



# FCC Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Cellular Phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : XT1941-5, XT1941-3  
**FCC ID** : IHDT56XK1  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Jun. 04, 2018 and testing was completed on Jun. 28, 2018. 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.



Approved by: James Huang / Manager

**Sporton International (Kunshan) Inc.**

**No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China**



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### REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| FC860402   | Rev. 01 | Initial issue of report | Jul. 12, 2018 |
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### SUMMARY OF TEST RESULT

| Report Section | FCC Rule | Description           | Limit           | Result | Remark                                  |
|----------------|----------|-----------------------|-----------------|--------|---|
| 3.1            | 15.107   | AC Conducted Emission | < 15.107 limits | PASS   | Under limit<br>5.39 dB at<br>0.162 MHz  |
| 3.2            | 15.109   | Radiated Emission     | < 15.109 limits | PASS   | Under limit<br>3.85 dB at<br>41.640 MHz |



# 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                      | XT1941-5, XT1941-3  |
| FCC ID                          | IHDT56XK1   |
| EUT supports Radios application | GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/<br>HSPA+(16QAM uplink is not supported)/LTE/NFC<br>WLAN 2.4GHz 802.11b/g/n HT20<br>WLAN 5GHz 802.11a/n HT20/HT40<br>Bluetooth BR/EDR/LE |
| IMEI Code                       | Conduction: 355542090025752/355542090025760<br>Radiation: 355542090027873/355542090027881   |
| HW Version                      | DVT1B   |
| SW Version                      | fastboot_deen_oem_userdebug_8.1.0_OPK28.26_f325_int<br>cfg-test-keys_oem  |
| EUT Stage                       | Identical Prototype   |

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT: sample 1 (XT1941-3) is dual SIM sample, sample 2 (XT1941-5) is single SIM sample. According to the difference, sample1 perform full test and sample 2 verify the worst cases for the test item of Radiated Emission.



### 1.4. Product Specification of Equipment Under Test

| Standards-related Product Specification |  |
|---|--|
| <b>Tx Frequency</b>                     | GSM850: 824.2 MHz ~ 848.8 MHz<br>GSM1900: 1850.2 MHz ~ 1909.8MHz<br>WCDMA Band V: 826.4 MHz ~ 846.6 MHz<br>WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz<br>WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz<br>LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 5 : 824.7 MHz ~ 848.3 MHz<br>LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz<br>802.11b/g/n: 2412 MHz ~ 2462 MHz<br>802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz;<br>5500MHz ~ 5720 MHz ; 5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz<br>NFC : 13.56 MHz  |
| <b>Rx Frequency</b>                     | GSM850: 869.2 MHz ~ 893.8 MHz<br>GSM1900: 1930.2 MHz ~ 1989.8 MHz<br>WCDMA Band V: 871.4 MHz ~ 891.6 MHz<br>WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz<br>WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz<br>LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz<br>LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz<br>LTE Band 5 : 869.7 MHz ~ 893.3 MHz<br>LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz<br>802.11b/g/n: 2412 MHz ~ 2462 MHz<br>802.11a/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz;<br>5500MHz ~ 5720 MHz ; 5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz<br>GPS/GLONASS : 1559 MHz ~ 1610 MHz<br>FM : 88 MHz ~ 108 MHz<br>NFC : 13.56 MHz |
| <b>Antenna Type</b>                     | WWAN : Fixed Internal Antenna<br>Bluetooth/WLAN/GNSS : IFA Antenna<br>NFC : Loop Antenna<br>FM: External headset Antenna   |
| <b>Type of Modulation</b>               | GSM/GPRS: GMSK<br>EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK<br>WCDMA : BPSK (Uplink)<br>HSPA : QPSK (Uplink)<br>HSPA+ : 16QAM (16QAM uplink is not supported)<br>DC-HSDPA : 64QAM<br>LTE: QPSK / 16QAM<br>802.11b : DSSS (DBPSK / DQPSK / CCK)<br>802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>Bluetooth LE : GFSK<br>Bluetooth (1Mbps) : GFSK<br>Bluetooth (2Mbps) : $\pi/4$ -DQPSK<br>Bluetooth (3Mbps) : 8-DPSK<br>GPS/GLONASS : BPSK<br>NFC: ASK<br>FM  |



### 1.5. Specification of Accessory

| Specification of Accessory |                  |   |            |                  |
|----------------------------|------------------|---|------------|------------------|
| AC Adapter 1(US)           | Brand Name       | Motorola(Salom)   | Model Name | SC-51            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(EU)           | Brand Name       | Motorola(Salom)   | Model Name | SC-52            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(UK)           | Brand Name       | Motorola(Salom)   | Model Name | SC-53            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(India)        | Brand Name       | Motorola(Salom)   | Model Name | SC-54            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(AU)           | Brand Name       | Motorola(Salom)   | Model Name | SC-55            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(AR)           | Brand Name       | Motorola(Salom)   | Model Name | SC-56            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(BR)           | Brand Name       | Motorola(Salom)   | Model Name | SC-57            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(PRC)          | Brand Name       | Motorola(Salom)   | Model Name | SC-58            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 1(Chile)        | Brand Name       | Motorola(Salom)   | Model Name | SC-52            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(US)           | Brand Name       | Motorola(chenyang)  | Model Name | SC-51            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(EU)           | Brand Name       | Motorola(chenyang)  | Model Name | SC-52            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(UK)           | Brand Name       | Motorola(chenyang)  | Model Name | SC-53            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(AU)           | Brand Name       | Motorola(chenyang)  | Model Name | SC-55            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(AR)           | Brand Name       | Motorola(chenyang)  | Model Name | SC-56            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 2(PRC)          | Brand Name       | Motorola(chenyang)  | Model Name | SC-58            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 3(BR)           | Brand Name       | Motorola(Salom/Flex)  | Model Name | SC-57            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| AC Adapter 4(BR)           | Brand Name       | Motorola<br>(Tenpao/Cliptech)                               | Model Name | SC-57            |
|                            | Power Rating     | I/P: 100-240 Vac, 600mA, O/P: 5/9/12 Vdc, 3000/2000/1500 mA |            |                  |
| Battery                    | Brand Name       | Motorola  | Model Name | JE40             |
|                            | Power Rating     | 3.8Vdc,2820mAh  | Type       | Li-ion           |
| Earphone 1                 | Brand Name       | Motorola (New Leader)                                       | Model Name | NLD-EM307E-09SF  |
|                            | Signal Line Type | 1.2 meter, non-shielded cable, without ferrite core         |            |                  |
| Earphone 2                 | Brand Name       | Motorola  | Model Name | SH38C16618 (L20) |
|                            | Signal Line Type | 1.2 meter, non-shielded cable, without ferrite core         |            |                  |



|             |                  |   |            |             |
|-------------|------------------|---|------------|-------------|
| USB Cable 1 | Brand Name       | Motorola (Liqi)                                 | Model Name | LQ-03500079 |
|             | Signal Line Type | 1.0 meter, shielded cable, without ferrite core |            |             |
| USB Cable 2 | Brand Name       | Motorola (Saibao)                               | Model Name | SLQ-A1111A  |
|             | Signal Line Type | 1.0 meter, shielded cable, without ferrite core |            |             |
| USB Cable 3 | Brand Name       | Motorola (I SHENG)                              | Model Name | SC18C28955  |
|             | Signal Line Type | 1.0 meter, shielded cable, without ferrite core |            |             |

### 1.6. Modification of EUT

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





### 1.7. Test Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No is CN5013.

|                           |   |           |                                       |
|---------------------------|---|-----------|---------------------------------------|
| <b>Test Site</b>          | Sporton International (Kunshan) Inc.  |           |                                       |
| <b>Test Site Location</b> | No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China<br>TEL: +86-512-57900158<br>FAX: +86-512-57900958 |           |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>   |           | <b>FCC Test Firm Registration No.</b> |
|                           | CO01-KS   | 03CH02-KS | 630927                                |

**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. Test Configuration of Equipment Under Test

### 2.1. Test Mode

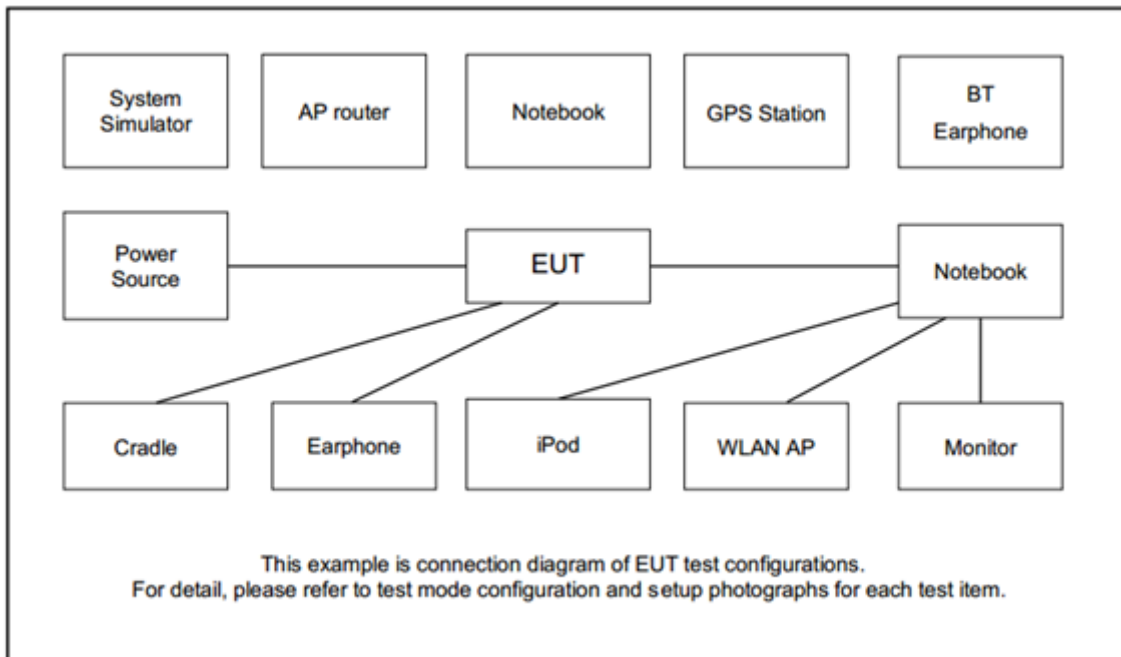
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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).

| Test Items            | Function Type   |
|-----------------------|---|
| AC Conducted Emission | Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + Camera(Rear) for Sample 1      |
|                       | Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + Camera(Front) for Sample 1      |
|                       | Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + MPEG4 for Sample 1       |
|                       | Mode 4: LTE Band 4 Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + NFC On for Sample 1          |
|                       | Mode 5: LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1       |
|                       | Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 2 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1         |
|                       | Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 3 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1       |
|                       | Mode 8: USB Cable 1 (Charging from Adapter 1) + FM Rx (88MHz) + Earphone 1 for Sample 1   |
|                       | Mode 9: USB Cable 1 (Charging from Adapter 1) + FM Rx (98MHz) + Earphone 1 for Sample 1   |
|                       | Mode 10: USB Cable 1 (Charging from Adapter 1) + FM Rx (108MHz) + Earphone 1 for Sample 1   |
|                       | Mode 11: LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 2 (Charging from Adapter 2) + Earphone 2 + Camera(Rear) for Sample 1 |
|                       | Mode 12: LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 3 (Charging from Adapter 3) + Earphone 1 + Camera(Rear) for Sample 1 |
|                       | Mode 13: LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + Camera(Rear) for Sample 1 |

|   |   |
|---|---|
| Radiated Emissions  | <p>Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + Camera(Rear) for Sample 1</p> <p>Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + Camera(Front) for Sample 1</p> <p>Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + MPEG4 for Sample 1</p> <p>Mode 4: WCDMA Band II Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + NFC On for Sample 1</p> <p>Mode 5: LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1</p> <p>Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN (5G) Idle + USB Cable 2 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1</p> <p>Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 3 (Data Link with Notebook) + Earphone 1 + GNSS Rx for Sample 1</p> <p>Mode 8: USB Cable 1 (Charging from Adapter 1) + FM Rx (88MHz) + Earphone 1 for Sample 1</p> <p>Mode 9: USB Cable 1 (Charging from Adapter 1) + FM Rx (98MHz) + Earphone 1 for Sample 1</p> <p>Mode 10: USB Cable 1 (Charging from Adapter 1) + FM Rx (108MHz) + Earphone 1 for Sample 1</p> <p>Mode 11: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 2 (Charging from Adapter 2) + Earphone 2 + MPEG4 for Sample 1</p> <p>Mode 12: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 3 (Charging from Adapter 3) + Earphone 1 + MPEG4 for Sample 1</p> <p>Mode 13: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + MPEG4 for Sample 1</p> <p>Mode 14: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + MPEG4 for Sample 2</p> |
| <b>Remark:</b>  |   |
| <ol style="list-style-type: none"> <li>1. The worst case of AC is mode 13; only the test data of this mode is reported.</li> <li>2. The worst case of RE is mode 3; only the test data of this mode is reported.</li> <li>3. Data Link with Notebook means data application transferred mode between EUT and Notebook.</li> </ol> |   |

## 2.2. Connection Diagram of Test System



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

| Item | Equipment          | Trade Name | Model Name   | FCC ID      | Data Cable     | Power Cord   |
|------|--------------------|------------|--------------|-------------|----------------|--|
| 1.   | System Simulator   | Anritsu    | MT8820C      | N/A         | N/A            | Unshielded, 1.8 m  |
| 2.   | GPS Station        | ADIVIC     | MP9000       | N/A         | N/A            | Unshielded, 1.8 m  |
| 3.   | FM Generator       | R&S        | SMBV100A     | N/A         | N/A            | Unshielded, 1.8 m  |
| 4.   | WLAN AP            | D-Link     | DIR-855      | KA2DIR855A2 | N/A            | Unshielded,1.8m  |
| 5.   | WLAN AP            | TP-Link    | TL-WDR5600   | N/A         | N/A            | Unshielded,1.8m  |
| 6.   | Bluetooth Earphone | Lenovo     | LBH308       | N/A         | N/A            | N/A  |
| 7.   | Notebook           | DELL       | Latitude3440 | N/A         | N/A            | shielded cable DC O/P 1.8m<br>Unshielded AC I/P cable 1.8m |
| 8.   | Notebook           | Lenovo     | G480         | PRC4        | N/A            | shielded cable DC O/P 1.8m<br>Unshielded AC I/P cable 1.8m |
| 9.   | SD Card            | Kingston   | 8GB          | N/A         | N/A            | N/A  |
| 10.  | SD Card            | SanDisk    | Uitra        | N/A         | N/A            | N/A  |
| 11.  | Hard Disk          | Lenovo     | F310         | FCC DoC     | Shielded, 1.2m | N/A  |



## **2.4. EUT Operation Test Setup**

The EUT was in GSM or WCDMA or 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.

At the same time, 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 GNSS function to make the EUT receive continuous signals from GNSS station.
3. Turn on NFC function.
4. Turn on camera to capture images.
5. Execute "Video player" to play MPEG4 files.
6. The EUT was turned to Radio frequency channels, FM88 MHz, FM98 MHz, FM108 MHz from FM Generator.

### 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<br>(MHz) | Conducted limit (dBuV) |           |
|--------------------------------|------------------------|-----------|
|                                | 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.

##### 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.

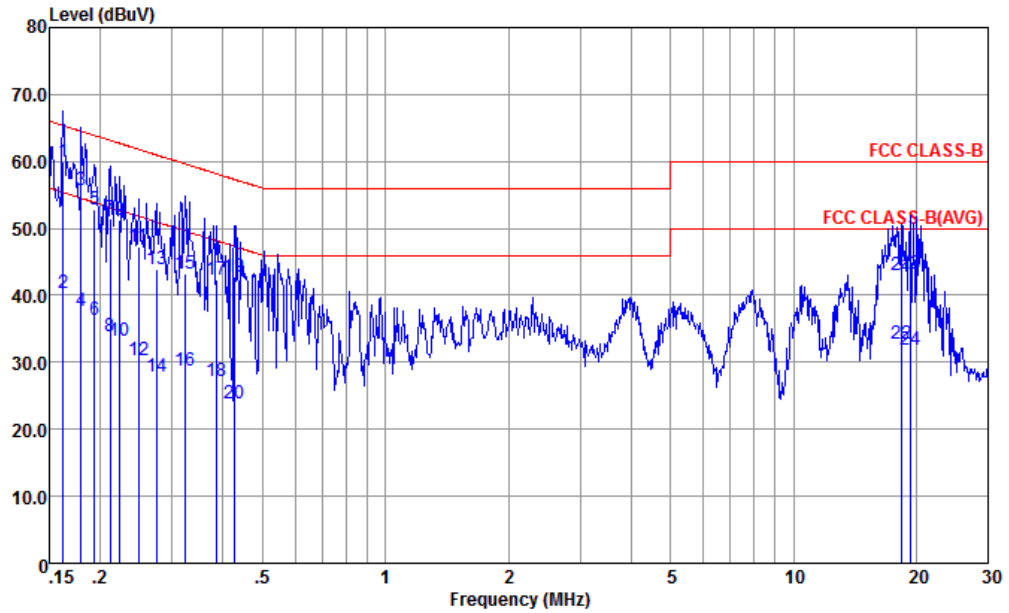
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

|                 |  |                     |             |
|-----------------|--|---------------------|-------------|
| Test Mode :     | Mode 13  | Temperature :       | 25.1~25.2°C |
| Test Engineer : | Amos Zhang   | Relative Humidity : | 44~47%      |
| Test Voltage :  | 120Vac / 60Hz  | Phase :             | Line        |
| Function Type : | LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + Camera(Rear) for Sample 1 |                     |             |



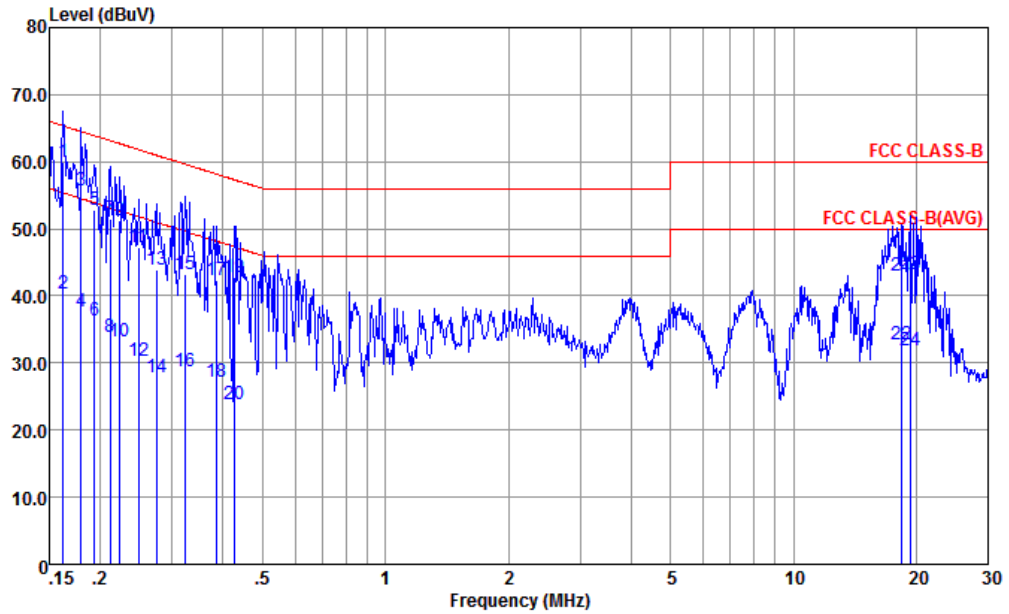
Site : CO01-KS  
 Condition : FCC CLASS-B LISN-L-171013-060103 LINE  
 Project : (FC) 860402  
 mode : Mode 13  
 : 355542090025752/355542090025760 #13

|     | Freq  | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  |
|-----|-------|-------|------------|------------|------------|-------------|------------|---------|
|     | MHz   | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |
| 1 * | 0.162 | 59.95 | -5.39      | 65.34      | 49.21      | 0.17        | 10.57      | QP      |
| 2   | 0.162 | 40.35 | -14.99     | 55.34      | 29.61      | 0.17        | 10.57      | Average |
| 3   | 0.180 | 55.60 | -8.90      | 64.50      | 44.89      | 0.19        | 10.52      | QP      |
| 4   | 0.180 | 37.60 | -16.90     | 54.50      | 26.89      | 0.19        | 10.52      | Average |
| 5   | 0.193 | 52.87 | -11.02     | 63.89      | 42.20      | 0.20        | 10.47      | QP      |
| 6   | 0.193 | 36.27 | -17.62     | 53.89      | 25.60      | 0.20        | 10.47      | Average |
| 7   | 0.212 | 51.56 | -11.58     | 63.14      | 40.91      | 0.20        | 10.45      | QP      |
| 8   | 0.212 | 33.96 | -19.18     | 53.14      | 23.31      | 0.20        | 10.45      | Average |
| 9   | 0.223 | 51.15 | -11.55     | 62.70      | 40.49      | 0.21        | 10.45      | QP      |
| 10  | 0.223 | 33.25 | -19.45     | 52.70      | 22.59      | 0.21        | 10.45      | Average |
| 11  | 0.248 | 47.25 | -14.57     | 61.82      | 36.60      | 0.21        | 10.44      | QP      |
| 12  | 0.248 | 30.25 | -21.57     | 51.82      | 19.60      | 0.21        | 10.44      | Average |
| 13  | 0.274 | 43.85 | -17.13     | 60.98      | 33.20      | 0.22        | 10.43      | QP      |
| 14  | 0.274 | 27.85 | -23.13     | 50.98      | 17.20      | 0.22        | 10.43      | Average |
| 15  | 0.323 | 43.25 | -16.37     | 59.62      | 32.60      | 0.23        | 10.42      | QP      |
| 16  | 0.323 | 28.85 | -20.77     | 49.62      | 18.20      | 0.23        | 10.42      | Average |
| 17  | 0.385 | 42.25 | -15.92     | 58.17      | 31.60      | 0.24        | 10.41      | QP      |





|                 |  |                     |             |
|-----------------|--|---------------------|-------------|
| Test Mode :     | Mode 13  | Temperature :       | 25.1~25.2°C |
| Test Engineer : | Amos Zhang   | Relative Humidity : | 44~47%      |
| Test Voltage :  | 120Vac / 60Hz  | Phase :             | Line        |
| Function Type : | LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + Camera(Rear) for Sample 1 |                     |             |

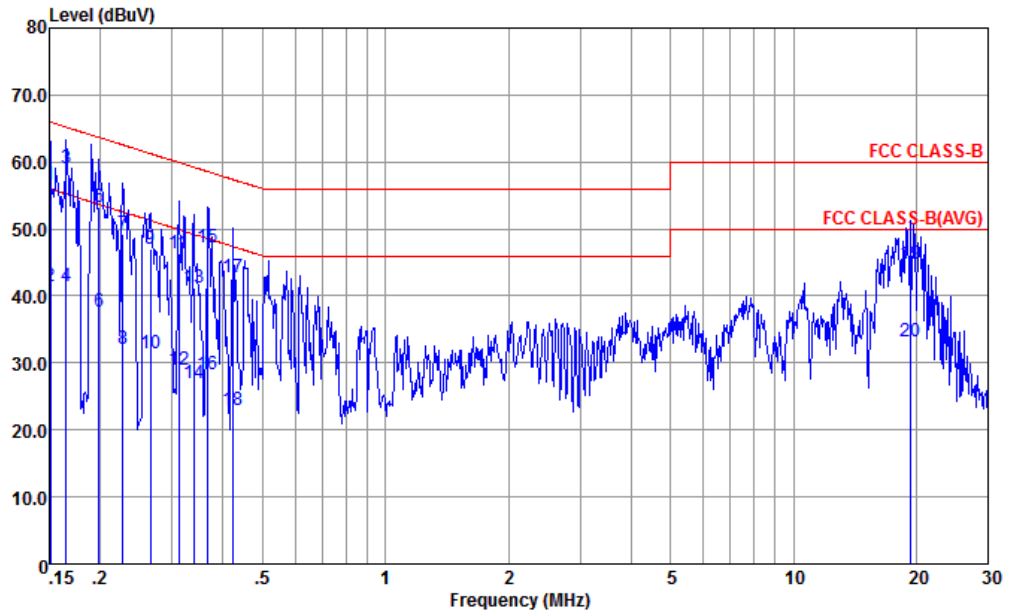


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-L-171013-060103 LINE  
 Project : (FC) 860402  
 mode : Mode 13  
 : 355542090025752/355542090025760 #13

|    | Freq   | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  |
|----|--------|-------|------------|------------|------------|-------------|------------|---------|
|    | MHz    | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |
| 18 | 0.385  | 27.25 | -20.92     | 48.17      | 16.60      | 0.24        | 10.41      | Average |
| 19 | 0.426  | 42.83 | -14.50     | 57.33      | 32.20      | 0.25        | 10.38      | QP      |
| 20 | 0.426  | 23.83 | -23.50     | 47.33      | 13.20      | 0.25        | 10.38      | Average |
| 21 | 18.328 | 42.96 | -17.04     | 60.00      | 32.29      | 0.21        | 10.46      | QP      |
| 22 | 18.328 | 32.76 | -17.24     | 50.00      | 22.09      | 0.21        | 10.46      | Average |
| 23 | 19.326 | 43.26 | -16.74     | 60.00      | 32.60      | 0.19        | 10.47      | QP      |
| 24 | 19.326 | 31.76 | -18.24     | 50.00      | 21.10      | 0.19        | 10.47      | Average |



|                 |  |                     |             |
|-----------------|--|---------------------|-------------|
| Test Mode :     | Mode 13  | Temperature :       | 25.1~25.2°C |
| Test Engineer : | Amos Zhang   | Relative Humidity : | 44~47%      |
| Test Voltage :  | 120Vac / 60Hz  | Phase :             | Neutral     |
| Function Type : | LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + Camera(Rear) for Sample 1 |                     |             |

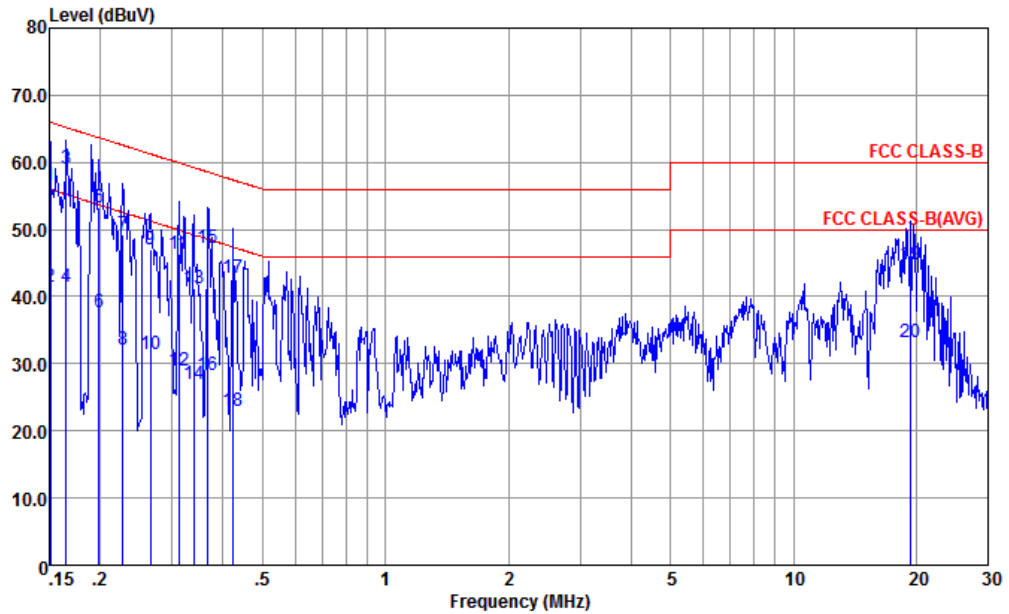


Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL  
 Project : (FC) 860402  
 mode : Mode 13  
 : 355542090025752/355542090025760 #13

|     | Freq  | Level | Over Limit | Limit | Read  | LISN | Cable | Remark  |
|-----|-------|-------|------------|-------|-------|------|-------|---------|
|     | MHz   | dBuV  | dB         | dBuV  | dBuV  | dB   | dB    |         |
| 1   | 0.151 | 56.50 | -9.46      | 65.96 | 45.60 | 0.28 | 10.62 | QP      |
| 2   | 0.151 | 41.40 | -14.56     | 55.96 | 30.50 | 0.28 | 10.62 | Average |
| 3 * | 0.165 | 59.04 | -6.17      | 65.21 | 48.20 | 0.28 | 10.56 | QP      |
| 4   | 0.165 | 41.44 | -13.77     | 55.21 | 30.60 | 0.28 | 10.56 | Average |
| 5   | 0.199 | 53.24 | -10.43     | 63.67 | 42.50 | 0.28 | 10.46 | QP      |
| 6   | 0.199 | 37.64 | -16.03     | 53.67 | 26.90 | 0.28 | 10.46 | Average |
| 7   | 0.227 | 49.33 | -13.24     | 62.57 | 38.60 | 0.28 | 10.45 | QP      |
| 8   | 0.227 | 32.03 | -20.54     | 52.57 | 21.30 | 0.28 | 10.45 | Average |
| 9   | 0.266 | 46.92 | -14.33     | 61.25 | 36.20 | 0.28 | 10.44 | QP      |
| 10  | 0.266 | 31.32 | -19.93     | 51.25 | 20.60 | 0.28 | 10.44 | Average |
| 11  | 0.312 | 46.31 | -13.62     | 59.93 | 35.61 | 0.28 | 10.42 | QP      |
| 12  | 0.312 | 28.91 | -21.02     | 49.93 | 18.21 | 0.28 | 10.42 | Average |
| 13  | 0.339 | 41.30 | -17.92     | 59.22 | 30.59 | 0.29 | 10.42 | QP      |
| 14  | 0.339 | 26.90 | -22.32     | 49.22 | 16.19 | 0.29 | 10.42 | Average |
| 15  | 0.367 | 47.30 | -11.26     | 58.56 | 36.60 | 0.29 | 10.41 | QP      |
| 16  | 0.367 | 28.20 | -20.36     | 48.56 | 17.50 | 0.29 | 10.41 | Average |
| 17  | 0.424 | 42.87 | -14.50     | 57.37 | 32.20 | 0.29 | 10.38 | QP      |



|                 |  |                     |             |
|-----------------|--|---------------------|-------------|
| Test Mode :     | Mode 13  | Temperature :       | 25.1~25.2°C |
| Test Engineer : | Amos Zhang   | Relative Humidity : | 44~47%      |
| Test Voltage :  | 120Vac / 60Hz  | Phase :             | Neutral     |
| Function Type : | LTE Band 2 Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 4) + Earphone 1 + Camera(Rear) for Sample 1 |                     |             |



Site : CO01-KS  
 Condition : FCC CLASS-B LISN-N-171013-060103 NEUTRAL  
 Project : (FC) 860402  
 mode : Mode 13  
 : 355542090025752/355542090025760 #13

|    | Freq   | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  |
|----|--------|-------|------------|------------|------------|-------------|------------|---------|
|    | MHz    | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |
| 18 | 0.424  | 22.87 | -24.50     | 47.37      | 12.20      | 0.29        | 10.38      | Average |
| 19 | 19.428 | 44.79 | -15.21     | 60.00      | 34.20      | 0.12        | 10.47      | QP      |
| 20 | 19.428 | 33.19 | -16.81     | 50.00      | 22.60      | 0.12        | 10.47      | Average |



### 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 (MHz) | Field Strength (microvolts/meter) | Measurement Distance (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

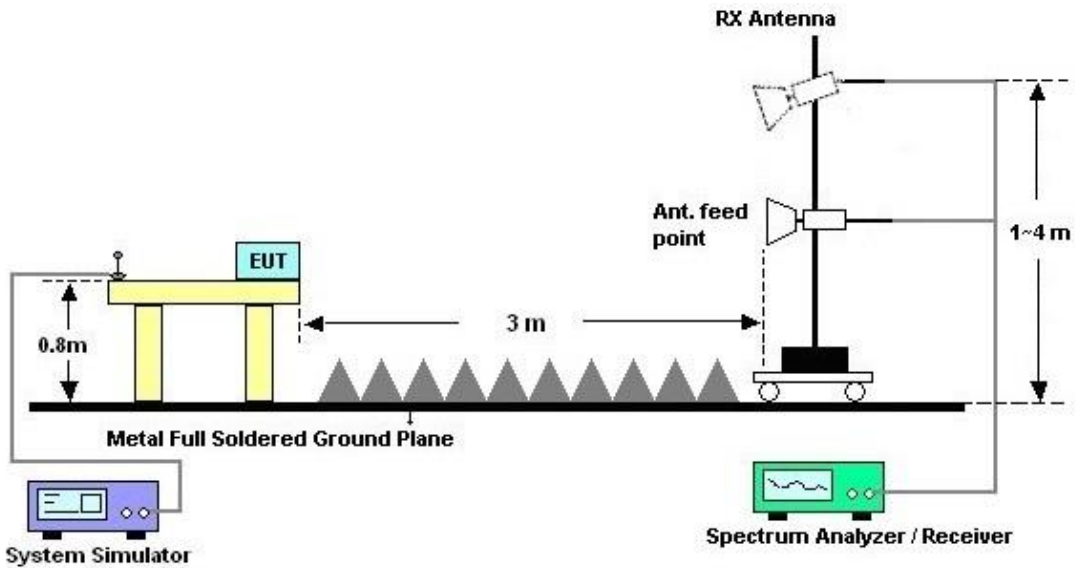
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dBµV/m) = 20 log Emission level (µV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



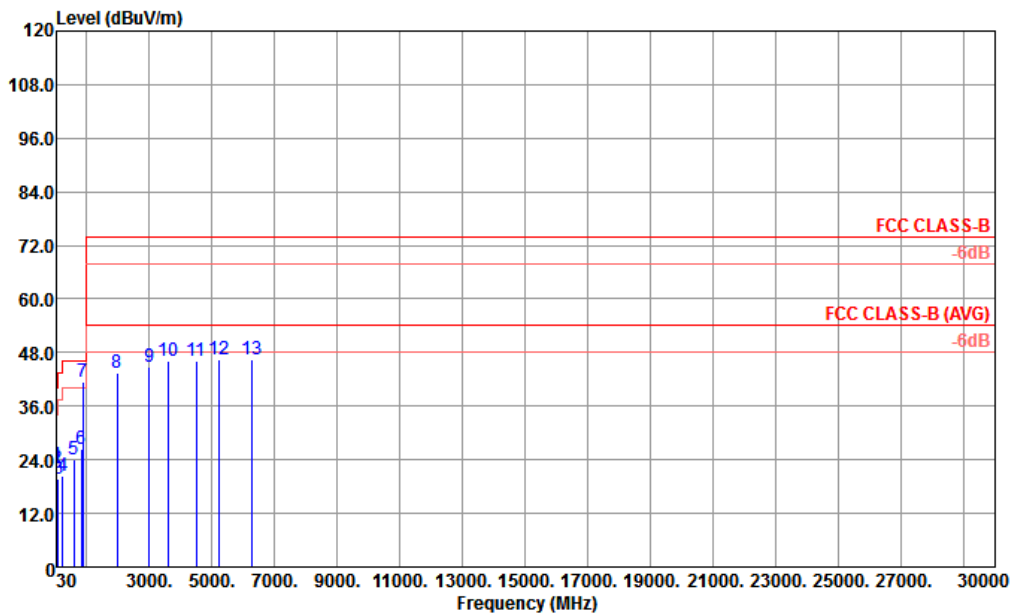
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

|                 |   |                     |            |
|-----------------|---|---------------------|------------|
| Test Mode :     | Mode 3  | Temperature :       | 21~22°C    |
| Test Engineer : | Rock Shi  | Relative Humidity : | 41~42%     |
| Test Distance : | 3m  | Polarization :      | Horizontal |
| Function Type : | WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + MPEG4 for Sample 1 |                     |            |
| Remark :        | #7 is system simulator signal which can be ignored.   |                     |            |

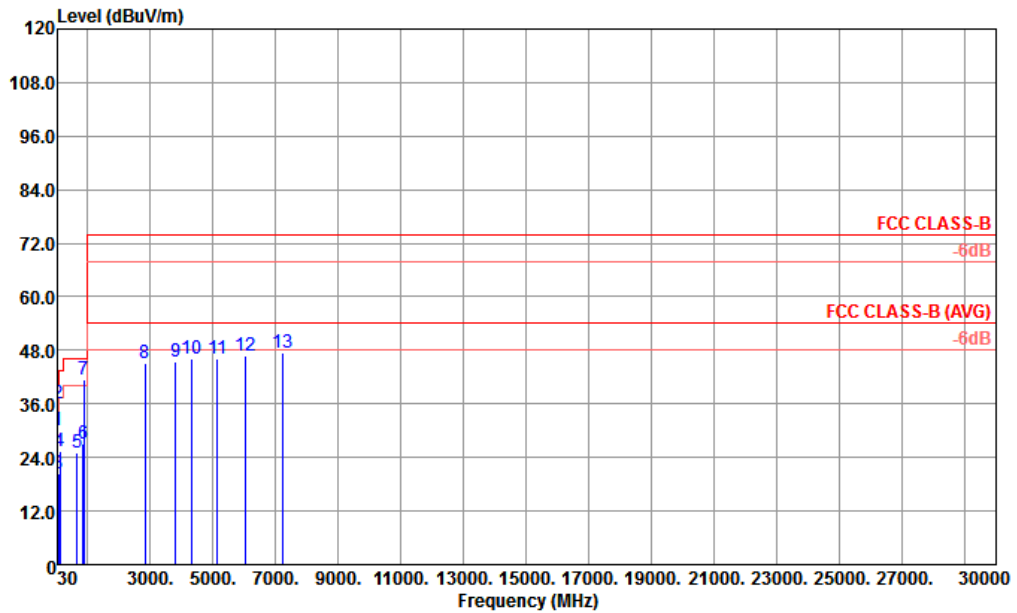


Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 23182-3M HORIZONTAL  
 Project : (FC)860402  
 Mode : 3  
 IMEI : 355542090027873 355542090027881 #15  
 Battery : 16%

|     | Freq    | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Remark |
|-----|---------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|     | MHz     | dBuV/m | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg    |
| 1   | 30.97   | 22.75  | -17.25 | 40.00  | 30.26       | 23.93 | 0.59   | 32.03 | 100   | 0 Peak |
| 2   | 39.70   | 22.22  | -17.78 | 40.00  | 34.82       | 18.80 | 0.64   | 32.04 | ---   | Peak   |
| 3   | 98.87   | 19.60  | -23.90 | 43.50  | 33.72       | 16.81 | 1.01   | 31.94 | ---   | Peak   |
| 4   | 238.55  | 20.47  | -25.53 | 46.00  | 33.18       | 17.19 | 1.68   | 31.58 | ---   | Peak   |
| 5   | 583.87  | 23.99  | -22.01 | 46.00  | 27.03       | 24.12 | 2.60   | 29.76 | ---   | Peak   |
| 6   | 816.67  | 26.50  | -19.50 | 46.00  | 26.01       | 25.90 | 2.78   | 28.19 | ---   | Peak   |
| 7 ! | 881.66  | 41.56  |        |        | 39.85       | 26.29 | 3.08   | 27.66 | ---   | Peak   |
| 8   | 1976.00 | 43.29  | -30.71 | 74.00  | 44.47       | 30.97 | 4.61   | 36.76 | ---   | Peak   |
| 9   | 2992.00 | 44.86  | -29.14 | 74.00  | 43.20       | 32.88 | 5.95   | 37.17 | ---   | Peak   |
| 10  | 3616.00 | 46.17  | -27.83 | 74.00  | 43.01       | 33.13 | 6.47   | 36.44 | ---   | Peak   |
| 11  | 4504.00 | 46.16  | -27.84 | 74.00  | 41.82       | 33.80 | 7.39   | 36.85 | ---   | Peak   |
| 12  | 5240.00 | 46.50  | -27.50 | 74.00  | 40.83       | 34.57 | 7.79   | 36.69 | ---   | Peak   |
| 13  | 6280.00 | 46.62  | -27.38 | 74.00  | 39.41       | 35.16 | 8.84   | 36.79 | ---   | Peak   |



|                 |   |                     |          |
|-----------------|---|---------------------|----------|
| Test Mode :     | Mode 3  | Temperature :       | 21~22°C  |
| Test Engineer : | Rock Shi  | Relative Humidity : | 41~42%   |
| Test Distance : | 3m  | Polarization :      | Vertical |
| Function Type : | WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4G) Idle + USB Cable 1 (Charging from Adapter 1) + Earphone 1 + MPEG4 for Sample 1 |                     |          |
| Remark :        | #7 is system simulator signal which can be ignored.   |                     |          |



Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 23182-3M VERTICAL  
 Project : (FC)860402  
 Mode : 3  
 IMEI : 355542090027873 355542090027881 #15  
 Battery : 16%

|     | Freq    | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Remark |
|-----|---------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|     | MHz     | dBuV/m | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg    |
| 1   | 32.91   | 30.09  | -9.91  | 40.00  | 38.73       | 22.79 | 0.61   | 32.04 | ---   | Peak   |
| 2 ! | 41.64   | 36.15  | -3.85  | 40.00  | 49.68       | 17.89 | 0.65   | 32.07 | 100   | 0 Peak |
| 3   | 73.65   | 20.33  | -19.67 | 40.00  | 38.77       | 12.75 | 0.87   | 32.06 | ---   | Peak   |
| 4   | 103.72  | 25.39  | -18.11 | 43.50  | 39.07       | 17.21 | 1.03   | 31.92 | ---   | Peak   |
| 5   | 669.23  | 25.23  | -20.77 | 46.00  | 27.16       | 24.51 | 2.71   | 29.15 | ---   | Peak   |
| 6   | 852.56  | 27.00  | -19.00 | 46.00  | 25.73       | 26.11 | 3.06   | 27.90 | ---   | Peak   |
| 7 ! | 881.66  | 41.31  |        |        | 39.60       | 26.29 | 3.08   | 27.66 | ---   | Peak   |
| 8   | 2840.00 | 44.99  | -29.01 | 74.00  | 43.36       | 32.73 | 5.87   | 36.97 | ---   | Peak   |
| 9   | 3808.00 | 45.59  | -28.41 | 74.00  | 42.10       | 33.42 | 6.63   | 36.56 | ---   | Peak   |
| 10  | 4304.00 | 46.00  | -28.00 | 74.00  | 41.97       | 33.67 | 7.21   | 36.85 | ---   | Peak   |
| 11  | 5136.00 | 46.22  | -27.78 | 74.00  | 40.60       | 34.54 | 7.78   | 36.70 | ---   | Peak   |
| 12  | 6016.00 | 46.72  | -27.28 | 74.00  | 40.32       | 34.93 | 8.40   | 36.93 | ---   | Peak   |
| 13  | 7224.00 | 47.37  | -26.63 | 74.00  | 39.35       | 35.73 | 9.19   | 36.90 | ---   | Peak   |



### 4. List of Measuring Equipment

| Instrument                        | Manufacturer | Model No.         | Serial No.       | Characteristics            | Calibration Date | Test Date     | Due Date      | Remark                |
|-----------------------------------|--------------|-------------------|------------------|----------------------------|------------------|---------------|---------------|-----------------------|
| EMI Receiver                      | R&S          | ESCI7             | 100768           | 9kHz~7GHz;                 | Apr. 19, 2018    | Jun. 28, 2018 | Apr. 18, 2019 | Conduction (CO01-KS)  |
| AC LISN                           | MessTec      | AN3016            | 060103           | 9kHz~30MHz                 | Oct. 13, 2017    | Jun. 28, 2018 | Oct. 12, 2018 | Conduction (CO01-KS)  |
| AC LISN (for auxiliary equipment) | MessTec      | AN3016            | 060105           | 9kHz~30MHz                 | Oct. 13, 2017    | Jun. 28, 2018 | Oct. 12, 2018 | Conduction (CO01-KS)  |
| AC Power Source                   | Chroma       | 61602             | ABP0000008<br>11 | AC 0V~300V,<br>45Hz~1000Hz | Oct. 12, 2017    | Jun. 28, 2018 | Oct. 11, 2018 | Conduction (CO01-KS)  |
| EMI Test Receiver                 | R&S          | ESR7              | 101403           | 9kHz~7GHz;Ma<br>x 30dBm    | Aug. 08, 2017    | Jun. 21, 2018 | Aug. 07, 2018 | Radiation (03CH02-KS) |
| EXA Spectrum Analyzer             | Keysight     | N9010A            | MY55150208       | 10Hz~44G,MAX<br>30dB       | Apr. 17, 2018    | Jun. 21, 2018 | Apr. 16, 2019 | Radiation (03CH02-KS) |
| Bilog Antenna                     | TeseQ        | CBL6112D          | 23182            | 30MHz~2GHz                 | Jan. 29, 2018    | Jun. 21, 2018 | Jan. 28, 2019 | Radiation (03CH02-KS) |
| Double Ridge Horn Antenna         | ETS-Lindgren | 3117              | 75957            | 1GHz~18GHz                 | Oct. 21, 2017    | Jun. 21, 2018 | Oct. 20, 2018 | Radiation (03CH02-KS) |
| SHF-EHF Horn                      | Schwarzbeck  | BBHA 9170         | BBHA170249       | 15GHz~40GHz                | Feb. 07, 2018    | Jun. 21, 2018 | Feb. 06, 2019 | Radiation (03CH02-KS) |
| Amplifier                         | MITEQ        | TTA1840-35-H<br>G | 1887435          | 18~40GHz                   | Oct. 12, 2017    | Jun. 21, 2018 | Oct. 11, 2018 | Radiation (03CH02-KS) |
| Amplifier                         | SONOMA       | 310N              | 187289           | 9KHz~1GHz                  | Aug. 07, 2017    | Jun. 21, 2018 | Aug. 06, 2018 | Radiation (03CH02-KS) |
| Amplifier                         | Agilent      | 8449B             | 3008A02384       | 1~26.5GHz Gain<br>30dB     | Oct. 12, 2017    | Jun. 21, 2018 | Oct. 11, 2018 | Radiation (03CH02-KS) |
| AC Power Source                   | Chroma       | 61601             | 61601000247<br>3 | N/A                        | NCR              | Jun. 21, 2018 | NCR           | Radiation (03CH02-KS) |
| Turn Table                        | MF           | MF7802            | N/A              | 0~360 degree               | NCR              | Jun. 21, 2018 | NCR           | Radiation (03CH02-KS) |
| Antenna Mast                      | MF           | MF7802            | N/A              | 1 m~4 m                    | NCR              | Jun. 21, 2018 | NCR           | Radiation (03CH02-KS) |

NCR: No Calibration Required





## 5. Uncertainty of Evaluation

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

|   |       |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.9dB |
|---|-------|

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|   |       |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.2dB |
|---|-------|

### Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

|   |       |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.2dB |
|---|-------|

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

|   |       |
|---|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.7dB |
|---|-------|