AE4    | charger     | /  | No test |
| AE5    | charger     | /  | No test |
| AE6    | charger     | /  | No test |
| AE7    | charger     | /  | /       |
| AE8    | charger     | /  | No test |
| AE9    | USB Cable   | /  | /       |
| AE10   | USB Cable   | /  | /       |
| AE11   | Headset     | /  | /       |
| AE12   | Headset     | /  | /       |
| AE13   | Headset     | /  | /       |
| AE14   | Headset     | /  | No test |
| AE15   | Headset     | /  | /       |
| AE16   | Headset     | /  | No test |

AE1

|                 |              |
|-----------------|--------------|
| Model           | CAB2880001C1 |
| Manufacturer    | BYD          |
| Capacity        | 3000mAh      |
| Nominal Voltage | /            |



AE2

|                 |              |
|-----------------|--------------|
| Model           | CAB2880000C7 |
| Manufacturer    | VK           |
| Capacity        | 3000mAh      |
| Nominal Voltage | /            |

AE3

|                 |              |
|-----------------|--------------|
| Model           | CBA0058AAAC5 |
| Manufacturer    | PUAN         |
| Length of cable | /            |

AE4

|                 |              |
|-----------------|--------------|
| Model           | CBA0058ABAC5 |
| Manufacturer    | PUAN         |
| Length of cable | /            |

AE5

|                 |              |
|-----------------|--------------|
| Model           | CBA0058ACVC5 |
| Manufacturer    | PUAN         |
| Length of cable | /            |

AE6

|                 |              |
|-----------------|--------------|
| Model           | CBA0058AANC5 |
| Manufacturer    | PUAN         |
| Length of cable | /            |

AE7

|                 |              |
|-----------------|--------------|
| Model           | CBA0058AAAC7 |
| Manufacturer    | CHENYANG     |
| Length of cable | /            |

AE8

|                 |              |
|-----------------|--------------|
| Model           | CBA0058ABAC7 |
| Manufacturer    | CHENYANG     |
| Length of cable | /            |

AE9

|                 |              |
|-----------------|--------------|
| Model           | CDA3122005C8 |
| Manufacturer    | PUAN         |
| Length of cable |              |

AE10

|                 |              |
|-----------------|--------------|
| Model           | CDA3122005C1 |
| Manufacturer    | JUWEI        |
| Length of cable | /            |

AE11  
Model CCB0046A10C1  
Manufacturer Reach, Juwei  
Length of cable /

AE12  
Model CCB0046A10C4  
Manufacturer Reach, Meihao  
Length of cable /

AE13  
Model CCB0049A10C1  
Manufacturer Reach, Juwe  
Length of cable /

AE14  
Model CCB0049A12C1  
Manufacturer Reach, Juwe  
Length of cable /

AE15  
Model CCB0049A10C4  
Manufacturer MEIHAO  
Length of cable /

AE16  
Model CCB0049A12C4  
Manufacturer MEIHAO  
Length of cable /

\*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 + AE3+ AE9/AE10             | Charger1+Camera+GNSS+GSM850 idle |
| Set.2          | EUT1 + AE1/AE2 + AE7+ AE9/AE10             | Charger2+MP4+WCDMA850 idle       |
| Set.3          | EUT1 + AE1/AE2+ AE9/AE10<br>+AE11/12/13/15 | USB TO PC + FM +LTE Band5 idle   |

Note1:

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA850, LTE Band 5.



## 4. Reference Documents

### 4.1. Reference Documents for testing

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

| <b>Reference</b>       | <b>Title</b>   | <b>Version</b> |
|------------------------|--|----------------|
| FCC Part 15, Subpart B | Radio frequency devices - Unintentional Radiators  | 2019           |
| 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. LABORATORY ENVIRONMENT

**Semi-anechoic chamber SAC-1** (23 meters × 17meters × 10meters) did not exceed following limits along the EMC 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<br>( $S_{VSWR}$ ) | Between 0 and 6 dB, from 1GHz to 6GHz           |
| Uniformity of field strength                       | Between 0 and 6 dB, from 80 to 3000 MHz         |

**Shielded room** did not exceed following limits along the EMC 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  |

## 6. SUMMARY OF TEST RESULTS

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

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

## 7. Test Equipments Utilized

| NO. | Description                          | TYPE      | SERIES NUMBER | MANUFACTURE     | CAL DUE DATE | CALIBRATION INTERVAL |
|-----|--------------------------------------|-----------|---------------|-----------------|--------------|----------------------|
| 1   | LISN                                 | ENV216    | 101200        | Rohde & Schwarz | 2021-05-19   | 1 Year               |
| 2   | Test Receiver                        | ESCI 7    | 100344        | Rohde & Schwarz | 2021-02-26   | 1 Year               |
| 3   | Test Receiver                        | ESU26     | 100235        | Rohde & Schwarz | 2021-03-03   | 1 Year               |
| 4   | BiLog Antenna                        | VULB9163  | 9163-1223     | Schwarzbeck     | 2021-03-18   | 1 Year               |
| 5   | Dual-Ridge Waveguide Horn Antenna    | 3115      | 6914          | ETS-Lindgren    | 2021-01-14   | 1 Year               |
| 6   | Universal Radio Communication Tester | CMW500    | 116588        | R&S             | 2021-12-04   | 1 Year               |
| 7   | Signal Generator                     | SMBV100A  | 102063        | R&S             | 2021-02-26   | 1 Year               |
| 8   | PC                                   | M4000e-17 | M706GWXD      | Lenovo          | N/A          | N/A                  |
| 9   | Printer                              | P1606dn   | VNC3L52122    | HP              | N/A          | N/A                  |

| Test Item                    | Test Software and Version | Software Vendor |
|------------------------------|---------------------------|-----------------|
| Radiated Continuous Emission | EMC32 V9.01.0             | R&S             |
| Conducted Emission           | EMC32 V8.52.0             | R&S             |

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission**

#### **Reference**

FCC: CFR Part 15.109(a).

#### **A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator (charging mode and FM mode of MS) at distances of 10 meters (for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested 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 a distance of 3/10 meters from the EUT. During the tests, 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.

#### **A.1.2 EUT Operating Mode:**

The MS is operating in the charging mode. During the test MS is 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 Section 3.4, are investigated. Only the worst case emissions are reported.

All equipment is 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.

#### **A.1.3 Measurement Limit**

| Frequency range (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. 10 meters' limit is got by converting.

$$\text{Limit}(10\text{m}) = \text{Limit}(3\text{m}) + 20[\log(3/10)]$$

#### **A.1.4 Test Condition**

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

### A.1.5 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

$G_{\text{PL}}$ : Path Loss

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

Measurement uncertainty (worst case): 30MHz-1GHz: 5.16dB, 1GHz-18GHz: 5.44dB,  $k=2$ .

Note: The measurement results showed here are worst cases of the combinations of different Battery, cables and Headset.

#### Measurement results for Set.1:

##### EUT1 Charger1+Camera+GNSS+GSM850 idle Mode/QP detector

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------------|----------------------|-------------|-------------|-----|---------------|
| 37.372000       | 15.96                    | 30.00                | 14.04       | 114.0       | V   | 300.0         |
| 47.192000       | 11.18                    | 30.00                | 18.82       | 109.0       | V   | -10.0         |
| 94.186000       | 13.52                    | 33.50                | 20.00       | 125.0       | V   | 254.0         |
| 120.575000      | 11.84                    | 33.50                | 21.68       | 182.0       | V   | -25.0         |
| 169.583000      | 24.98                    | 33.50                | 8.54        | 100.0       | V   | -30.0         |
| 242.264000      | 14.20                    | 36.00                | 21.82       | 320.0       | H   | 81.0          |

##### EUT1 Charger1+Camera+GNSS+GSM850 idle Mode /Average detector

| Frequency (MHz) | Result (dB $\mu$ V/m) | $G_{\text{PL}}$ (dB) | $G_A$ (dB/m) | $P_{\text{Mea}}$ (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|--------------|-------------------------------|----------|----------------------|-------------|
| 17938.233       | 48.7                  | -17.7                | 45.6         | 20.800                        | H        | 54                   | 5.3         |
| 17966.000       | 48.3                  | -17.7                | 45.6         | 20.400                        | H        | 54                   | 5.7         |
| 17997.733       | 48.1                  | -17.7                | 45.6         | 20.200                        | V        | 54                   | 5.9         |
| 17963.733       | 47.9                  | -17.7                | 45.6         | 20.000                        | H        | 54                   | 6.1         |
| 17935.967       | 47.9                  | -17.7                | 45.6         | 20.000                        | H        | 54                   | 6.1         |
| 17984.133       | 47.8                  | -17.7                | 45.6         | 19.900                        | H        | 54                   | 6.2         |

##### EUT1 Charger1+Camera+GNSS+GSM850 idle Mode /Peak detector

| Frequency (MHz) | Result (dB $\mu$ V/m) | $G_{\text{PL}}$ (dB) | $G_A$ (dB/m) | $P_{\text{Mea}}$ (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|--------------|-------------------------------|----------|----------------------|-------------|
| 17983.567       | 57.2                  | -17.7                | 45.6         | 29.300                        | H        | 74                   | 16.8        |
| 17993.767       | 57.2                  | -17.7                | 45.6         | 29.300                        | H        | 74                   | 16.8        |
| 17944.467       | 56.5                  | -17.7                | 45.6         | 28.600                        | V        | 74                   | 17.5        |
| 17968.267       | 56.5                  | -17.7                | 45.6         | 28.600                        | H        | 74                   | 17.5        |
| 17857.767       | 56.5                  | -18.5                | 45.6         | 29.400                        | H        | 74                   | 17.5        |
| 17685.500       | 56.4                  | -18.9                | 45.6         | 29.700                        | H        | 74                   | 17.6        |

**Measurement results for Set.2:**
**EUT1 Charger2+MP4+WCDMA850 idle Mode/QP detector**

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------------|----------------------|-------------|-------------|-----|---------------|
| 41.755000       | 17.34                    | 30.00                | 12.66       | 177.0       | V   | 30.0          |
| 53.548000       | 15.06                    | 30.00                | 14.94       | 101.0       | V   | -17.0         |
| 100.256000      | 8.66                     | 33.50                | 24.86       | 112.0       | V   | 266.0         |
| 156.779000      | 13.88                    | 33.50                | 19.64       | 213.0       | V   | -7.0          |
| 163.181000      | 15.83                    | 33.50                | 17.69       | 221.0       | V   | -3.0          |
| 375.228000      | 12.66                    | 36.00                | 23.36       | 100.0       | V   | 120.0         |

**EUT1 Charger2+MP4+WCDMA850 idle Mode/Average detector**

| Frequency (MHz) | Result (dB $\mu$ V/m) | G <sub>PL</sub> (dB) | G <sub>A</sub> (dB/m) | P <sub>Mea</sub> (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|-----------------------|-------------------------------|----------|----------------------|-------------|
| 17943.900       | 49.0                  | -17.7                | 45.6                  | 21.100                        | H        | 54                   | 5           |
| 17868.533       | 48.9                  | -18.5                | 45.6                  | 21.800                        | H        | 54                   | 5.1         |
| 17966.567       | 48.5                  | -17.7                | 45.6                  | 20.600                        | V        | 54                   | 5.5         |
| 17926.333       | 48.4                  | -17.7                | 45.6                  | 20.500                        | H        | 54                   | 5.6         |
| 17953.533       | 48.2                  | -17.7                | 45.6                  | 20.300                        | H        | 54                   | 5.8         |
| 17855.500       | 48.2                  | -18.5                | 45.6                  | 21.100                        | H        | 54                   | 5.8         |

**EUT1 Charger2+MP4+WCDMA850 idle Mode/Peak detector**

| Frequency (MHz) | Result (dB $\mu$ V/m) | G <sub>PL</sub> (dB) | G <sub>A</sub> (dB/m) | P <sub>Mea</sub> (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|-----------------------|-------------------------------|----------|----------------------|-------------|
| 17905.367       | 57.0                  | -18.5                | 45.6                  | 29.900                        | H        | 74                   | 17          |
| 17921.233       | 56.2                  | -17.7                | 45.6                  | 28.300                        | H        | 74                   | 17.8        |
| 17960.333       | 56.2                  | -17.7                | 45.6                  | 28.300                        | V        | 74                   | 17.8        |
| 17993.767       | 56.2                  | -17.7                | 45.6                  | 28.300                        | H        | 74                   | 17.8        |
| 17931.433       | 56.2                  | -17.7                | 45.6                  | 28.300                        | H        | 74                   | 17.8        |
| 17990.933       | 56.1                  | -17.7                | 45.6                  | 28.200                        | H        | 74                   | 17.9        |

**Measurement results for Set.3:**
**EUT1 USB TO PC + FM + LTE Band5 idle Mode/QP detector**

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------------|----------------------|-------------|-------------|-----|---------------|
| 34.092000       | 21.99                    | 30.00                | 8.01        | 214.0       | V   | 210.0         |
| 58.883000       | 15.18                    | 30.00                | 14.82       | 125.0       | V   | 288.0         |
| 84.029000       | 21.86                    | 30.00                | 8.14        | 275.0       | V   | 269.0         |
| 216.046000      | 25.61                    | 36.00                | 10.41       | 104.0       | V   | 184.0         |
| 240.065000      | 26.19                    | 36.00                | 9.83        | 325.0       | H   | 13.0          |
| 480.348000      | 24.64                    | 36.00                | 11.38       | 225.0       | V   | 8.0           |

**EUT1 USB TO PC + FM + LTE Band5 idle Mode /Average detector**

| Frequency (MHz) | Result (dB $\mu$ V/m) | G <sub>PL</sub> (dB) | G <sub>A</sub> (dB/m) | P <sub>Mea</sub> (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|-----------------------|-------------------------------|----------|----------------------|-------------|
| 17950.133       | 48.8                  | -17.7                | 45.6                  | 20.900                        | H        | 54                   | 5.2         |
| 17932.000       | 48.7                  | -17.7                | 45.6                  | 20.800                        | H        | 54                   | 5.3         |
| 17942.767       | 48.4                  | -17.7                | 45.6                  | 20.500                        | V        | 54                   | 5.6         |
| 17899.700       | 48.4                  | -18.5                | 45.6                  | 21.300                        | H        | 54                   | 5.6         |
| 17871.367       | 48.3                  | -18.5                | 45.6                  | 21.200                        | H        | 54                   | 5.7         |
| 17722.900       | 48.2                  | -18.9                | 45.6                  | 21.500                        | H        | 54                   | 5.8         |

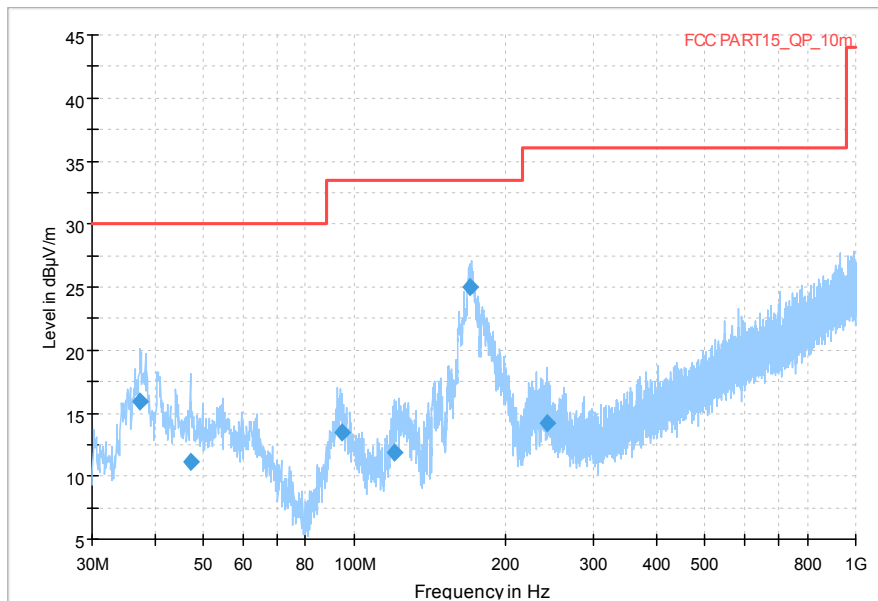
**EUT1 USB TO PC + FM + LTE Band5 idle Mode /Peak detector**

| Frequency (MHz) | Result (dB $\mu$ V/m) | G <sub>PL</sub> (dB) | G <sub>A</sub> (dB/m) | P <sub>Mea</sub> (dB $\mu$ V) | Polarity | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|-----------------------|----------------------|-----------------------|-------------------------------|----------|----------------------|-------------|
| 17950.133       | 57.5                  | -17.7                | 45.6                  | 29.600                        | H        | 74                   | 16.5        |
| 17946.733       | 57.0                  | -17.7                | 45.6                  | 29.100                        | H        | 74                   | 17          |
| 17962.600       | 57.0                  | -17.7                | 45.6                  | 29.100                        | V        | 74                   | 17          |
| 17898.567       | 56.9                  | -18.5                | 45.6                  | 29.800                        | H        | 74                   | 17.1        |
| 17999.433       | 56.6                  | -17.7                | 45.6                  | 28.700                        | H        | 74                   | 17.4        |
| 17965.433       | 56.5                  | -17.7                | 45.6                  | 28.600                        | H        | 74                   | 17.5        |



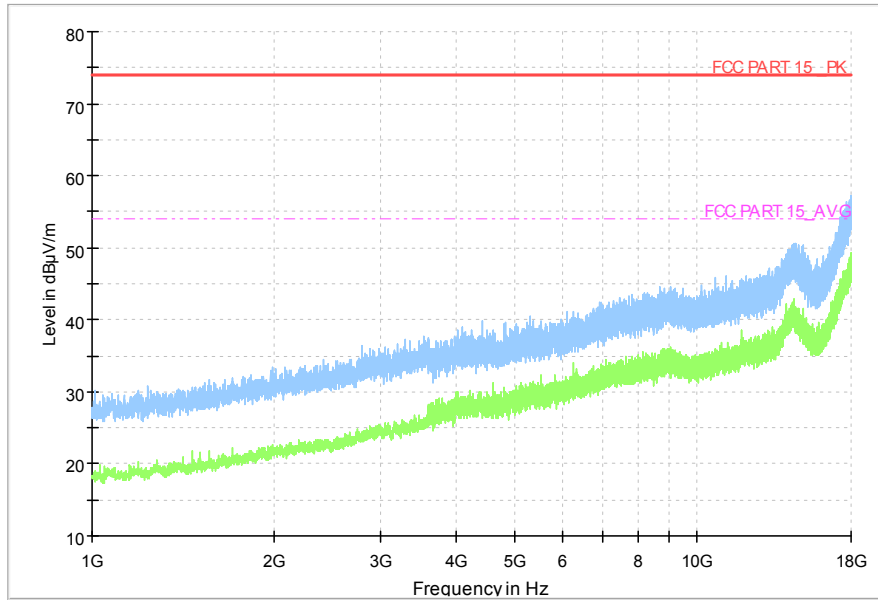
**EUT1 Charger1+Camera+GNSS+GSM850 IDLE,Set.1**

Full Spectrum



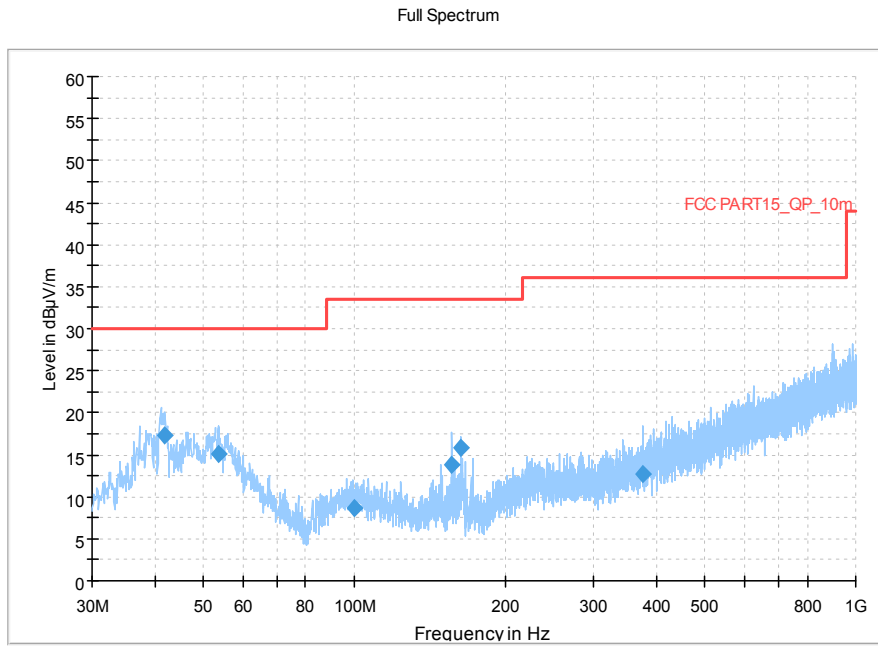
**Figure A.1 Radiated Emission from 30MHz to 1GHz**

Full Spectrum

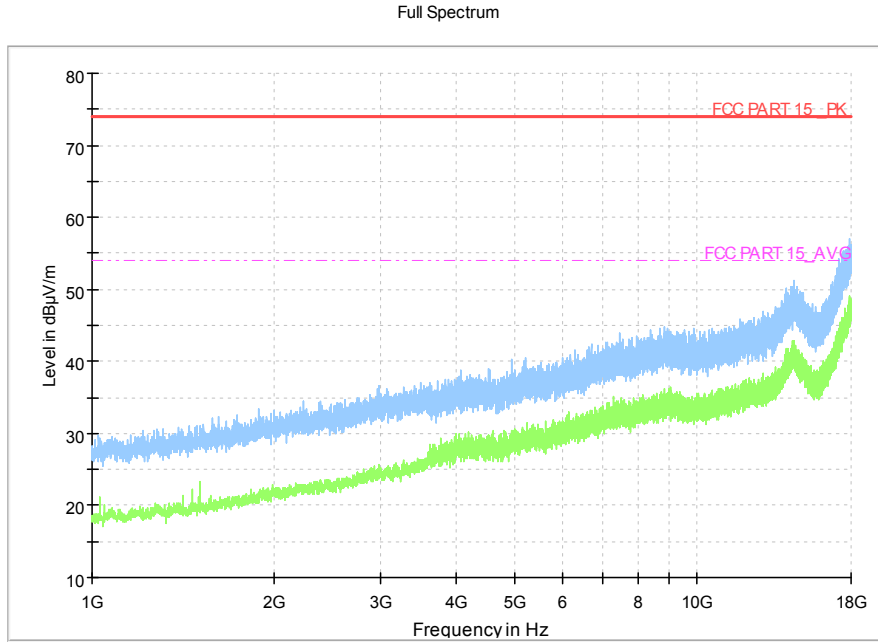


**Figure A.2 Radiated Emission from 1GHz to 18GHz**

**EUT1 Charger2+MP4+WCDMA850 IDLE,Set.2**

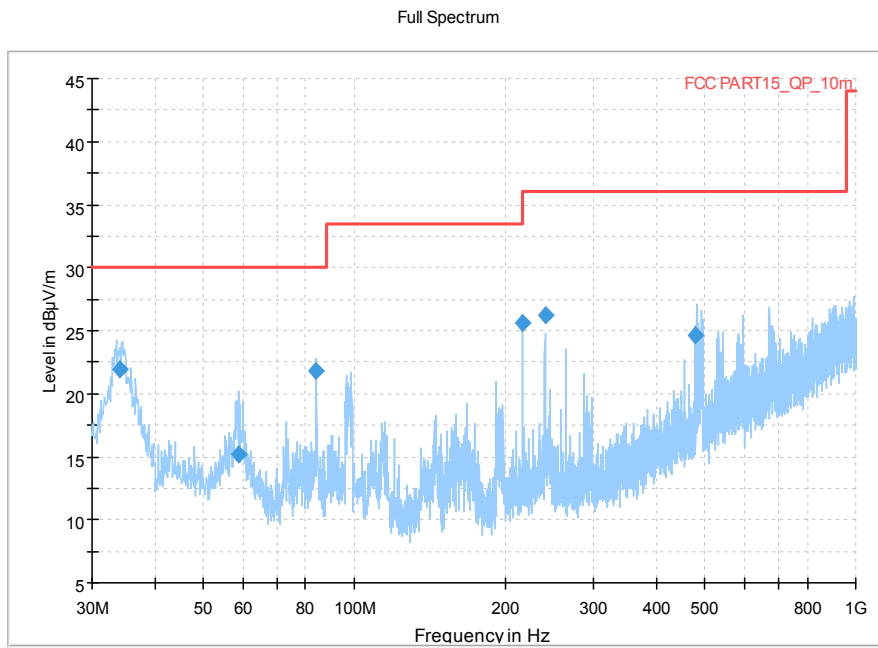


**Figure A.3 Radiated Emission from 30MHz to 1GHz**

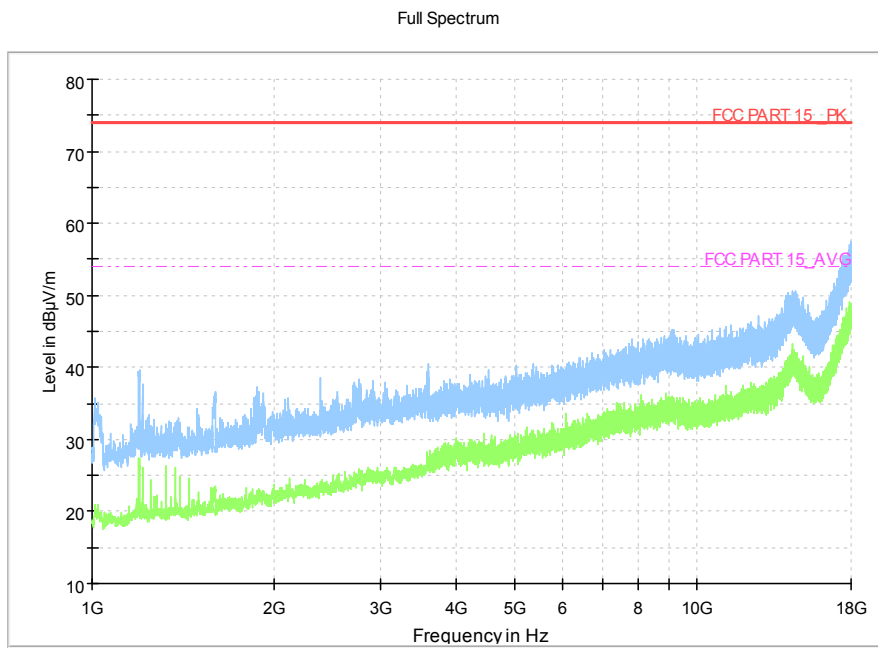


**Figure A.4 Radiated Emission from 1GHz to 18GHz**

**EUT1 USB TO PC + FM +LTE Band5 IDLE,Set.3**



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



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

## A.2 Conducted Emission

### Reference

FCC: CFR Part 15.107(a).

### A.2.1 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.

### A.2.2 EUT Operating Mode

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging mode.

### A.2.3 Measurement Limit

| Frequency of emission (MHz) | Conducted limit (dB $\mu$ V) |           |
|-----------------------------|------------------------------|-----------|
|                             | 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

### A.2.4 Test Condition in charging mode

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

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

### A.2.5 Measurement Results

Measurement uncertainty:  $U=3.08\text{dB}$ ,  $k=2$ .

Note: The measurement results showed here are worst cases of the combinations of different Battery, cables and Headset.

#### EUT1 Charger1+Camera+GNSS+GSM850 IDLE,Set.1

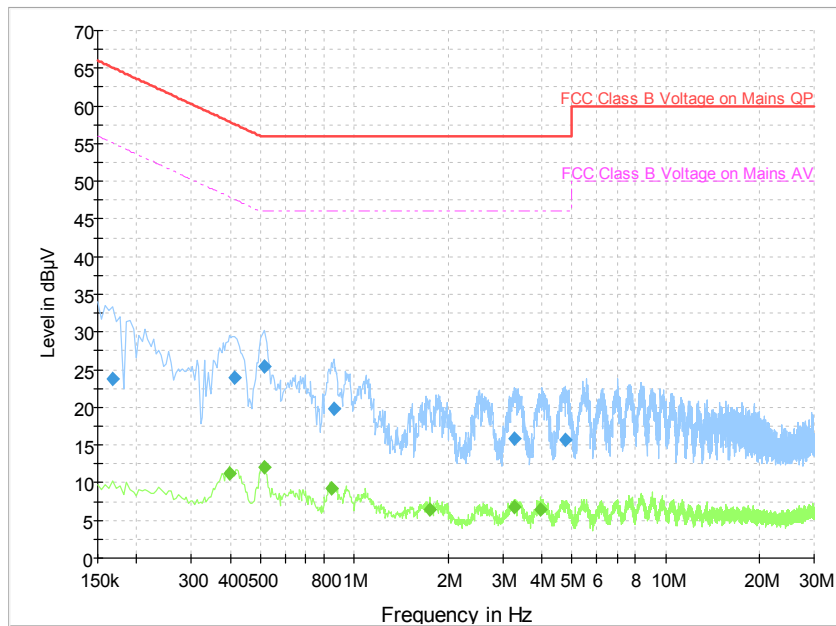


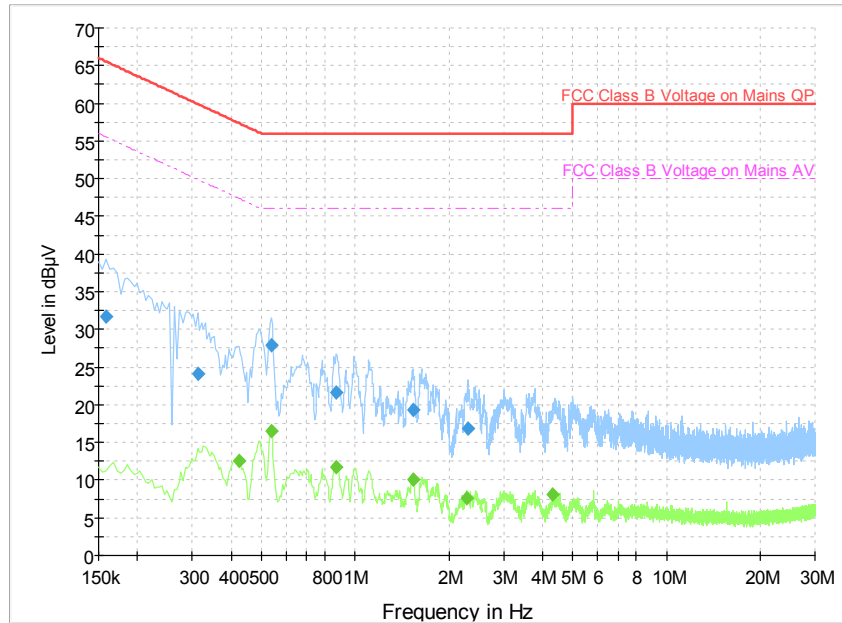
Figure A.13 Conducted Emission

#### Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|------------------|------|------------|-------------|--------------|
| 0.168000        | 23.7             | L1   | 19.7       | 41.4        | 65.1         |
| 0.411000        | 23.9             | L1   | 19.6       | 33.7        | 57.6         |
| 0.514500        | 25.4             | L1   | 19.6       | 30.6        | 56.0         |
| 0.861000        | 19.8             | N    | 19.5       | 36.2        | 56.0         |
| 3.277500        | 15.9             | L1   | 19.7       | 40.2        | 56.0         |
| 4.771500        | 15.7             | L1   | 19.8       | 40.3        | 56.0         |

#### Final Result 2

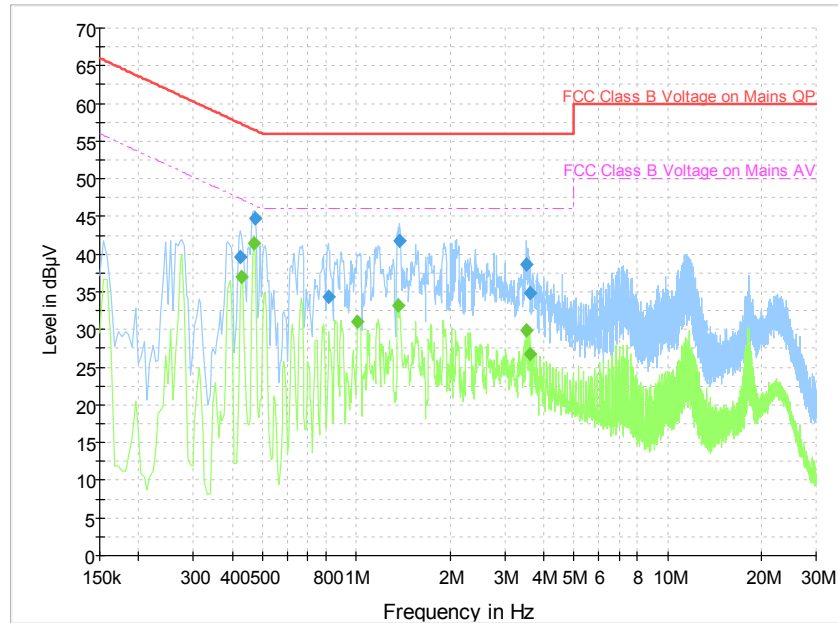
| Frequency (MHz) | Average (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|------|------------|-------------|--------------|
| 0.397500        | 11.3           | L1   | 19.6       | 36.6        | 47.9         |
| 0.514500        | 12.0           | N    | 19.5       | 34.0        | 46.0         |
| 0.843000        | 9.3            | L1   | 19.6       | 36.7        | 46.0         |
| 1.756500        | 6.4            | N    | 19.5       | 39.6        | 46.0         |
| 3.259500        | 6.8            | L1   | 19.7       | 39.2        | 46.0         |
| 3.975000        | 6.5            | N    | 19.7       | 39.5        | 46.0         |

**EUT1 Charger2+MP4+WCDMA850 IDLE,Set.2**

**Figure A.14 Conducted Emission**
**Final Result 1**

| Frequency (MHz) | Average (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|------|------------|-------------|--------------|
| 0.159000        | 31.7           | L1   | 19.7       | 33.8        | 65.5         |
| 0.312000        | 24.1           | N    | 19.6       | 35.8        | 59.9         |
| 0.537000        | 28.0           | L1   | 19.6       | 28.0        | 56.0         |
| 0.870000        | 21.7           | N    | 19.5       | 34.3        | 56.0         |
| 1.531500        | 19.3           | L1   | 19.6       | 36.7        | 56.0         |
| 2.301000        | 16.8           | N    | 19.6       | 39.2        | 56.0         |

**Final Result 2**

| Frequency (MHz) | Average (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|------|------------|-------------|--------------|
| 0.424500        | 12.6           | N    | 19.6       | 34.8        | 47.4         |
| 0.537000        | 16.5           | N    | 19.5       | 29.5        | 46.0         |
| 0.865500        | 11.6           | L1   | 19.6       | 34.4        | 46.0         |
| 1.531500        | 10.1           | L1   | 19.6       | 35.9        | 46.0         |
| 2.287500        | 7.7            | N    | 19.6       | 38.3        | 46.0         |
| 4.317000        | 8.1            | N    | 19.7       | 37.9        | 46.0         |

**EUT2 USB TO PC + FM + LTE Band5 IDLE ,Set.3**

**Figure A.15 Conducted Emission**
**Final Result 1**

| Frequency (MHz) | Average (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|------|------------|-------------|--------------|
| 0.424500        | 39.6           | L1   | 19.6       | 17.7        | 57.4         |
| 0.474000        | 44.7           | L1   | 19.6       | 11.8        | 56.4         |
| 0.811500        | 34.3           | L1   | 19.6       | 21.7        | 56.0         |
| 1.378500        | 41.8           | N    | 19.6       | 14.2        | 56.0         |
| 3.511500        | 38.6           | L1   | 19.7       | 17.4        | 56.0         |
| 3.615000        | 34.8           | N    | 19.6       | 21.2        | 56.0         |

**Final Result 2**

| Frequency (MHz) | Average (dBµV) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|------|------------|-------------|--------------|
| 0.429000        | 37.0           | N    | 19.6       | 10.2        | 47.3         |
| 0.469500        | 41.5           | N    | 19.6       | 5.1         | 46.5         |
| 1.009500        | 31.0           | L1   | 19.6       | 15.0        | 46.0         |
| 1.360500        | 33.2           | N    | 19.6       | 12.8        | 46.0         |
| 3.511500        | 29.9           | L1   | 19.7       | 16.1        | 46.0         |
| 3.615000        | 26.8           | N    | 19.6       | 19.2        | 46.0         |



**ANNEX B: Persons involved in this testing**

| Test Item                     | Tester      |
|-------------------------------|-------------|
| Conducted Continuous Emission | Wang Huan   |
| Radiated Continuous Emission  | Yan Hanchen |

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