



# FCC TEST REPORT

FCC ID : IHDT56YJ2  
Equipment : Mobile Cellular Phone  
Brand Name : Motorola  
Model Name : XT2061-3  
Applicant : Motorola Mobility, LLC  
222 W Merchandise Mart Plaza, Suite 1800,  
Chicago, IL 60654, United States  
Manufacturer : Motorola Mobility, LLC  
222 W Merchandise Mart Plaza, Suite 1800,  
Chicago, IL 60654, United States  
Standard : FCC 47 CFR FCC Part 15 Subpart B Class B

The product was received on Jan. 16, 2020 and testing was started from Jan. 22, 2020 and completed on Jan. 30, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

*Louis Wu*

Approved by: Louis Wu

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



## Table of Contents

|                                                              |           |
|--------------------------------------------------------------|-----------|
| <b>History of this test report.....</b>                      | <b>3</b>  |
| <b>Summary of Test Result.....</b>                           | <b>4</b>  |
| <b>1. General Description .....</b>                          | <b>5</b>  |
| 1.1. Product Feature of Equipment Under Test .....           | 5         |
| 1.2. Product Specification of Equipment Under Test .....     | 6         |
| 1.3. Modification of EUT .....                               | 8         |
| 1.4. Test Location.....                                      | 9         |
| 1.5. Applicable Standards .....                              | 9         |
| <b>2. Test Configuration of Equipment Under Test .....</b>   | <b>10</b> |
| 2.1. Test Mode .....                                         | 10        |
| 2.2. Connection Diagram of Test System .....                 | 12        |
| 2.3. Support Unit used in test configuration and system..... | 13        |
| 2.4. EUT Operation Test Setup.....                           | 13        |
| <b>3. Test Result .....</b>                                  | <b>14</b> |
| 3.1. Test of AC Conducted Emission Measurement .....         | 14        |
| 3.2. Test of Radiated Emission Measurement .....             | 16        |
| <b>4. List of Measuring Equipment.....</b>                   | <b>18</b> |
| <b>5. Uncertainty of Evaluation .....</b>                    | <b>19</b> |
| <b>Appendix A. AC Conducted Emission Test Result</b>         |           |
| <b>Appendix B. Radiated Emission Test Result</b>             |           |



## History of this test report

| Report No.  | Version | Description             | Issued Date   |
|-------------|---------|-------------------------|---------------|
| FC9D0635-01 | 01      | Initial issue of report | Apr. 01, 2020 |
|             |         |                         |               |
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## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items            | Result (PASS/FAIL) | Remark                                                    |
|---------------|-----------------|-----------------------|--------------------|-----------------------------------------------------------|
| 3.1           | 15.107          | AC Conducted Emission | Pass               | Under limit<br>6.11 dB at<br>0.449 MHz                    |
| 3.2           | 15.109          | Radiated Emission     | Pass               | Under limit<br>4.56 dB at<br>40.670 MHz<br>for Quasi-Peak |

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by:** Dara Chiu

**Report Producer:** Jessie Ho

# 1. General Description

## 1.1. Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                                                                           |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | Mobile Cellular Phone                                                                                                                                                                     |
| Brand Name                      | Motorola                                                                                                                                                                                  |
| Model Name                      | XT2061-3                                                                                                                                                                                  |
| FCC ID                          | IHDT56YJ2                                                                                                                                                                                 |
| IMEI Code                       | <b>Conduction</b> : IMEI: 359124100005417<br><b>Radiation</b> : IMEI: 359124100005367                                                                                                     |
| EUT supports Radios application | CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/<br>GNSS/NFC/WPC<br>WLAN 11b/g/n HT20<br>WLAN 11a/n HT20/HT40<br>WLAN 11ac VHT20/VHT40/VHT80<br>WLAN 11ax HE20/HE40/HE80<br>Bluetooth BR/EDR/LE |
| HW Version                      | DVT2                                                                                                                                                                                      |
| EUT Stage                       | Identical Prototype                                                                                                                                                                       |

**Remark:** The above EUT's information was declared by manufacturer.

| Accessory List |                                 |
|----------------|---------------------------------|
| AC Adapter 1   | Brand Name : Motorola           |
|                | Model Name : SC-51 (SA18C30116) |
|                | Manufacturer : Chenyang         |
| AC Adapter 2   | Brand Name : Motorola           |
|                | Model Name : SC-51 (SA18C62985) |
|                | Manufacturer : Acbel            |
| Battery        | Brand Name : ATL                |
|                | Model Name : LW50               |
| USB Cable 1    | Brand Name : Motorola           |
|                | Model Name : SC18C24367         |
|                | Manufacturer : Saibao           |
| USB Cable 2    | Brand Name : Motorola           |
|                | Model Name : SC18C24368         |
|                | Manufacturer : Luxshare         |

## 1.2. 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 ~ 1909.8 MHz<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>LTE Band 12: 699.7 MHz ~ 715.3 MHz<br>LTE Band 13: 779.5 MHz ~ 784.5 MHz<br>LTE Band 17: 706.5 MHz ~ 713.5 MHz<br>LTE Band 25: 1850.7 MHz ~ 1914.3 MHz<br>LTE Band 26 : 824.7 MHz ~ 848.3 MHz<br>LTE Band 30: 2307.5 MHz ~ 2312.5 MHz<br>LTE Band 38: 2572.5 MHz ~ 2617.5 MHz<br>LTE Band 41: 2498.5 MHz ~ 2687.5 MHz<br>LTE Band 66: 1710.7 MHz ~ 1779.3 MHz<br>LTE Band 71: 665.5 MHz ~ 695.5 MHz<br>5G NR Band n5: 826.5 MHz ~ 846.5 MHz<br>5G NR Band n66: 1712.5 MHz ~ 1777.5 MHz<br>5G NR Band n71: 665.5 MHz ~ 695.5 MHz<br>CDMA2000 BC0: 824.70 MHz ~ 848.31 MHz<br>CDMA2000 BC1: 1851.25 MHz ~ 1908.75 MHz<br>802.11b/g/n: 2412 MHz ~ 2462 MHz<br>802.11a/n/ac/ax:<br>5180 MHz ~ 5240 MHz;<br>5260 MHz ~ 5320 MHz;<br>5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz;<br>5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz<br>NFC : 13.56 MHz |



| Standards-related Product Specification |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rx Frequency                            | <p>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/>LTE Band 12: 729.7 MHz ~ 745.3 MHz<br/>LTE Band 13: 748.5 MHz ~ 753.5 MHz<br/>LTE Band 17: 736.5 MHz ~ 743.5 MHz<br/>LTE Band 25: 1930.7 MHz ~ 1994.3 MHz<br/>LTE Band 26: 869.7 MHz ~ 893.3 MHz<br/>LTE Band 30: 2352.5 MHz ~ 2357.5 MHz<br/>LTE Band 38: 2572.5 MHz ~ 2617.5 MHz<br/>LTE Band 41: 2498.5 MHz ~ 2687.5 MHz<br/>LTE Band 66: 2110.7 MHz ~ 2199.3 MHz<br/>LTE Band 71: 619.5 MHz ~ 649.5 MHz<br/>5G NR Band n5: 871.5 MHz ~ 891.5 MHz<br/>5G NR Band n66: 2112.5 MHz ~ 2197.5 MHz<br/>5G NR Band n71: 619.5 MHz ~ 649.5 MHz<br/>CDMA 2000 BC0: 869.70 MHz ~ 893.31 MHz<br/>CDMA 2000 BC1: 1931.25 MHz ~ 1988.75 MHz<br/>802.11b/g/n: 2412 MHz ~ 2462 MHz<br/>802.11a/n/ac/ax:<br/>5180 MHz ~ 5240 MHz;<br/>5260 MHz ~ 5320 MHz;<br/>5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz;<br/>5745 MHz ~ 5825 MHz<br/>Bluetooth: 2402 MHz ~ 2480 MHz<br/>GNSS : 1559 ~ 1610 MHz<br/>(GPS/Glonass/Galileo/BDS)<br/>NFC : 13.56 MHz<br/>WPC: 80 kHz ~ 300 kHz</p> |
| Antenna Type                            | <p>WWAN: Fixed Internal Antenna<br/>WLAN:<br/>&lt;Ant. 1&gt;: ILA Antenna<br/>&lt;Ant. 2&gt;: ILA Antenna<br/>Bluetooth: ILA Antenna<br/>GPS/Glonass/Galileo/BDS: ILA Antenna<br/>NFC: Ferrite + FPC Antenna<br/>WPC: Flex Pattern Antenna</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Standards-related Product Specification |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type of Modulation</b>               | GSM / GPRS: GMSK<br>EGPRS: GMSK for MCS 0 ~ 4 & 8PSK for MCS5 ~9<br>WCDMA: QPSK (Uplink)<br>HSDPA: 64QAM (Downlink) / HSUPA : QPSK (Uplink)<br>CDMA2000 : QPSK<br>LTE: QPSK / 16QAM / 64QAM<br>5G NR: QPSK / 16QAM / 64QAM<br>802.11b: DSSS (DBPSK / DQPSK / CCK)<br>802.11a/g/n/ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)<br>802.11ax: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)<br>Bluetooth LE: GFSK<br>Bluetooth (1Mbps): GFSK<br>Bluetooth (2Mbps): $\pi/4$ -DQPSK<br>Bluetooth (3Mbps): 8-DPSK<br>GPS/Glonass/Galileo/BDS: BPSK<br>NFC: ASK<br>WPC: load |

### 1.3. Modification of EUT

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

## 1.4. Test Location

|                    |                                                                                                                       |
|--------------------|-----------------------------------------------------------------------------------------------------------------------|
| Test Site          | SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory                                                   |
| Test Site Location | No.52, Huaya 1st Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |
| Test Site No.      | <b>Sporton Site No.</b>                                                                                               |
|                    | CO05-HY                                                                                                               |

|                    |                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site          | SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory                                                                       |
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-0868<br>FAX: +886-3-327-0855 |
| Test Site No.      | <b>Sporton Site No.</b>                                                                                                                   |
|                    | 03CH10-HY                                                                                                                                 |

FCC designation No.: TW1093 and TW1098

## 1.5. 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 Class 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

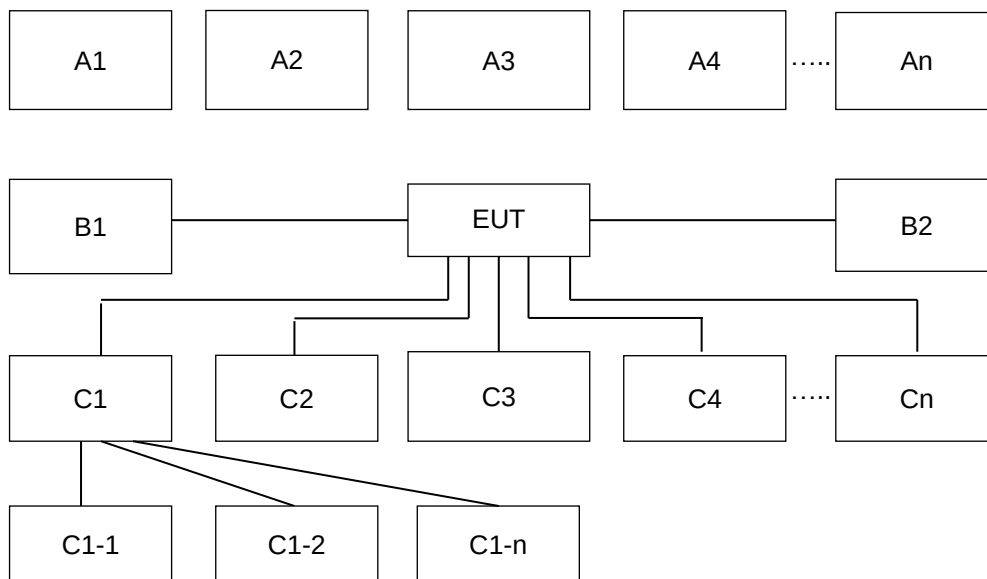
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

| Test Items                   | Function Type                                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AC Conducted Emission</b> | Mode 1: GSM850 (Middle Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Camera (Front) + Earphone + Battery + USB Cable 1 (Charging from Adapter 1)            |
|                              | Mode 2: CDMA2000 BC0 (Middle Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + Camera (Rear) + Earphone + Battery + USB Cable 2 (Charging from Adapter 2)         |
|                              | Mode 3: WCDMA Band V (Middle Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + MPEG4 + Earphone + Battery + USB Cable 1 (Charging from Adapter 1)               |
|                              | Mode 4: LTE Band 12 (Middle Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + NFC On + Earphone + Battery + USB Cable 2 (Charging from Adapter 2)                 |
|                              | Mode 5: LTE Band 13 (Middle Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook)               |
|                              | Mode 6: LTE Band 26 (Middle Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + MPEG4 + Earphone + Battery + USB Cable 2 (Data Link with Notebook)                  |
|                              | Mode 7: LTE Band 71 (Middle Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + MPEG4 + Earphone + Battery + WPC Charging pad + USB Cable (Charging from Adapter) |

| Test Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Function Type                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Radiated Emissions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mode 1 : GSM850 (Low Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Camera (Front) + Earphone + Battery + USB Cable 1 (Charging from Adapter 1)               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 2 : CDMA2000 BC0 (Middle Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + Camera (Rear) + Earphone + Battery + USB Cable 2 (Charging from Adapter 2)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 3 : WCDMA Band V (Low Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + MPEG4 + Earphone + Battery + USB Cable 1 (Charging from Adapter 1)                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 4 : LTE Band 12 (High Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + NFC On + Earphone + Battery + USB Cable 2 (Charging from Adapter 2)                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 5 : LTE Band 13 (Low Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook)                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 6 : LTE Band 26 (Low Channel) Idle + Bluetooth Idle + WLAN (5GHz) Idle + MPEG4 + Earphone + Battery + USB Cable 2 (Data Link with Notebook)                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode 7 : LTE Band 71 (Middle Channel) Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + MPEG4 + Earphone + Battery + WPC Charging pad + USB Cable (Charging from Adapter) |
| <b>Remark:</b> <ol style="list-style-type: none"> <li>1. The worst case of AC is mode 7; only the test data of this mode was reported.</li> <li>2. The worst case of RE is mode 4; only the test data of this mode was reported.</li> <li>3. For radiation emission after pre-scanned the cellular band between 30MHz ~ 960MHz (GSM850/WCDMA Band V/CDMA BC0/LTE Band 12/13/26/71); only the worst case for cellular band test data of this mode was reported.</li> <li>4. Data Link with Notebook means data application transferred mode between EUT and Notebook.</li> </ol> |                                                                                                                                                                      |

## 2.2. Connection Diagram of Test System



| Test Setup |                   |                         |           |   |   |   |   |   |   |
|------------|-------------------|-------------------------|-----------|---|---|---|---|---|---|
| No.        | Wireless Station  | Connection Type         | Test Mode |   |   |   |   |   |   |
|            |                   |                         | 1         | 2 | 3 | 4 | 5 | 6 | 7 |
| A1         | BT Earphone       | Bluetooth               | X         | X | X | X | X | X | X |
| A2         | System Simulator  | GSM/UMTS/CDMA/WCDMA/LTE | X         | X | X | X | X | X | X |
| A3         | GPS Station       | GPS                     | -         | - | - | - | X | - | - |
| A4         | AP router         | WiFi                    | X         | X | X | X | X | X | X |
| A5         | WPC pad           | WPC                     | -         | - | - | - | - | - | X |
| No.        | Power Source      | Connection Type         | 1         | 2 | 3 | 4 | 5 | 6 | 7 |
| B1         | AC : 120V/60Hz    | AC Power Cable          | X         | X | X | X | - | - | X |
| B2         | Power from system | AC Power Cable          | -         | - | - | - | X | X | - |
| No.        | Setup Peripherals | Connection Type         | 1         | 2 | 3 | 4 | 5 | 6 | 7 |
| C1         | Notebook          | USB Cable               | -         | - | - | - | X | X | - |
| C1-1       | iPod              | USB Cable to C1         | -         | - | - | - | X | X | - |
| C1-2       | AP router         | RJ-45 Cable to C1       | -         | - | - | - | X | X | - |
| C2         | Earphone          | Earphone jack           | X         | X | X | X | X | X | X |

## 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       | R&S           | CMU 200        | N/A         | N/A             | Unshielded, 1.8 m                                          |
| 2.   | System Simulator       | Anritsu       | MT8820C        | N/A         | N/A             | Unshielded, 1.8 m                                          |
| 3.   | System Simulator       | Anritsu       | MT8821C        | N/A         | N/A             | Unshielded, 1.8 m                                          |
| 4.   | GPS Station            | Pendulum      | GSG-54         | N/A         | N/A             | Unshielded, 1.8 m                                          |
| 5.   | Wireless Charger Stand | Samsung       | EP-N5200       | N/A         | N/A             | N/A                                                        |
| 6.   | Adapter                | N/A           | N/A            | N/A         | N/A             | N/A                                                        |
| 7.   | USB Cable              | N/A           | N/A            | N/A         | N/A             | N/A                                                        |
| 8.   | Bluetooth Earphone     | Sony Ericsson | MW600          | PY7DDA-2029 | N/A             | N/A                                                        |
| 9.   | Earphone               | Motorola      | SH38C37773     | N/A         | Shielded, 1.0 m | N/A                                                        |
| 10.  | WLAN AP                | ASUS          | RT-AC66U       | MSQ-RTAC66U | N/A             | Unshielded, 1.8 m                                          |
| 11.  | iPod                   | Apple         | A1285          | FCC DoC     | Shielded, 1.0 m | N/A                                                        |
| 12.  | Notebook               | DELL          | Latitude E3400 | FCC DoC     | N/A             | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 13.  | Notebook               | DELL          | Latitude 5480  | FCC DoC     | N/A             | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 14.  | LG Charging pad        | LG            | WCD-110        | FCC DoC     | Shielded, 0.5 m | N/A                                                        |

## 2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA or EDGE or HSDPA or LTE or CDMA2000 idle mode during the testing. The EUT was synchronized with the BCCH, and had been continuous receiving mode by setting paging reorganization of the system simulator.

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 Laptop and EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Video player" to play MPEG4 files.
4. Turn on camera to capture images.
5. Turn on NFC function.

### 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.

<Class B>

| 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.

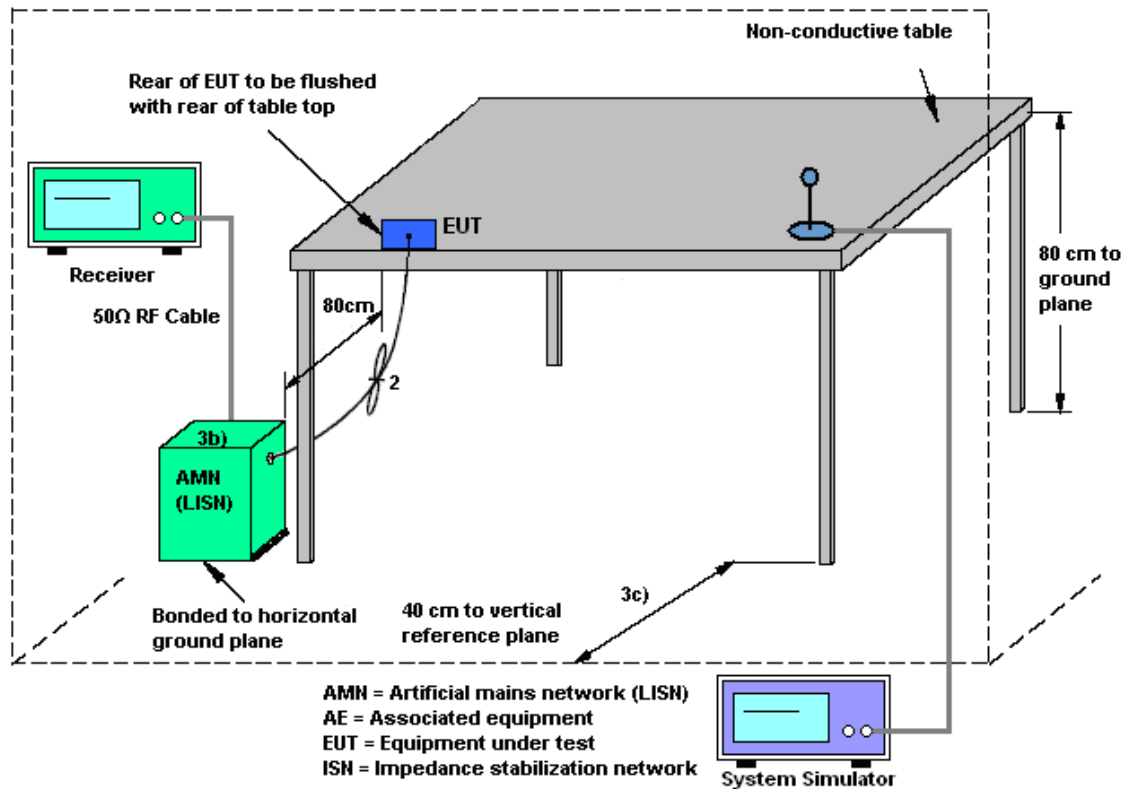
##### 3.1.2. Measuring Instruments

Refer a test equipment and calibration data table in 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

Please refer to Appendix A.

## 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:

<Class B>

| 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

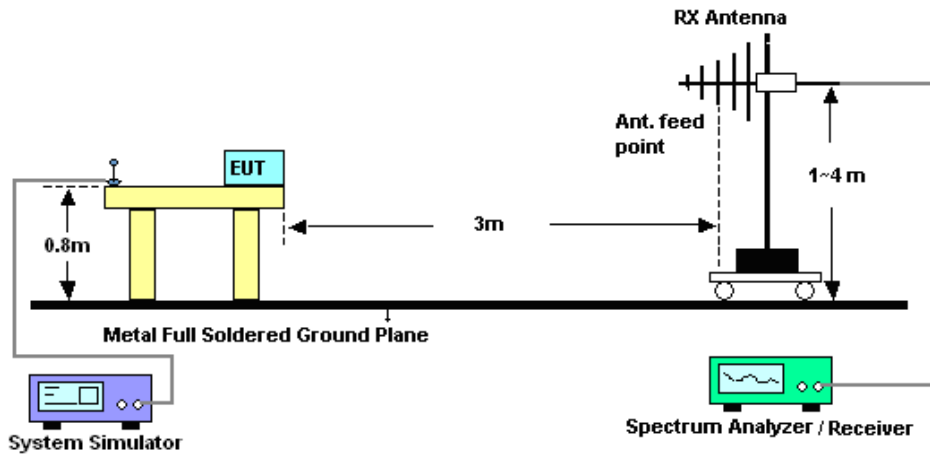
Refer a test equipment and calibration data table in this test report.

### 3.2.3. Test Procedures

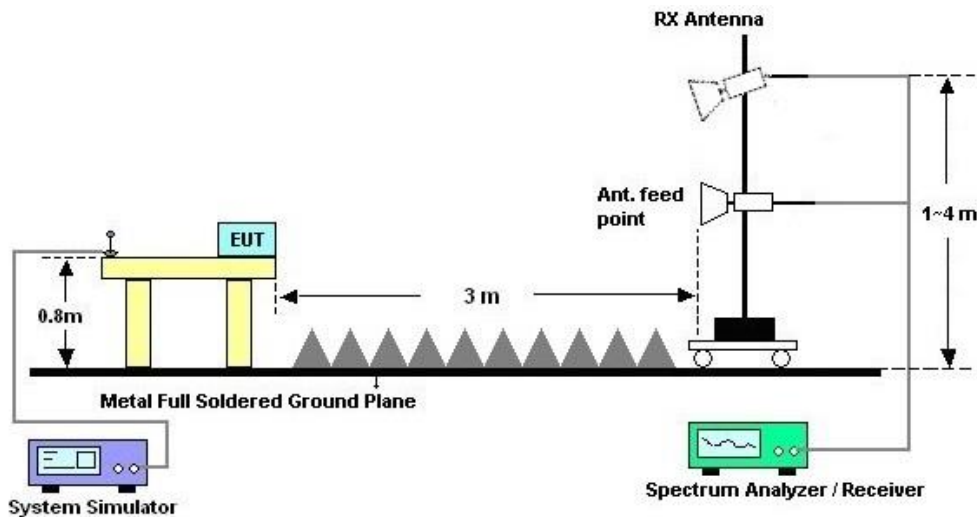
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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

Please refer to Appendix B.



## 4. List of Measuring Equipment

| Instrument        | Manufacturer    | Model No.                  | Serial No.                         | Characteristics               | Calibration Date | Test Date                   | Due Date      | Remark                |
|-------------------|-----------------|----------------------------|------------------------------------|-------------------------------|------------------|-----------------------------|---------------|-----------------------|
| Amplifier         | SONOMA          | 310N                       | 187311                             | 9kHz~1GHz                     | Oct. 22, 2019    | Jan. 22, 2020               | Oct. 21, 2020 | Radiation (03CH10-HY) |
| Bilog Antenna     | TESEQ           | CBL 6111D & 00800N1D01N-06 | 35413 & 02                         | 30MHz~1GHz                    | Feb. 12, 2019    | Jan. 22, 2020               | Feb. 11, 2020 | Radiation (03CH10-HY) |
| Horn Antenna      | SCHWARZBECK     | BBHA 9120 D                | 9120D-1325                         | 1GHz~18GHz                    | Oct. 09, 2019    | Jan. 22, 2020               | Oct. 08, 2020 | Radiation (03CH10-HY) |
| Preamplifier      | Jet-Power       | JAP00101800-30-10P         | 160118550004                       | 1GHz~18GHz                    | Sep. 27, 2019    | Jan. 22, 2020               | Sep. 26, 2020 | Radiation (03CH10-HY) |
| Signal Analyzer   | R&S             | FSV3044                    | 101010                             | 10Hz~44GHz                    | Nov. 11, 2019    | Jan. 22, 2020               | Nov. 10, 2020 | Radiation (03CH10-HY) |
| Controller        | EMEC            | EM 1000                    | N/A                                | Control Turn table & Ant Mast | N/A              | Jan. 22, 2020               | N/A           | Radiation (03CH10-HY) |
| Antenna Mast      | EMEC            | AM-BS-4500-B               | N/A                                | 1~4m                          | N/A              | Jan. 22, 2020               | N/A           | Radiation (03CH10-HY) |
| Turn Table        | EMEC            | TT 2200                    | N/A                                | 0~360 Degree                  | N/A              | Jan. 22, 2020               | N/A           | Radiation (03CH10-HY) |
| Software          | Audix           | E3<br>6.2009-8-24          | RK-001042                          | N/A                           | N/A              | Jan. 22, 2020               | N/A           | Radiation (03CH10-HY) |
| EMI Test Receiver | Agilent         | N9038A(MXE)                | MY53290045                         | 20MHz~8.4GHz                  | Jan. 18, 2020    | Jan. 22, 2020               | Jan. 17, 2021 | Radiation (03CH10-HY) |
| RF Cable          | HUBER + SUHNER  | SUCOFLEX 104 / 102         | MY11692/4PE, MY11693/4PE, MY2855/2 | 30MHz~1GHz                    | Nov. 07, 2019    | Jan. 22, 2020               | Nov. 06, 2020 | Radiation (03CH10-HY) |
| RF Cable          | HUBER + SUHNER  | SUCOFLEX 104 / 102         | MY11692/4PE, MY11693/4PE, MY2855/2 | 1GHz~18GHz                    | Nov. 07, 2019    | Jan. 22, 2020               | Nov. 06, 2020 | Radiation (03CH10-HY) |
| AC Power Source   | ChainTek        | APC-1000W                  | N/A                                | N/A                           | N/A              | Jan. 27, 2020~Jan. 30, 2020 | N/A           | Conduction (CO05-HY)  |
| EMI Test Receiver | Rohde & Schwarz | ESR3                       | 102388                             | 9kHz~3.6GHz                   | Nov. 15, 2019    | Jan. 27, 2020~Jan. 30, 2020 | Nov. 14, 2020 | Conduction (CO05-HY)  |
| Hygrometer        | Testo           | 608-H1                     | 34913912                           | N/A                           | Mar. 19, 2019    | Jan. 27, 2020~Jan. 30, 2020 | Mar. 18, 2020 | Conduction (CO05-HY)  |
| LISN              | Rohde & Schwarz | ENV216                     | 100080                             | 9kHz~30MHz                    | Nov. 20, 2019    | Jan. 27, 2020~Jan. 30, 2020 | Nov. 19, 2020 | Conduction (CO05-HY)  |
| LISN              | Rohde & Schwarz | ENV216                     | 100081                             | 9kHz~30MHz                    | Nov. 15, 2019    | Jan. 27, 2020~Jan. 30, 2020 | Nov. 14, 2020 | Conduction (CO05-HY)  |
| Software          | Rohde & Schwarz | EMC32 V10.30               | N/A                                | N/A                           | N/A              | Jan. 27, 2020~Jan. 30, 2020 | N/A           | Conduction (CO05-HY)  |
| LF Cable          | HUBER + SUHNER  | RG-214/U                   | LF01                               | N/A                           | Jan. 02, 2020    | Jan. 27, 2020~Jan. 30, 2020 | Jan. 01, 2021 | Conduction (CO05-HY)  |
| Pulse Limiter     | Rohde & Schwarz | ESH3-Z2                    | 100851                             | N/A                           | Jan. 02, 2020    | Jan. 27, 2020~Jan. 30, 2020 | Jan. 01, 2021 | Conduction (CO05-HY)  |

## 5. Uncertainty of Evaluation

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

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 2.0 |
|----------------------------------------------------------------------------|-----|

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

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 4.8 |
|----------------------------------------------------------------------------|-----|

### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Measuring Uncertainty for a Level of Confidence<br>of 95% ( $U = 2Uc(y)$ ) | 5.3 |
|----------------------------------------------------------------------------|-----|



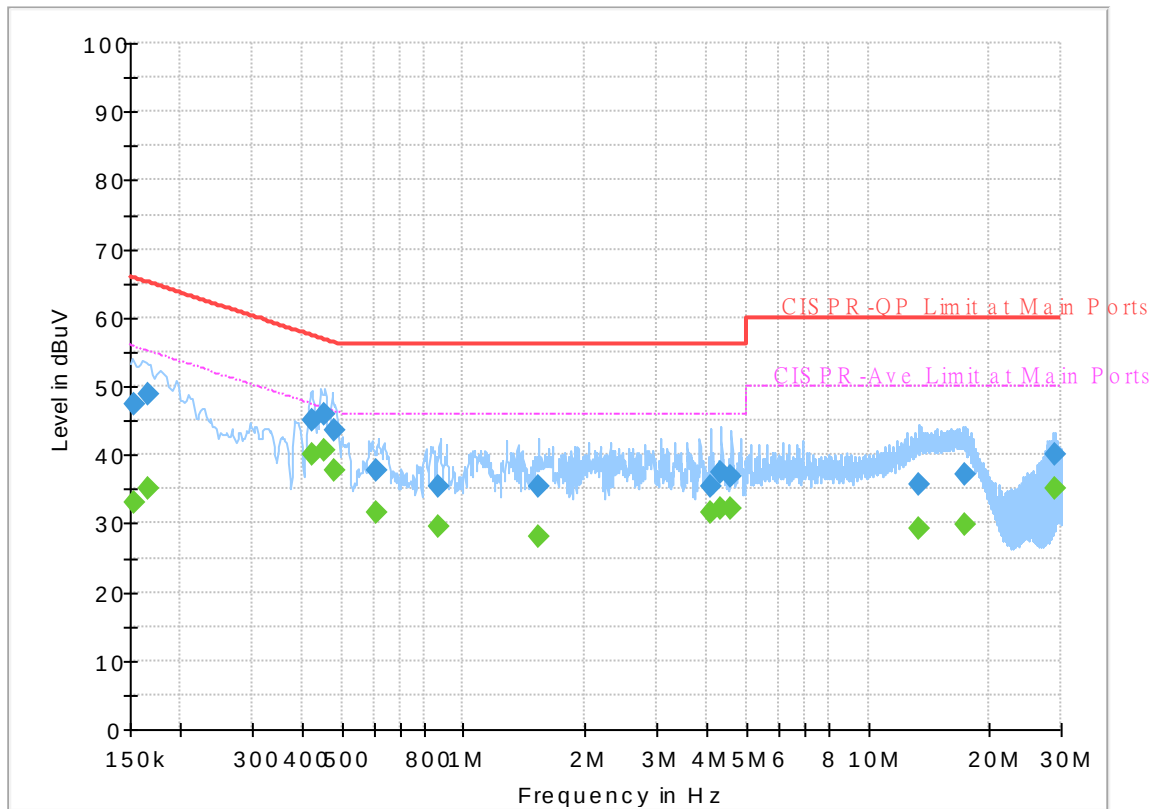
## Appendix A. AC Conducted Emission Test Results

|                 |                          |                     |        |
|-----------------|--------------------------|---------------------|--------|
| Test Engineer : | Howard Huang and Tom Lee | Temperature :       | 21~24℃ |
|                 |                          | Relative Humidity : | 40~49% |

## EUT Information

Report NO : 9D0635-01  
 Test Mode : Mode 7  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



## Final Result

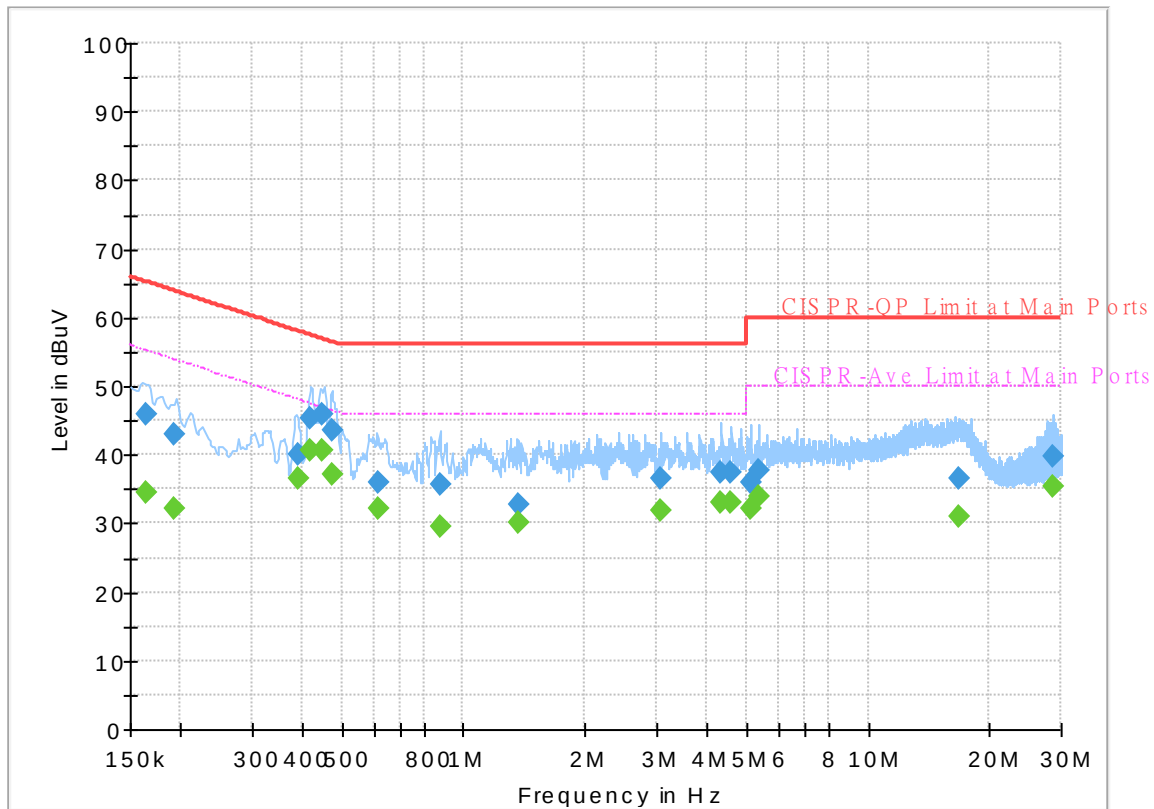
| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.153375        | ---              | 32.90           | 55.82        | 22.92       | L1   | OFF    | 19.5       |
| 0.153375        | 47.47            | ---             | 65.82        | 18.35       | L1   | OFF    | 19.5       |
| 0.166920        | ---              | 35.20           | 55.11        | 19.91       | L1   | OFF    | 19.5       |
| 0.166920        | 48.82            | ---             | 65.11        | 16.29       | L1   | OFF    | 19.5       |
| 0.420990        | ---              | 40.16           | 47.43        | 7.27        | L1   | OFF    | 19.5       |
| 0.420990        | 44.97            | ---             | 57.43        | 12.46       | L1   | OFF    | 19.5       |
| 0.450690        | ---              | 40.51           | 46.86        | 6.35        | L1   | OFF    | 19.5       |
| 0.450690        | 46.03            | ---             | 56.86        | 10.83       | L1   | OFF    | 19.5       |
| 0.478500        | ---              | 37.65           | 46.37        | 8.72        | L1   | OFF    | 19.5       |
| 0.478500        | 43.58            | ---             | 56.37        | 12.79       | L1   | OFF    | 19.5       |
| 0.611250        | ---              | 31.59           | 46.00        | 14.41       | L1   | OFF    | 19.5       |
| 0.611250        | 37.63            | ---             | 56.00        | 18.37       | L1   | OFF    | 19.5       |
| 0.870270        | ---              | 29.57           | 46.00        | 16.43       | L1   | OFF    | 19.5       |
| 0.870270        | 35.49            | ---             | 56.00        | 20.51       | L1   | OFF    | 19.5       |
| 1.533300        | ---              | 28.05           | 46.00        | 17.95       | L1   | OFF    | 19.6       |
| 1.533300        | 35.39            | ---             | 56.00        | 20.61       | L1   | OFF    | 19.6       |
| 4.089480        | ---              | 31.55           | 46.00        | 14.45       | L1   | OFF    | 19.6       |
| 4.089480        | 35.46            | ---             | 56.00        | 20.54       | L1   | OFF    | 19.6       |
| 4.344990        | ---              | 32.25           | 46.00        | 13.75       | L1   | OFF    | 19.6       |
| 4.344990        | 37.46            | ---             | 56.00        | 18.54       | L1   | OFF    | 19.6       |
| 4.599960        | ---              | 32.30           | 46.00        | 13.70       | L1   | OFF    | 19.6       |

|           |       |       |       |       |    |     |      |
|-----------|-------|-------|-------|-------|----|-----|------|
| 4.599960  | 36.83 | ---   | 56.00 | 19.17 | L1 | OFF | 19.6 |
| 13.285500 | ---   | 29.11 | 50.00 | 20.89 | L1 | OFF | 19.8 |
| 13.285500 | 35.74 | ---   | 60.00 | 24.26 | L1 | OFF | 19.8 |
| 17.373750 | ---   | 29.82 | 50.00 | 20.18 | L1 | OFF | 19.8 |
| 17.373750 | 37.06 | ---   | 60.00 | 22.94 | L1 | OFF | 19.8 |
| 28.879620 | ---   | 35.11 | 50.00 | 14.89 | L1 | OFF | 19.8 |
| 28.879620 | 40.16 | ---   | 60.00 | 19.84 | L1 | OFF | 19.8 |

## EUT Information

Report NO : 9D0635-01  
 Test Mode : Mode 7  
 Test Voltage : 120Vac/60Hz  
 Phase : Neutral

Full Spectrum



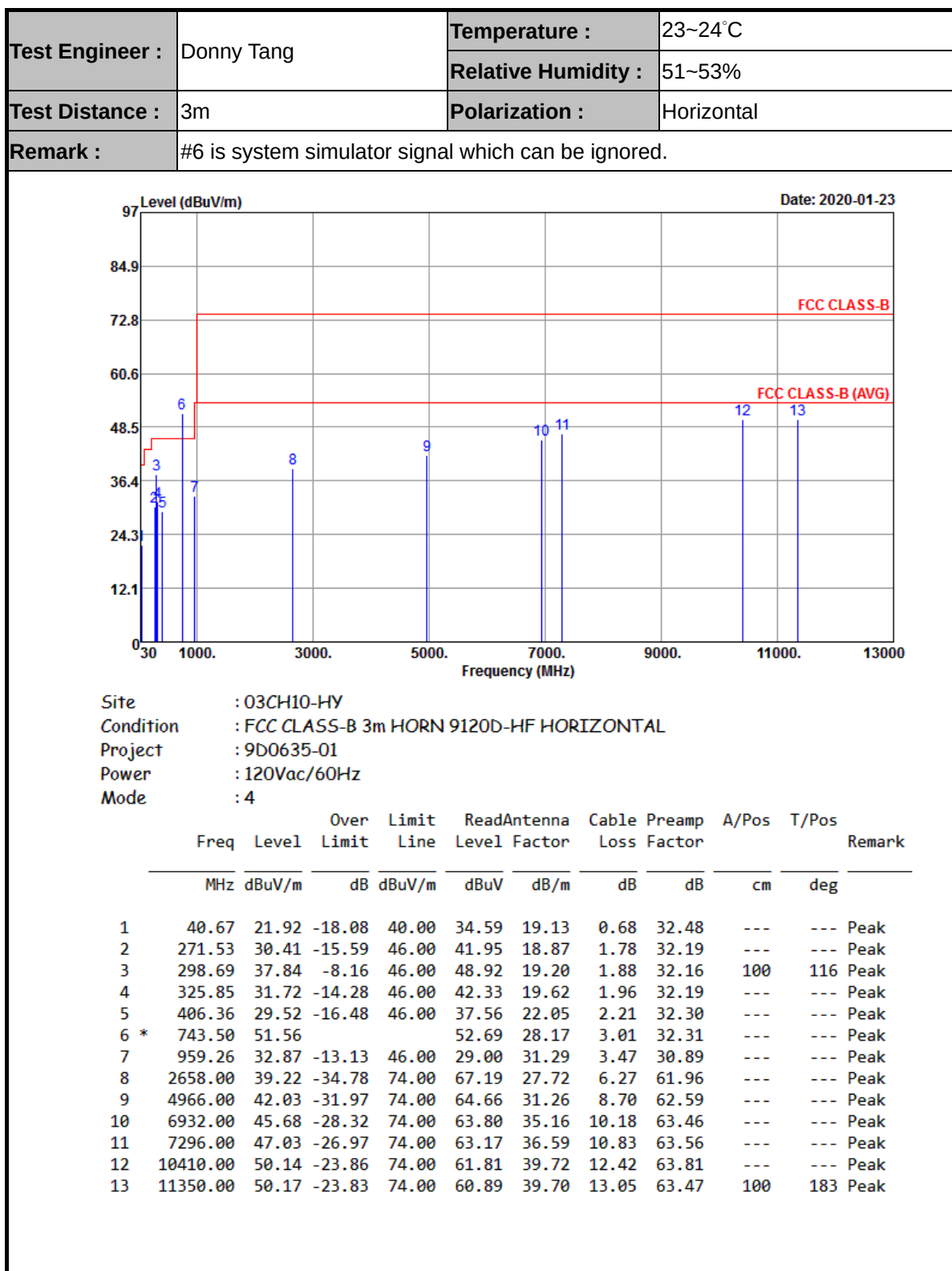
## Final Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.164400        | ---              | 34.38           | 55.24        | 20.86       | N    | OFF    | 19.6       |
| 0.164400        | 45.90            | ---             | 65.24        | 19.34       | N    | OFF    | 19.6       |
| 0.193380        | ---              | 32.10           | 53.89        | 21.79       | N    | OFF    | 19.6       |
| 0.193380        | 42.94            | ---             | 63.89        | 20.95       | N    | OFF    | 19.6       |
| 0.389760        | ---              | 36.58           | 48.07        | 11.49       | N    | OFF    | 19.6       |
| 0.389760        | 40.08            | ---             | 58.07        | 17.99       | N    | OFF    | 19.6       |
| 0.418830        | ---              | 40.52           | 47.47        | 6.95        | N    | OFF    | 19.6       |
| 0.418830        | 45.20            | ---             | 57.47        | 12.27       | N    | OFF    | 19.6       |
| 0.449250        | ---              | 40.78           | 46.89        | 6.11        | N    | OFF    | 19.6       |
| 0.449250        | 45.87            | ---             | 56.89        | 11.02       | N    | OFF    | 19.6       |
| 0.475170        | ---              | 37.02           | 46.42        | 9.40        | N    | OFF    | 19.6       |
| 0.475170        | 43.44            | ---             | 56.42        | 12.98       | N    | OFF    | 19.6       |
| 0.613410        | ---              | 32.11           | 46.00        | 13.89       | N    | OFF    | 19.6       |
| 0.613410        | 35.98            | ---             | 56.00        | 20.02       | N    | OFF    | 19.6       |
| 0.873690        | ---              | 29.66           | 46.00        | 16.34       | N    | OFF    | 19.6       |
| 0.873690        | 35.61            | ---             | 56.00        | 20.39       | N    | OFF    | 19.6       |
| 1.361940        | ---              | 30.07           | 46.00        | 15.93       | N    | OFF    | 19.6       |
| 1.361940        | 32.70            | ---             | 56.00        | 23.30       | N    | OFF    | 19.6       |
| 3.067080        | ---              | 31.89           | 46.00        | 14.11       | N    | OFF    | 19.7       |
| 3.067080        | 36.46            | ---             | 56.00        | 19.54       | N    | OFF    | 19.7       |
| 4.344720        | ---              | 33.02           | 46.00        | 12.98       | N    | OFF    | 19.7       |

|           |       |       |       |       |   |     |      |
|-----------|-------|-------|-------|-------|---|-----|------|
| 4.344720  | 37.45 | ---   | 56.00 | 18.55 | N | OFF | 19.7 |
| 4.600590  | ---   | 33.05 | 46.00 | 12.95 | N | OFF | 19.7 |
| 4.600590  | 37.35 | ---   | 56.00 | 18.65 | N | OFF | 19.7 |
| 5.110170  | ---   | 32.23 | 50.00 | 17.77 | N | OFF | 19.8 |
| 5.110170  | 36.02 | ---   | 60.00 | 23.98 | N | OFF | 19.8 |
| 5.367570  | ---   | 33.83 | 50.00 | 16.17 | N | OFF | 19.8 |
| 5.367570  | 37.60 | ---   | 60.00 | 22.40 | N | OFF | 19.8 |
| 16.729350 | ---   | 31.07 | 50.00 | 18.93 | N | OFF | 20.2 |
| 16.729350 | 36.46 | ---   | 60.00 | 23.54 | N | OFF | 20.2 |
| 28.623750 | ---   | 35.42 | 50.00 | 14.58 | N | OFF | 20.6 |
| 28.623750 | 39.72 | ---   | 60.00 | 20.28 | N | OFF | 20.6 |

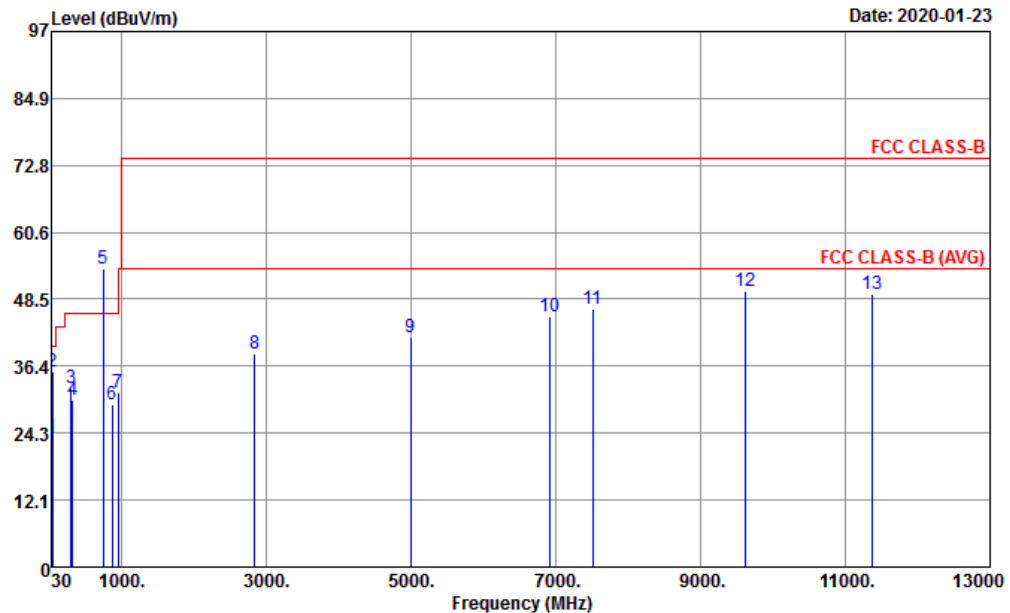


## Appendix B. Radiated Emission Test Result





|                 |                                                     |                     |          |
|-----------------|-----------------------------------------------------|---------------------|----------|
| Test Engineer : | Donny Tang                                          | Temperature :       | 23~24°C  |
|                 |                                                     | Relative Humidity : | 51~53%   |
| Test Distance : | 3m                                                  | Polarization :      | Vertical |
| Remark :        | #5 is system simulator signal which can be ignored. |                     |          |



Site : 03CH10-HY  
 Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL  
 Project : 9D0635-01  
 Power : 120Vac/60Hz  
 Mode : 4

|     | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | A/Pos | T/Pos | Remark   |
|-----|----------|--------|------------|------------|-------------------|--------------|-------------|-------|-------|----------|
|     | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m         | dB          | dB    | cm    | deg      |
| 1   | 33.88    | 23.63  | -16.37     | 40.00      | 32.45             | 23.05        | 0.61        | 32.48 | ---   | ---      |
| 2   | 40.67    | 35.44  | -4.56      | 40.00      | 48.11             | 19.13        | 0.68        | 32.48 | 100   | 56 QP    |
| 3   | 298.69   | 32.50  | -13.50     | 46.00      | 43.58             | 19.20        | 1.88        | 32.16 | ---   | ---      |
| 4   | 325.85   | 30.30  | -15.70     | 46.00      | 40.91             | 19.62        | 1.96        | 32.19 | ---   | ---      |
| 5 * | 743.50   | 54.00  |            |            | 55.13             | 28.17        | 3.01        | 32.31 | ---   | ---      |
| 6   | 869.05   | 29.37  | -16.63     | 46.00      | 28.63             | 29.20        | 3.29        | 31.75 | ---   | ---      |
| 7   | 952.47   | 31.70  | -14.30     | 46.00      | 28.11             | 31.10        | 3.45        | 30.96 | ---   | ---      |
| 8   | 2844.00  | 38.63  | -35.37     | 74.00      | 65.92             | 28.28        | 6.47        | 62.04 | ---   | ---      |
| 9   | 4994.00  | 41.59  | -32.41     | 74.00      | 64.07             | 31.38        | 8.74        | 62.60 | ---   | ---      |
| 10  | 6926.00  | 45.33  | -28.67     | 74.00      | 63.47             | 35.15        | 10.17       | 63.46 | ---   | ---      |
| 11  | 7514.00  | 46.69  | -27.31     | 74.00      | 63.05             | 36.47        | 10.77       | 63.60 | ---   | ---      |
| 12  | 9612.00  | 50.04  | -23.96     | 74.00      | 63.21             | 38.92        | 12.60       | 64.69 | 100   | 196 Peak |
| 13  | 11370.00 | 49.40  | -24.60     | 74.00      | 60.06             | 39.74        | 13.07       | 63.47 | ---   | ---      |

—————THE END—————