# **Variant FCC Test Report**

APPLICANT : Motorola Mobility LLC EQUIPMENT : Mobile Cellular Phone

BRAND NAME : Motorola

MODEL NAME : 9843

FCC ID : IHDT56VE5

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

**CLASSIFICATION**: Certification

This is a variant report which is only valid together with the original test report. The product was received on Dec. 10, 2016 and testing was completed on Dec. 20, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

lac-MRA



Report No.: FC6O1212-14

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (KUNSHAN) INC. No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China

SPORTON INTERNATIONAL (KUNSHAN) INC.

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## **REVISION HISTORY**

| REPORT NO.  | VERSION | DESCRIPTION  | ISSUED DATE   |
|-------------|---------|--|---------------|
| FC6O1212-14 | Rev. 01 | This is a variant report for 9843. For model change note, please refer the product equality declaration exhibit submitted. Based on the similarity between current and previous project, only the worst case from original test report (Sporton Report Number FC6O1212-09) was verified for the differences. | Jan. 13, 2017 |
|             |         |  |               |
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### **SUMMARY OF TEST RESULT**

| Report<br>Section | FCC Rule | Description           | Result          | Remark |             |
|-------------------|----------|-----------------------|-----------------|--------|-------------|
|                   |          |                       |                 |        | Under limit |
| 3.1               | 15.107   | AC Conducted Emission | < 15.107 limits | PASS   | 12.06 dB at |
|                   |          |                       |                 |        | 0.484 MHz   |
|                   |          |                       |                 |        | Under limit |
| 3.2               | 15.109   | Radiated Emission     | < 15.109 limits | PASS   | 5.62 dB at  |
|                   |          |                       |                 |        | 40.670 MHz  |

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# 1. General Description

## 1.1. Applicant

**Motorola Mobility LLC** 

222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

#### 1.2. Manufacturer

**Motorola Mobility LLC** 

222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.3. Product Feature of Equipment Under Test

|                                 | Product Feature                                      |
|---------------------------------|--|
| Equipment                       | Mobile Cellular Phone                                |
| Brand Name                      | Motorola   |
| Model Name                      | 9843   |
| FCC ID                          | IHDT56VE5  |
|                                 | GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/                  |
|                                 | HSPA+(16QAM uplink is not supported)/LTE/NFC/        |
| EUT supports Radios application | WLAN2.4GHz 802.11b/g/n HT20/                         |
|                                 | WLAN5GHz 802.11a/n HT20/HT40/                        |
|                                 | Bluetooth v3.0+EDR/Bluetooth v4.2 LE                 |
| IMEL Code                       | Conduction: 358958060032338/358958060032346          |
| IMEI Code                       | Radiation: 358958060031934/358958060031942           |
| HW Version                      | DVT2   |
| SW Version                      | potter_oem_userdebug_7.0_NPN25.124_1787_intcfg-test- |
| SVV Version                     | keys_oem   |
| EUT Stage                       | Identical Prototype                                  |

Remark:

The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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# 1.4. Product Specification of Equipment Under Test

| Standards-related Product Specification |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| Standards                               | ·  |  |  |  |  |  |  |
|   | GSM850: 824.2 MHz ~ 848.8 MHz<br>GSM1900: 1850.2 MHz ~ 1909.8MHz |  |  |  |  |  |  |
|   | WCDMA Band V: 826.4 MHz ~ 846.6 MHz                              |  |  |  |  |  |  |
|   | LTE Band 5 : 824.7 MHz ~ 848.3 MHz                               |  |  |  |  |  |  |
| Tx Frequency                            | 802.11b/g/n: 2412 MHz ~ 2462 MHz                                 |  |  |  |  |  |  |
| TX Trequency                            | 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz;             |  |  |  |  |  |  |
|   | 5500MHz ~ 5720 MHz ; 5745 MHz ~ 5825 MHz                         |  |  |  |  |  |  |
|   | Bluetooth: 2402 MHz ~ 2480 MHz                                   |  |  |  |  |  |  |
|   | NFC : 13.56 MHz  |  |  |  |  |  |  |
|   | GSM850: 869.2 MHz ~ 893.8 MHz                                    |  |  |  |  |  |  |
|   | GSM1900: 1930.2 MHz ~ 1989.8 MHz                                 |  |  |  |  |  |  |
|   | WCDMA Band V: 871.4 MHz ~ 891.6 MHz                              |  |  |  |  |  |  |
|   | LTE Band 5 : 869.7 MHz ~ 893.3 MHz                               |  |  |  |  |  |  |
|   | 802.11b/g/n: 2412 MHz ~ 2462 MHz                                 |  |  |  |  |  |  |
|   | 802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz;             |  |  |  |  |  |  |
| Rx Frequency                            | 5500MHz ~ 5720 MHz ; 5745 MHz ~ 5825 MHz                         |  |  |  |  |  |  |
|   | Bluetooth: 2402 MHz ~ 2480 MHz                                   |  |  |  |  |  |  |
|   | GPS : 1.57542 GHz  |  |  |  |  |  |  |
|   | Glonass: 1602 MHz + n× 0.5625MHz (n=-7,-6,-5,0,,6)               |  |  |  |  |  |  |
|   | FM : 88 MHz ~ 108 MHz  |  |  |  |  |  |  |
|   | NFC: 13.56 MHz   |  |  |  |  |  |  |
|   | WWAN: Fixed Internal Antenna                                     |  |  |  |  |  |  |
|   | WLAN 2.4GHz: Loop Antenna  |  |  |  |  |  |  |
|   | WLAN 5GHz: Loop Antenna  |  |  |  |  |  |  |
| Antenna Type                            | Bluetooth: Loop Antenna  |  |  |  |  |  |  |
|   | GPS/Glonass: Loop Antenna  |  |  |  |  |  |  |
|   | FM: External headset Antenna                                     |  |  |  |  |  |  |
|   | NFC: Loop Antenna  |  |  |  |  |  |  |
|   | GSM: GMSK  |  |  |  |  |  |  |
|   | GPRS: GMSK   |  |  |  |  |  |  |
|   | EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK                            |  |  |  |  |  |  |
|   | WCDMA: BPSK (Uplink)   |  |  |  |  |  |  |
|   | HSDPA/DC-HSDPA: QPSK (Uplink)                                    |  |  |  |  |  |  |
|   | HSUPA: QPSK (Uplink)   |  |  |  |  |  |  |
|   | HSPA+: 16QAM (Uplink is not supported)                           |  |  |  |  |  |  |
|   | DC-HSDPA: 64QAM  |  |  |  |  |  |  |
| Type of Modulation                      | LTE: QPSK / 16QAM  |  |  |  |  |  |  |
| "                                       | 802.11b: DSSS (DBPSK / DQPSK / CCK)                              |  |  |  |  |  |  |
|   | 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)                  |  |  |  |  |  |  |
|   | Bluetooth LE : GFSK  |  |  |  |  |  |  |
|   | Bluetooth (1Mbps): GFSK  |  |  |  |  |  |  |
|   | Bluetooth (2Mbps) : π /4-DQPSK                                   |  |  |  |  |  |  |
|   | Bluetooth (3Mbps): 8-DPSK  |  |  |  |  |  |  |
|   | GPS/Glonass : BPSK   |  |  |  |  |  |  |
|   | FM<br>NEC: ASK   |  |  |  |  |  |  |
|   | NFC: ASK   |  |  |  |  |  |  |

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# 1.5. Specification of Accessory

| Specification of Accessory |                   |   |                             |                         |  |  |  |  |  |
|----------------------------|-------------------|---|-----------------------------|-------------------------|--|--|--|--|--|
|                            | Brand Name        | Motorola(Salom)                                     | Model Name                  | SSW-2680IN              |  |  |  |  |  |
| AC Adapter                 | Power Rating      | I/P: 100-240 Vac, 500m<br>12Vdc,1200mA              | A, O/P: 5 Vdc,10            | 600mA or 9Vdc,1600mA or |  |  |  |  |  |
|                            | Brand Name        | Motorola(Amperex)                                   | Model Name                  | HG40                    |  |  |  |  |  |
| Battery                    | Power Rating      | 3.8Vdc,2810/3000mAh<br>(Min/Typ)                    | Туре                        | Li-ion                  |  |  |  |  |  |
| USB Cable                  | <b>Brand Name</b> | Motorola  | Model Name                  | SKN6461A                |  |  |  |  |  |
| USB Cable                  | Signal Line Type  | 1.0 meter, non-shielded                             | cable, without ferrite core |                         |  |  |  |  |  |
| Earphone                   | Brand Name        | Motorola<br>(Jiangxi Lianchuang)                    | Model Name                  | MEMD1532B080008         |  |  |  |  |  |
|                            | Signal Line Type  | 1.2 meter, non-shielded cable, without ferrite core |                             |                         |  |  |  |  |  |

### 1.6. Modification of EUT

No modifications are made to the EUT during all test items.

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#### 1.7. Test Location

| Test Site          | SPORTON INTERNATIONAL (KUNSHAN) INC.                            |                      |  |  |  |  |  |
|--------------------|---|----------------------|--|--|--|--|--|
|                    | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China |                      |  |  |  |  |  |
| Test Site Location | TEL: +86-0512-5790-0158   |                      |  |  |  |  |  |
|                    | FAX: +86-0512-5790-0958   |                      |  |  |  |  |  |
| Toot Site No       | Sportor   | FCC Registration No. |  |  |  |  |  |
| Test Site No.      | CO01-KS   | 418269               |  |  |  |  |  |

Note: The test site complies with ANSI C63.4 2014 requirement.

### 1.8. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014

#### Remark:

- All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. For FCC 15 Subpart B Unintentional Radiators, device supporting USB interface or similar peripherals (defined as the Section 15.3 (r) Peripheral device) acting as a peripheral for personal computers shall be authorized as "The Class B personal computers and peripherals" per the Section 15.101 (a) Equipment authorization of unintentional radiators.
- 3. For other Unintentional Radiators features of this EUT, test reports are be issued separately. Per the Note of the Section 15.101, when device supports features (USB, FM Radio, digital devices...etc) more than one category of authorization, type of authorization shall be appropriately chosen for FCC 15B compliance rule, and the Section 15.101 (b), only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of the Section 15.101. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure.

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# 2. Test Configuration of Equipment Under Test

#### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test mode recorded in this report.

|      |   | Test Co     | ndition     |
|------|---|-------------|-------------|
| Item | EUT Configuration                                     | ЕМІ         | EMI         |
|      |   | AC          | RE          |
| 1.   | Data application transferred mode (EUT with notebook) | $\boxtimes$ | $\boxtimes$ |

#### Abbreviations:

EMI AC: AC conducted emissions

• EMI RE: EUT radiated emissions

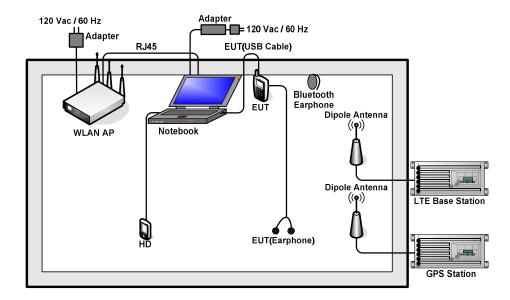
| Test Items               | EUT<br>Configure<br>Mode | Function Type  |
|--------------------------|--------------------------|--|
| AC Conducted<br>Emission | 1                        | Mode 1: LTE Band 5 Idle + Bluetooth Idle + WLAN(2.4G) Idle + Earphone + USB Cable(Data Link with Notebook) + GPS Rx + SIM1 |
| Radiated<br>Emissions    | 1                        | Mode 1: LTE Band 5 Idle + Bluetooth Idle + WLAN(2.4G) Idle + Earphone + USB Cable(Data Link with Notebook) + GPS Rx + SIM1 |

**Remark:** Data Link with Notebook means data application transferred mode between EUT and Notebook.

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# 2.2. Connection Diagram of Test System



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### 2.3. Support Unit used in test configuration and system

| Item | Equipment             | Trade Name | Model Name | FCC ID         | Data Cable      | Power Cord   |
|------|-----------------------|------------|------------|----------------|-----------------|--|
| 1.   | LTE Base Station      | Anritsu    | MT8820C    | N/A            | N/A             | Unshielded, 1.8 m  |
| 2.   | GPS Station           | ADIVIC     | MP9000     | N/A            | N/A             | Unshielded, 1.8 m  |
| 3.   | WLAN AP               | LINKSYS    | WRT600N    | Q87-WRT600NV11 | N/A             | Unshielded, 1.8 m  |
| 4.   | WLAN AP               | D-link     | DIR-855    | KA2DIR855A2    | N/A             | Unshielded, 1.8 m  |
| 5.   | Notebook              | Lenovo     | G480       | N/A            | N/A             | AC I/P:<br>Unshielded, 1.8 m<br>DC O/P:<br>Shielded, 1.8 m |
| 6.   | Bluetooth<br>Earphone | Lenovo     | LBH308     | QTLBH-106      | N/A             | N/A  |
| 7.   | Bluetooth<br>Earphone | Lenovo     | LBH301     | QTLBH-106      | N/A             | N/A  |
| 8.   | SD Card               | Kingston   | 4GB        | N/A            | N/A             | N/A  |
| 9.   | Hard Disk             | Lenovo     | F310       | FCC DoC        | Shielded, 0.5 m | N/A  |

### 2.4. EUT Operation Test Setup

The EUT was in LTE idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

The EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

- 1. Data application is transferred between notebook and EUT via USB cable.
- 2. Turn on GPS function to make the EUT receive continuous signals from GPS station.

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#### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

#### 3.1.1 Limits of AC Conducted Emission

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 in the following table.

| Frequency of emission | Conducted limit (dBuV) |           |  |  |  |  |
|-----------------------|------------------------|-----------|--|--|--|--|
| (MHz)                 | Quasi-peak             | Average   |  |  |  |  |
| 0.15-0.5              | 66 to 56*              | 56 to 46* |  |  |  |  |
| 0.5-5                 | 56                     | 46        |  |  |  |  |
| 5-30                  | 60                     | 50        |  |  |  |  |

<sup>\*</sup>Decreases with the logarithm of the frequency.

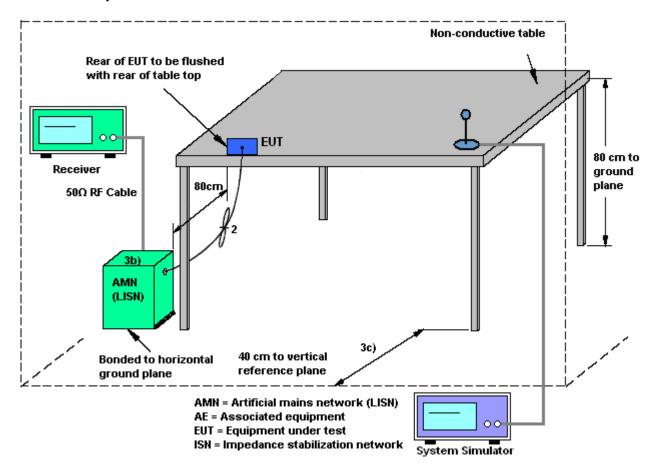
#### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.1.3 Test Procedure

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

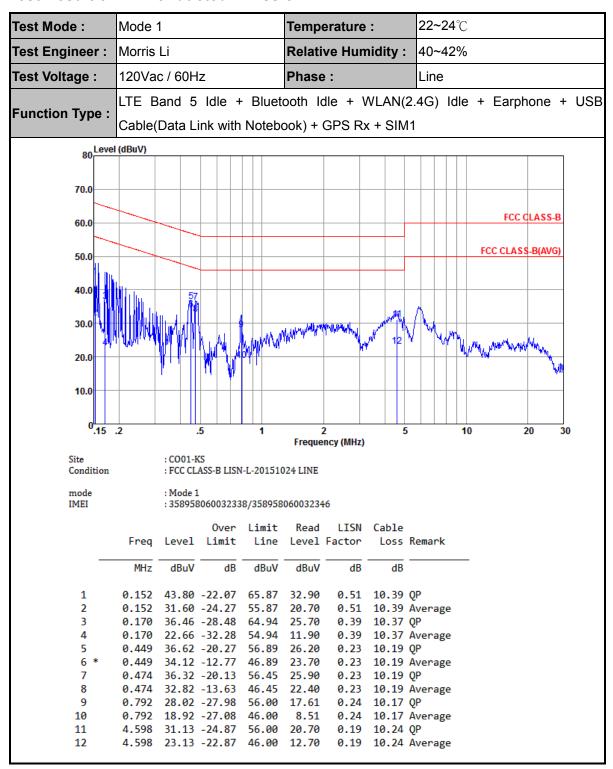
#### 3.1.4 Test Setup



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#### 3.1.5 Test Result of AC Conducted Emission



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|                 | 1                 |  |                  |           |                     |                 |  |         |            |                                       |           |   |
|-----------------|-------------------|--|------------------|-----------|---------------------|-----------------|--|---------|------------|---------------------------------------|-----------|---|
| Test Mode :     | Mode 1            |  |                  |           | Temp                | erature         | :  | 22~2    | <b>4</b> ℃ |                                       |           |   |
| Test Engineer : | Morris Li         |  |                  | Relati    | Relative Humidity : |                 |  | 40~42%  |            |                                       |           |   |
| Test Voltage :  | 120Vac            | / 60H  | Z                |           | Phase               | <b>:</b>        |  | Neuti   | ral        |                                       |           |   |
| F               | LTE B             | TE Band 5 Idle + Bluetooth Idle + WLAN(2.4G) Idle + Earphone + USB |                  |           |                     |                 |  |         |            |                                       |           |   |
| Function Type : | Cable([           | Data Li  | nk with          | Notebo    | ook) +              | GPS R           | c + SIM  | 1       |            |                                       |           |   |
| 80 Level        | (dBuV)            |  |                  |           |                     |                 |  |         |            |                                       |           |   |
|                 |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
| 70.0            |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
| 60.0            |                   |  |                  |           |                     |                 |  |         |            | FCC                                   | CLASS-B   |   |
| _               |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
| 50.0            |                   |  |                  |           |                     |                 |  |         |            | FCC CLA                               | SS-B(AVG) |   |
| 40.0            |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
| 40.0            |                   | أاران  |                  |           |                     | H .dilat II     | Harlana.   | hH      |            |                                       |           |   |
| 30.0            | 474447            | ₩₩   | A Musel          | (MAAAAAA) | deliberation of the | THE WITH WITH   | WATER TO THE STATE OF THE STATE | 11 %    | Mi i       | · · · · · · · · · · · · · · · · · · · | 111       |   |
| 20.0            | יין איין דיין דיי |  |                  | ן וויי    |                     |                 |  | 12 7    | Įγ         | "The state of the state of            | AMILY .   |   |
| 20.0            |                   |  |                  |           |                     |                 |  |         |            |                                       | MM        |   |
| 10.0            |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
|                 |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |
| 0.15            | .2                |  | 5                | 1         |                     | 2<br>ency (MHz) | 5  |         | 10         |                                       | 20 3      | 0 |
| Site            |                   | : CO01-K   |                  |           |                     |                 |  |         |            |                                       |           |   |
| Condition       |                   |  | ASS-B LISN       | -N-20151  | 024 NEUT            | RAL             |  |         |            |                                       |           |   |
| mode<br>IMEI    |                   | : Mode 1<br>: 358958   | 06003233         | 8/358958  | 06003234            | 46              |  |         |            |                                       |           |   |
|                 |                   |  | 0ver             | Limit     | Read                | LISN            | Cable  |         |            |                                       |           |   |
|                 | Freq              | Level  | Limit            | Line      | Level               | Factor          | Loss I   | Remark  |            |                                       |           |   |
|                 | MHz               | dBuV   | dB               | dBuV      | dBuV                | dB              | dB   |         |            |                                       |           |   |
| 1               | 0.151             | 43.49  | -22.47           | 65.96     | 32.80               | 0.30            | 10.39 (  | QP      |            |                                       |           |   |
| 2               |                   |  | -25.67           |           |                     |                 | 10.39  |         | 2          |                                       |           |   |
| 3               |                   |  | -28.37           |           |                     |                 | 10.37  |         |            |                                       |           |   |
| 4               |                   |  | -32.37           |           |                     |                 | 10.37  |         | 2          |                                       |           |   |
| 5               |                   |  | -29.88           |           |                     |                 | 10.34  |         |            |                                       |           | ļ |
| 6<br>7          |                   |  | -31.58<br>-19.46 |           |                     |                 | 10.34 /<br>10.19 (   |         | •          |                                       |           |   |
| 8 *             |                   |  | -19.46           |           |                     |                 | 10.19  |         |            |                                       |           | ļ |
| 9               |                   |  | -26.28           |           |                     |                 |  | _       | •          |                                       |           | ļ |
| 10              |                   |  | -21.98           |           |                     |                 | 10.17  | _       | 2          |                                       |           |   |
| 11              | 5.594             | 30.19  | -29.81           | 60.00     | 19.60               | 0.34            | 10.25 (  | QP      |            |                                       |           |   |
| 12              | 5.594             | 21.89  | -28.11           | 50.00     | 11.30               | 0.34            | 10.25  | Average | 2          |                                       |           |   |
| i .             |                   |  |                  |           |                     |                 |  |         |            |                                       |           |   |

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#### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency | Field Strength     | Measurement Distance |
|-----------|--------------------|----------------------|
| (MHz)     | (microvolts/meter) | (meters)             |
| 30 – 88   | 100                | 3                    |
| 88 – 216  | 150                | 3                    |
| 216 - 960 | 200                | 3                    |
| Above 960 | 500                | 3                    |

#### 3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.2.3. Test Procedures

- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
- 8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

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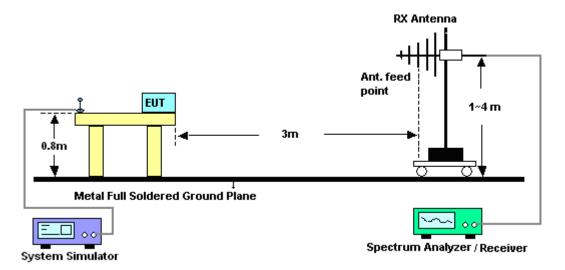
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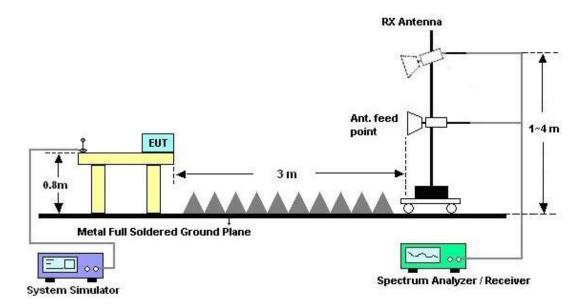
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### 3.2.4. Test Setup of Radiated Emission

#### For radiated emissions from 30MHz to 1GHz



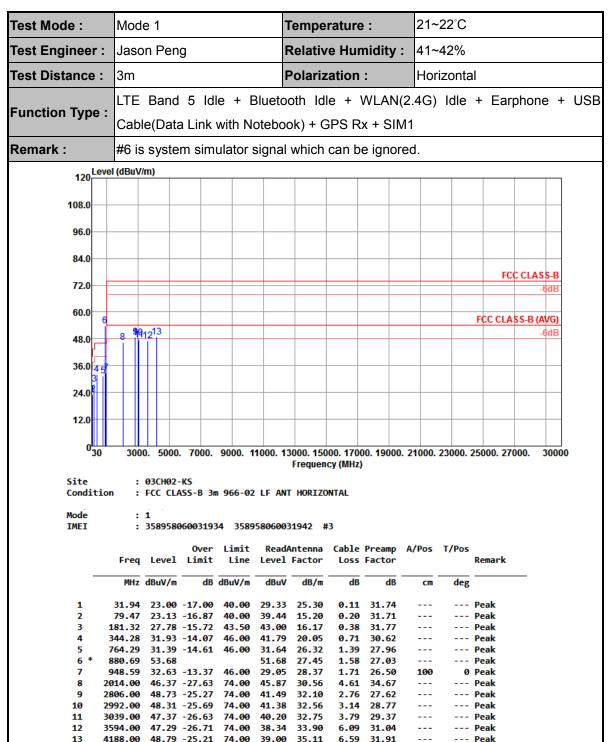
#### For radiated emissions above 1GHz



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#### 3.2.5. Test Result of Radiated Emission



13

4188.00 48.79 -25.21 74.00

39.00

35.11

6.59

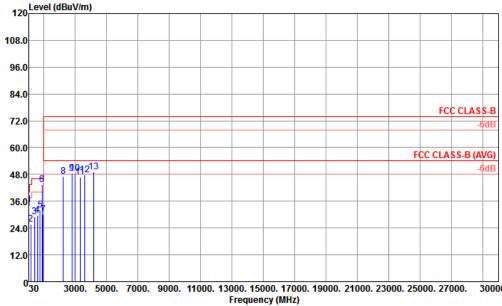
31.91

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| Test Mode :     | Mode 1  | Temperature :       | 21~22°C  |  |  |  |
|-----------------|---|---------------------|----------|--|--|--|
| Test Engineer : | Jason Peng  | Relative Humidity : | 41~42%   |  |  |  |
| Test Distance : | 3m  | Polarization :      | Vertical |  |  |  |
| Function Type   | LTE Band 5 Idle + Bluetooth Idle + WLAN(2.4G) Idle + Earphone |                     |          |  |  |  |
| Function Type : | Cable(Data Link with Notebook) + GPS Rx + SIM1                |                     |          |  |  |  |
| Remark :        | #6 is system simulator signal which can be ignored.           |                     |          |  |  |  |
| Level (dRuV/m)  |   |                     |          |  |  |  |



Site : 03CH02-KS

Condition : FCC CLASS-B 3m 966-02 LF ANT VERTICAL

Mode : 1

IMEI : 358958060031934 358958060031942 #3

|    |   | Freq    | Level  |        | Limit<br>Line |       |       |      |       |     |     | Remark |
|----|---|---------|--------|--------|---------------|-------|-------|------|-------|-----|-----|--------|
|    | - | MHz     | dBuV/m | dB     | dBuV/m        | dBuV  | dB/m  | dB   | dB    | cm  | deg |        |
| 1  | į | 40.67   | 34.38  | -5.62  | 40.00         | 44.59 | 21.50 | 0.13 | 31.84 | 100 | 0   | Peak   |
| 2  |   | 153.19  | 25.87  | -17.63 | 43.50         | 39.59 | 17.46 | 0.33 | 31.51 |     |     | Peak   |
| 3  |   | 401.51  | 29.04  | -16.96 | 46.00         | 33.37 | 25.28 | 0.93 | 30.54 |     |     | Peak   |
| 4  |   | 598.42  | 29.76  | -16.24 | 46.00         | 33.44 | 24.33 | 0.90 | 28.91 |     |     | Peak   |
| 5  |   | 765.26  | 31.99  | -14.01 | 46.00         | 32.24 | 26.32 | 1.39 | 27.96 |     |     | Peak   |
| 6  | ! | 881.66  | 43.49  |        |               | 41.48 | 27.45 | 1.59 | 27.03 |     |     | Peak   |
| 7  |   | 957.32  | 30.17  | -15.83 | 46.00         | 26.27 | 28.58 | 1.74 | 26.42 |     |     | Peak   |
| 8  |   | 2236.00 | 47.19  | -26.81 | 74.00         | 44.37 | 31.24 | 5.75 | 34.17 |     |     | Peak   |
| 9  |   | 2788.00 | 48.40  | -25.60 | 74.00         | 41.72 | 32.06 | 2.71 | 28.09 |     |     | Peak   |
| 10 |   | 2982.00 | 48.47  | -25.53 | 74.00         | 41.59 | 32.56 | 3.09 | 28.77 |     |     | Peak   |
| 11 |   | 3315.00 | 46.64  | -27.36 | 74.00         | 38.07 | 33.56 | 5.97 | 30.96 |     |     | Peak   |
| 12 |   | 3618.00 | 47.66  | -26.34 | 74.00         | 38.67 | 33.97 | 6.14 | 31.12 |     |     | Peak   |
| 13 |   | 4164.00 | 49.02  | -24.98 | 74.00         | 39.23 | 35.08 | 6.60 | 31.89 |     |     | Peak   |

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# 4. List of Measuring Equipment

| Instrument                        | Manufacturer | Model No.         | Serial No.   | Characteristics            | Calibration<br>Date | Test Date     | Due Date      | Remark                   |
|-----------------------------------|--------------|-------------------|--------------|----------------------------|---------------------|---------------|---------------|--------------------------|
| EMI Receiver                      | R&S          | ESCI7             | 100768       | 9kHz~7GHz;                 | Apr. 29, 2016       | Dec. 20, 2016 | Apr. 28, 2017 | Conduction<br>(CO01-KS)  |
| AC LISN                           | MessTec      | AN3016            | 060103       | 9kHz~30MHz                 | Oct. 13, 2016       | Dec. 20, 2016 | Oct. 12, 2017 | Conduction<br>(CO01-KS)  |
| AC LISN (for auxiliary equipment) | MessTec      | AN3016            | 060105       | 9kHz~30MHz                 | Oct. 13, 2016       | Dec. 20, 2016 | Oct. 12, 2017 | Conduction<br>(CO01-KS)  |
| AC Power<br>Source                | Chroma       | 61602             | ABP000000811 | AC 0V~300V,<br>45Hz~1000Hz | Oct. 13, 2016       | Dec. 20, 2016 | Oct. 12, 2017 | Conduction<br>(CO01-KS)  |
| EMI Test<br>Receiver              | R&S          | ESR7              | 101403       | 9kHz~7GHz;<br>Max 30dBm    | Aug. 09, 2016       | Dec. 19, 2016 | Aug. 08, 2017 | Radiation<br>(03CH02-KS) |
| EXA<br>Spectrum<br>Analyzer       | Keysight     | N9010A            | MY55150208   | 10Hz~44GHz;<br>Max 30dB    | Apr. 22, 2016       | Dec. 19, 2016 | Apr. 21, 2017 | Radiation<br>(03CH02-KS) |
| Bilog Antenna                     | TeseQ        | CBL6112D          | 37879        | 30MHz~2GHz                 | Aug. 20, 2016       | Dec. 19, 2016 | Aug. 19, 2017 | Radiation<br>(03CH02-KS) |
| Double Ridge<br>Horn Antenna      | ETS-Lindgren | 3117              | 75957        | 1GHz~18GHz                 | Oct. 22, 2016       | Dec. 19, 2016 | Oct. 21, 2017 | Radiation<br>(03CH02-KS) |
| SHF-EHF<br>Horn                   | Schwarzbeck  | BBHA 9170         | BBHA170249   | 15GHz~40GHz                | Mar. 03, 2016       | Dec. 19, 2016 | Mar. 02, 2017 | Radiation<br>(03CH02-KS) |
| Amplifier                         | com-power    | PA-103A           | 161069       | 1kHz~1000MHz<br>/ 32 dB    | Apr. 22, 2016       | Dec. 19, 2016 | Apr. 21, 2017 | Radiation<br>(03CH02-KS) |
| Amplifier                         | Agilent      | 8449B             | 3008A02384   | 1~26.5GHz<br>Gain 30dB     | Oct. 13, 2016       | Dec. 19, 2016 | Oct. 12, 2017 | Radiation (03CH02-KS)    |
| Amplifier                         | MITEQ        | TTA1840-35-H<br>G | 1887435      | 18GHz~40GHz                | Jan. 20, 2016       | Dec. 19, 2016 | Jan. 19, 2017 | Radiation (03CH02-KS)    |
| AC Power<br>Source                | Chroma       | 61601             | 616010002473 | N/A                        | NCR                 | Dec. 19, 2016 | NCR           | Radiation (03CH02-KS)    |
| Turn Table                        | MF           | MF7802            | N/A          | 0~360 degree               | NCR                 | Dec. 19, 2016 | NCR           | Radiation<br>(03CH02-KS) |
| Antenna Mast                      | MF           | MF7802            | N/A          | 1 m~4 m                    | NCR                 | Dec. 19, 2016 | NCR           | Radiation<br>(03CH02-KS) |

NCR: No Calibration Required

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# 5. Uncertainty of Evaluation

#### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

| Measuring Uncertainty for a Level of | 0.0.15 |
|--------------------------------------|--------|
| Confidence of 95% (U = 2Uc(y))       | 2.3dB  |

#### <u>Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)</u>

| Measuring Uncertainty for a Level of | E 4.4D |
|--------------------------------------|--------|
| Confidence of 95% (U = 2Uc(y))       | 5.1dB  |

#### <u>Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)</u>

| Measuring Uncertainty for a Level of | 4 EAD |
|--------------------------------------|-------|
| Confidence of 95% (U = 2Uc(y))       | 4.5dB |

#### **Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)**

| Measuring Uncertainty for a Level of | 5.1dB |
|--------------------------------------|-------|
| Confidence of 95% (U = 2Uc(y))       | 5.1ub |

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# **Appendix B. Product Equality Declaration**

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# **Appendix C. Original Report**

Please refer to Sporton report number FC6O1212-09 which is issued separately.

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