

# Variant FCC Test Report

**APPLICANT** : Motorola (Beijing) Mobility  
Technologies Co., LTd.  
**EQUIPMENT** : mobile phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : EX132  
**TYPE NAME** : DRQ6-334411B11  
**FCC ID** : IHDT56MQ2  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on May 13, 2011 and completely tested on May 15, 2011. We, SPORTON INTERNATIONAL (KUNSAHN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the 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.

Reviewed by:



---

Jones Tsai / Manager



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



## **TABLE OF CONTENTS**

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>REVISION HISTORY .....</b>                              | <b>3</b>  |
| <b>SUMMARY OF TEST RESULT .....</b>                        | <b>4</b>  |
| <b>1. GENERAL DESCRIPTION .....</b>                        | <b>5</b>  |
| 1.1. Applicant.....                                        | 5         |
| 1.2. Manufacturer .....                                    | 5         |
| 1.3. Feature of Equipment Under Test.....                  | 5         |
| 1.4. Test Site .....                                       | 6         |
| 1.5. Applied Standards .....                               | 6         |
| 1.6. Ancillary Equipment List.....                         | 6         |
| <b>2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST .....</b> | <b>7</b>  |
| 2.1. Test Mode .....                                       | 7         |
| 2.2. Connection Diagram of Test System .....               | 8         |
| 2.3. Test Software .....                                   | 9         |
| <b>3. TEST RESULT .....</b>                                | <b>10</b> |
| 3.1. Test of AC Conducted Emission Measurement .....       | 10        |
| 3.2. Test of Radiated Emission Measurement .....           | 14        |
| <b>4. LIST OF MEASURING EQUIPMENT .....</b>                | <b>18</b> |
| <b>5. UNCERTAINTY OF EVALUATION .....</b>                  | <b>19</b> |
| <b>APPENDIX A. PHOTOGRAPHS OF EUT</b>                      |           |
| <b>APPENDIX B. SETUP PHOTOGRAPHS</b>                       |           |
| <b>APPENDIX C. PRODUCT EQUALITY DECLARATION</b>            |           |
| <b>APPENDIX D. ORIGINAL REPORT</b>                         |           |

## REVISION HISTORY

| REPORT NO.  | VERSION | DESCRIPTION                                                                                                                                                                                                                                                                                                              | ISSUED DATE  |
|-------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| FD132121-02 | Rev. 01 | This is a variant report. Product equality declaration can be referred to appendix C. All the test cases were performed in original report which can be referred to Sporton Report No. FD132121 as appendix D. Based on original report, only the worst cases of radiated emission and conducted emission were verified. | May 19, 2011 |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |
|             |         |                                                                                                                                                                                                                                                                                                                          |              |

## SUMMARY OF TEST RESULT

| Report Section | FCC Rule | IC Rule | Description           | Limit                                                         | Result | Remark                                 |
|----------------|----------|---------|-----------------------|---------------------------------------------------------------|--------|----------------------------------------|
| 3.1            | 15.107   | 7.2.2   | AC Conducted Emission | < 15.107 limits<br>< RSS-Gen table 2 limits                   | PASS   | Under limit<br>14.56 dB at<br>2.59 MHz |
| 3.2            | 15.109   | 7.2.3.2 | Radiated Emission     | < 15.109 limits or<br>< RSS-Gen table 1 limits<br>(Section 6) | PASS   | Under limit<br>7.82 dB at<br>49.71 MHz |

# 1. General Description

## 1.1. Applicant

**Motorola (Beijing) Mobility Technologies Co., LTd.**

No.1 Wang Jing East Road, ChaoYang District, 100102 Beijing, P. R. China

## 1.2. Manufacturer

**Foxconn (TianJin) Precision Industry Co., Ltd.**

No. 207 Nanhai Road, TEDA.Tianjin, P.R. China, 300457

## 1.3. Feature of Equipment Under Test

| Product Feature & Specification |                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equipment</b>                | mobile phone                                                                                                                                                                |
| <b>Brand Name</b>               | Motorola                                                                                                                                                                    |
| <b>Model Name</b>               | EX132                                                                                                                                                                       |
| <b>Marketing Name</b>           | DRQ6-334411B11                                                                                                                                                              |
| <b>FCC ID</b>                   | IHDT56MQ2                                                                                                                                                                   |
| <b>Tx Frequency Range</b>       | GSM850 : 824 MHz ~ 849 MHz<br>GSM1900 : 1850 MHz ~ 1910 MHz<br>WCDMA Band V : 824 MHz ~ 849 MHz<br>WCDMA Band II : 1850 MHz ~ 1910 MHz<br>Bluetooth : 2400 MHz ~ 2483.5 MHz |
| <b>Rx Frequency Range</b>       | GSM850 : 869 MHz ~ 894 MHz<br>GSM1900 : 1930 MHz ~ 1990 MHz<br>WCDMA Band V : 869 MHz ~ 894 MHz<br>WCDMA Band II : 1930 MHz ~ 1990 MHz<br>Bluetooth : 2400 MHz ~ 2483.5 MHz |
| <b>Antenna Type</b>             | WWAN : Fixed Internal Antenna<br>Bluetooth : Chip Antenna                                                                                                                   |
| <b>HW Version</b>               | 3G_850/1900_S_NO OMTP AVON_MP_V1.0                                                                                                                                          |
| <b>SW Version</b>               | Avon_01.00.00.60R                                                                                                                                                           |
| <b>Type of Modulation</b>       | GSM / GPRS : GMSK<br>EDGE : 8PSK<br>WCDMA : QPSK<br>Bluetooth (1Mbps) : GFSK<br>Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK<br>Bluetooth EDR (3Mbps) : 8-DPSK                    |
| <b>EUT Stage</b>                | Production Unit                                                                                                                                                             |

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

## 1.4. Test Site

|                           |                                                                                                                  |           |
|---------------------------|------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Test Site</b>          | SPORTON INTERNATIONAL (KUNSHAN) INC.                                                                             |           |
| <b>Test Site Location</b> | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 |           |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                          |           |
|                           | CO01-KS                                                                                                          | 03CH01-KS |

## 1.5. Applied 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 C63.4-2003
- IC RSS-Gen Issue 3

### Remark:

- 1, All test items were verified and recorded according to the standards and without any deviation during the test.
- 2, This report is intention of applying for FCC 15B certification only.

## 1.6. Ancillary Equipment List

| Item | Equipment          | Trade Name | Model Name  | FCC ID            | Data Cable | Power Cord        |
|------|--------------------|------------|-------------|-------------------|------------|-------------------|
| 1.   | Base Station       | R&S        | CMU 200     | N/A               | N/A        | Unshielded, 1.8 m |
| 2.   | Signal Generator   | R&S        | SMR40       | N/A               | N/A        | Unshielded, 1.8 m |
| 3.   | Bluetooth Earphone | Nokia      | BH-102      | PYAHS-107W        | N/A        | N/A               |
| 4.   | Bluetooth Earphone | CELLINK    | BTHS-6025-F | PQY-4710874200357 | N/A        | N/A               |

## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

The following tables are showing the test modes as the worst cases and recorded in this report.

| Item | EUT Configuration                | Test Condition |           |           |
|------|----------------------------------|----------------|-----------|-----------|
|      |                                  | EMI AC         | EMI RE<1G | EMI RE≥1G |
| 1.   | Charging Mode (EUT with adapter) | ☒              | ☒         | ☒         |

#### Abbreviations:

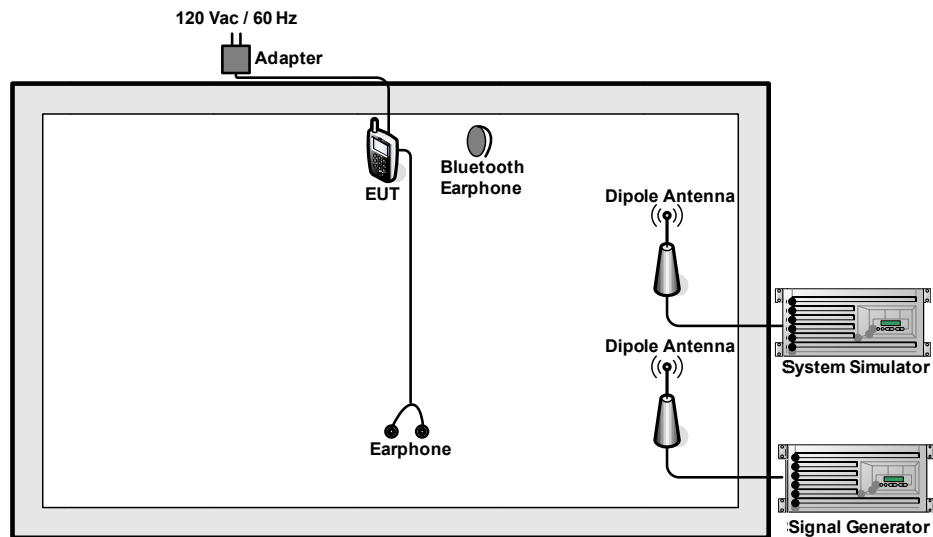
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

**Note 1:** Testing for this mode is not required or not the worst case.

| Test Items                | EUT Configure Mode | Function Type                                                              |
|---------------------------|--------------------|----------------------------------------------------------------------------|
| AC Conducted Emission     | 1                  | Mode 1: WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx |
| Radiated Emissions < 1GHz | 1                  | Mode 1: WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx |
| Radiated Emissions ≥ 1GHz | 1                  | Mode 1: WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx |

## 2.2. Connection Diagram of Test System

<EUT with Adapter Mode>





## **2.3. Test Software**

The EUT was in GSM or WCDMA or EDGE 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, the EUT receive signals from FM station continuously.

### 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.

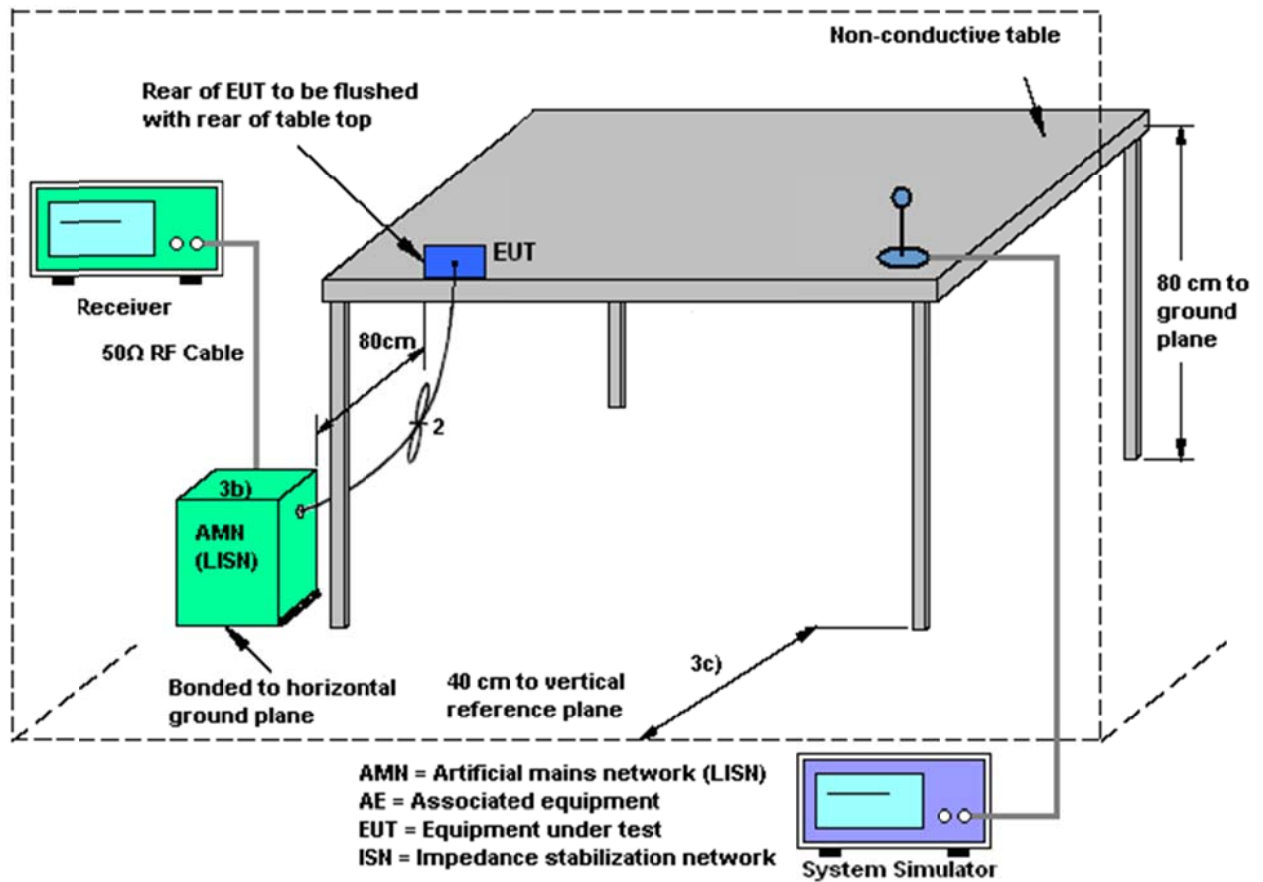
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedure

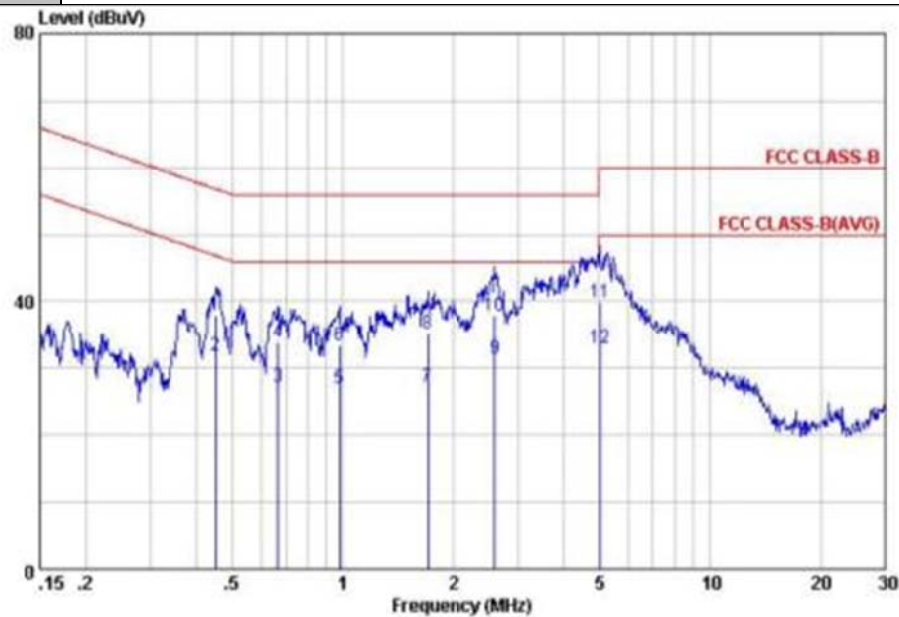
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 with Maximum Hold Mode.

### 3.1.4 Test Setup



**3.1.5 Test Result of AC Conducted Emission**

|                        |                                                                                 |                            |         |
|------------------------|---------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 1                                                                          | <b>Temperature :</b>       | 21~22°C |
| <b>Test Engineer :</b> | Chenmy Cheng                                                                    | <b>Relative Humidity :</b> | 40~41%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                   | <b>Phase :</b>             | Line    |
| <b>Function Type :</b> | WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx              |                            |         |
| <b>Remark :</b>        | All emissions not reported here are more than 10 dB below the prescribed limit. |                            |         |



Site : C001-K3  
Condition: FCC CLASS-B LISN-100807 LINE  
Project : (FD) 132121-02  
mode : Mode 1  
IMEI : 356452040000138

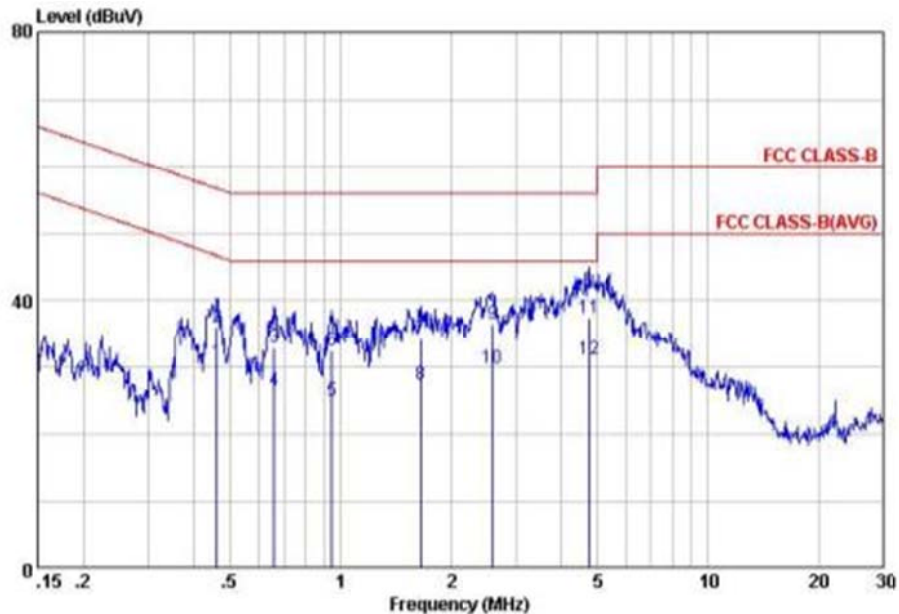
|    | Freq | Level | Over   | Limit | Read  | LISN   | Cable | Remark  |
|----|------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz  | dBuV  | Limit  | Line  | Level | Factor | Loss  |         |
|    | MHz  | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.45 | 37.92 | -18.93 | 56.85 | 27.80 | -0.08  | 10.20 | QP      |
| 2  | 0.45 | 31.92 | -14.93 | 46.85 | 21.80 | -0.08  | 10.20 | Average |
| 3  | 0.66 | 27.24 | -18.76 | 46.00 | 17.10 | -0.09  | 10.23 | Average |
| 4  | 0.66 | 33.94 | -22.06 | 56.00 | 23.80 | -0.09  | 10.23 | QP      |
| 5  | 0.98 | 26.86 | -19.14 | 46.00 | 16.70 | -0.10  | 10.26 | Average |
| 6  | 0.98 | 33.36 | -22.64 | 56.00 | 23.20 | -0.10  | 10.26 | QP      |
| 7  | 1.70 | 27.10 | -18.90 | 46.00 | 16.90 | -0.11  | 10.31 | Average |
| 8  | 1.70 | 35.10 | -20.90 | 56.00 | 24.90 | -0.11  | 10.31 | QP      |
| 9  | 2.59 | 31.44 | -14.56 | 46.00 | 21.19 | -0.11  | 10.36 | Average |
| 10 | 2.59 | 37.94 | -18.06 | 56.00 | 27.69 | -0.11  | 10.36 | QP      |
| 11 | 5.03 | 39.97 | -20.03 | 60.00 | 29.70 | -0.13  | 10.40 | QP      |
| 12 | 5.03 | 32.97 | -17.03 | 50.00 | 22.70 | -0.13  | 10.40 | Average |



## FCC Test Report

Report No. : FD132121-02

|                 |                                                                                 |                     |         |
|-----------------|---------------------------------------------------------------------------------|---------------------|---------|
| Test Mode :     | Mode 1                                                                          | Temperature :       | 21~22°C |
| Test Engineer : | Chenmy Cheng                                                                    | Relative Humidity : | 40~41%  |
| Test Voltage :  | 120Vac / 60Hz                                                                   | Phase :             | Neutral |
| Function Type : | WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx              |                     |         |
| Remark :        | All emissions not reported here are more than 10 dB below the prescribed limit. |                     |         |



Site : C001-KS  
Condition: FCC CLASS-B LISN-100807 NEUTRAL  
Project : (FD) 132121-02  
mode : Mode 1  
IMEI : 356452040000138

|    | Freq | Level | Over   | Limit | Read  | LISN   | Cable |         |
|----|------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz  | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    |      | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.46 | 30.72 | -15.95 | 46.67 | 20.60 | -0.08  | 10.20 | Average |
| 2  | 0.46 | 36.12 | -20.55 | 56.67 | 26.00 | -0.08  | 10.20 | QP      |
| 3  | 0.66 | 33.05 | -22.95 | 56.00 | 22.90 | -0.08  | 10.23 | QP      |
| 4  | 0.66 | 26.55 | -19.45 | 46.00 | 16.40 | -0.08  | 10.23 | Average |
| 5  | 0.95 | 24.97 | -21.03 | 46.00 | 14.80 | -0.09  | 10.26 | Average |
| 6  | 0.95 | 32.57 | -23.43 | 56.00 | 22.40 | -0.09  | 10.26 | QP      |
| 7  | 1.65 | 34.30 | -21.70 | 56.00 | 24.10 | -0.11  | 10.31 | QP      |
| 8  | 1.65 | 27.40 | -18.60 | 46.00 | 17.20 | -0.11  | 10.31 | Average |
| 9  | 2.59 | 36.44 | -19.56 | 56.00 | 26.19 | -0.11  | 10.36 | QP      |
| 10 | 2.59 | 29.94 | -16.06 | 46.00 | 19.69 | -0.11  | 10.36 | Average |
| 11 | 4.75 | 37.37 | -18.63 | 56.00 | 27.10 | -0.13  | 10.40 | QP      |
| 12 | 4.75 | 31.27 | -14.73 | 46.00 | 21.00 | -0.13  | 10.40 | Average |

## 3.2. Test of Radiated Emission Measurement

### 3.2.1. Limit of Radiated Emission

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

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490      | 2400/F(kHz)                          | 300                              |
| 0.490 – 1.705      | 24000/F(kHz)                         | 30                               |
| 1.705 – 30.0       | 30                                   | 30                               |
| 30 – 88            | 100                                  | 3                                |
| 88 – 216           | 150                                  | 3                                |
| 216 - 960          | 200                                  | 3                                |
| Above 960          | 500                                  | 3                                |

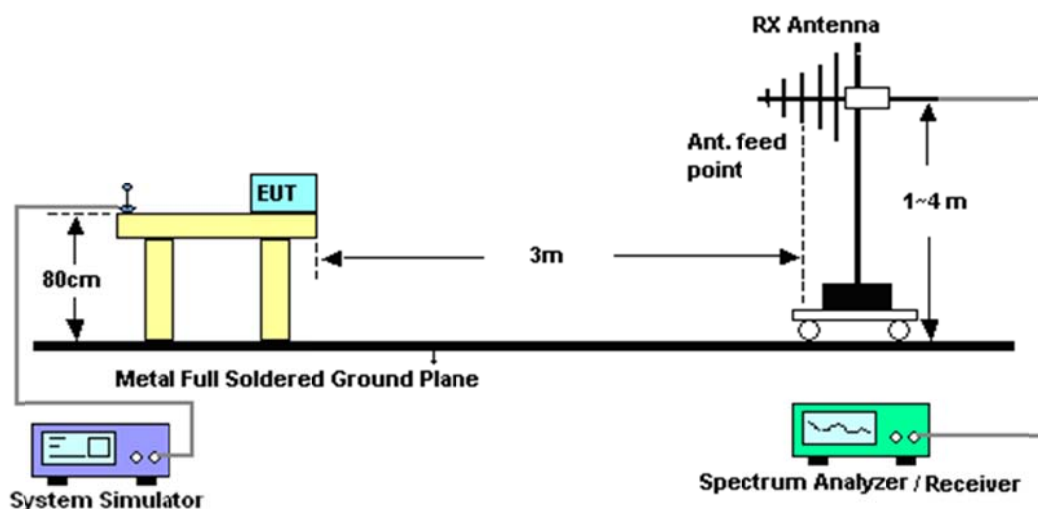
### 3.2.2. Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3. Test Procedures

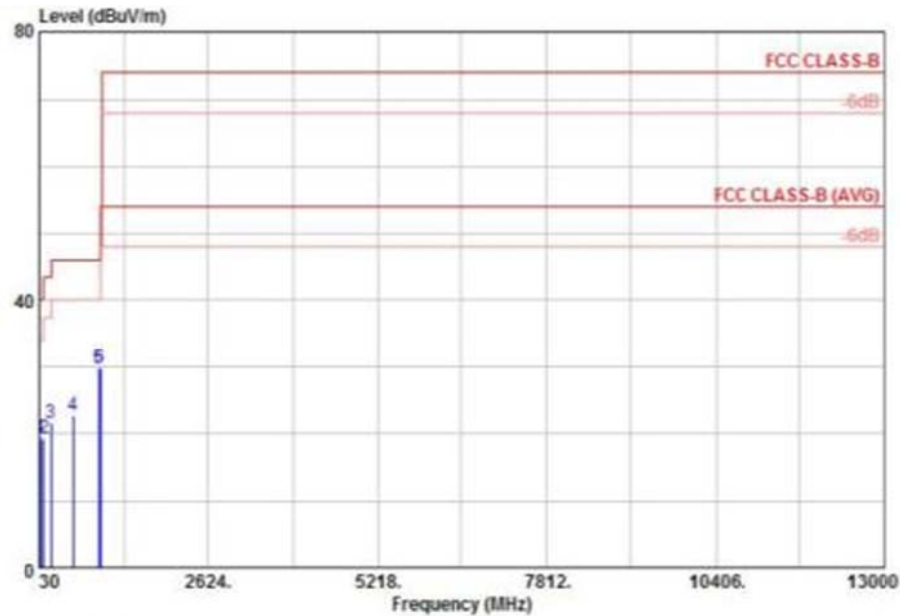
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one meter and 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.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission



**3.2.5. Test Result of Radiated Emission**

|                        |                                                                    |                            |            |
|------------------------|--------------------------------------------------------------------|----------------------------|------------|
| <b>Test Mode :</b>     | Mode 1                                                             | <b>Temperature :</b>       | 21~22°C    |
| <b>Test Engineer :</b> | Okey Yuan                                                          | <b>Relative Humidity :</b> | 43~44%     |
| <b>Test Distance :</b> | 3m                                                                 | <b>Polarization :</b>      | Horizontal |
| <b>Function Type :</b> | WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx |                            |            |



Site : 03CH01-KS  
Condition: FCC CLASS-B 3m LF\_ANT\_100803 HORIZONTAL  
Project : (FD) 132121-02  
Mode : mode 1

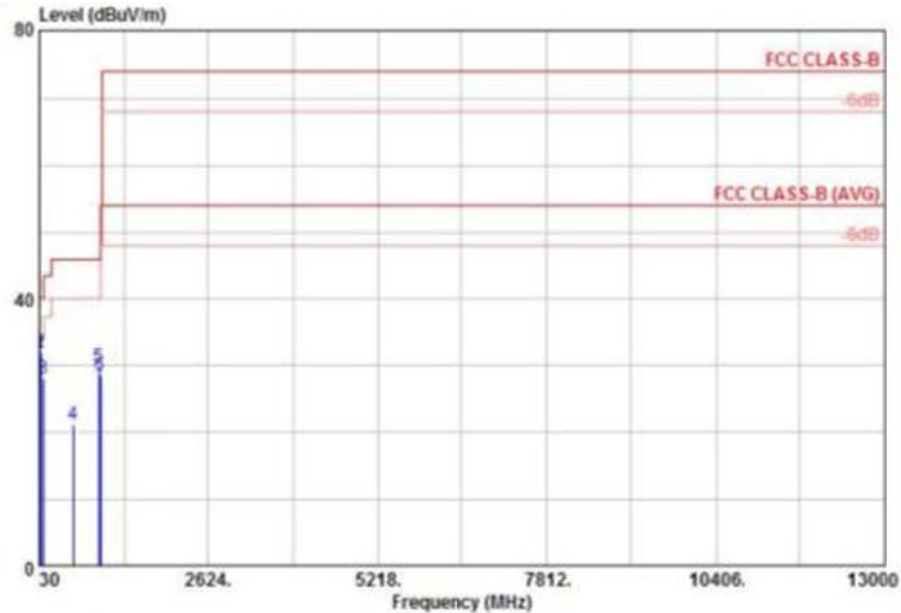
|   | Freq   | Level  | Over   | Limit  | ReadAntenna  | Cable       | Preamp | Ant   | Table |          |
|---|--------|--------|--------|--------|--------------|-------------|--------|-------|-------|----------|
|   | MHz    | dBuV/m | Limit  | Line   | Level Factor | Loss Factor | Factor | Pos   | Pos   | Remark   |
|   | MHz    | dBuV/m | dB     | dBuV/m | dBuV         | dB/m        | dB     | dB    | ca    | deg      |
| 1 | 51.33  | 19.44  | -20.56 | 40.00  | 42.08        | 7.21        | 0.28   | 30.13 | ---   | Peak     |
| 2 | 103.44 | 19.48  | -24.02 | 43.50  | 38.01        | 11.01       | 0.42   | 29.96 | ---   | Peak     |
| 3 | 211.17 | 21.59  | -21.91 | 43.50  | 41.44        | 9.54        | 0.60   | 29.99 | ---   | Peak     |
| 4 | 551.30 | 22.81  | -23.19 | 46.00  | 32.99        | 18.50       | 1.00   | 29.68 | ---   | Peak     |
| 5 | 936.30 | 29.86  | -16.14 | 46.00  | 37.40        | 20.67       | 1.32   | 29.53 | 100   | 360 Peak |
| 6 | 960.10 | 29.89  | -24.11 | 54.00  | 37.30        | 20.79       | 1.34   | 29.54 | ---   | Peak     |



## FCC Test Report

Report No. : FD132121-02

|                 |                                                                    |                     |          |
|-----------------|--------------------------------------------------------------------|---------------------|----------|
| Test Mode :     | Mode 1                                                             | Temperature :       | 21~22°C  |
| Test Engineer : | Okey Yuan                                                          | Relative Humidity : | 43~44%   |
| Test Distance : | 3m                                                                 | Polarization :      | Vertical |
| Function Type : | WCDMA Band II Idle + Bluetooth Idle + Adapter 1 + Earphone + FM Rx |                     |          |



Site : 03CB01-KS  
Condition: FCC CLASS-B 3m LF\_ANT\_100803 VERTICAL  
Project : (FD) 132121-02  
Mode : mode 1

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | Ant   | Table |          |
|---|--------|--------|--------|--------|-------------|-------|--------|-------|-------|----------|
|   | NHz    | dBuV/m | dB     | dBuV/m | Level       | Loss  | Factor | Pos   | Pos   | Remark   |
|   |        |        |        |        | dBuV        | dB/m  | dB     | dB    | ca    | deg      |
| 1 | 38.91  | 31.62  | -8.38  | 40.00  | 40.43       | 12.98 | 0.25   | 30.04 | ---   | Peak     |
| 2 | 49.71  | 32.18  | -7.82  | 40.00  | 54.28       | 7.75  | 0.28   | 30.13 | 100   | 360 Peak |
| 3 | 88.86  | 28.06  | -15.44 | 43.50  | 49.05       | 8.61  | 0.39   | 29.99 | ---   | Peak     |
| 4 | 551.30 | 21.09  | -24.91 | 46.00  | 31.27       | 18.50 | 1.00   | 29.68 | ---   | Peak     |
| 5 | 937.70 | 29.80  | -16.20 | 46.00  | 37.33       | 20.68 | 1.32   | 29.53 | ---   | Peak     |
| 6 | 960.10 | 28.50  | -25.50 | 54.00  | 35.91       | 20.79 | 1.34   | 29.54 | ---   | Peak     |

## 4. List of Measuring Equipment

| Instrument                | Manufacturer | Model No. | Serial No.       | Characteristics | Calibration Date | Due Date      | Remark                |
|---------------------------|--------------|-----------|------------------|-----------------|------------------|---------------|-----------------------|
| EMI Receiver              | R&S          | ESCI7     | 100768           | 9kHz~7GHz       | Jun. 22, 2010    | Jun. 21, 2011 | Conduction (CO01-KS)  |
| LISN                      | MessTec      | AN3016    | 60103            | 9kHz~30MHz      | Jan. 07, 2011    | Jan. 06, 2012 | Conduction (CO01-KS)  |
| LISN                      | MessTec      | AN3016    | 60105            | 9kHz~30MHz      | Jan. 07, 2011    | Jan. 06, 2012 | Conduction (CO01-KS)  |
| AC Power Source           | Chroma       | 61602     | ABP00000081<br>1 | N/A             | Nov. 10, 2010    | Nov. 09, 2011 | Conduction (CO01-KS)  |
| System Simulator          | R&S          | CMU200    | 837587/066       | Full-Band       | Jan. 07, 2011    | Jan. 06, 2012 | Conduction (CO01-KS)  |
| GPS Station               | T&E          | GS-50     | N/A              | N/A             | N/A              | N/A           | Conduction (CO01-KS)  |
| EMI Test Receiver         | R&S          | ESCI      | 100534           | 9kHz~3GHz       | Nov. 16, 2010    | Nov. 15, 2011 | Radiation (03CH01-KS) |
| Spectrum Analyzer         | R&S          | FSP40     | 100319           | 9kHz~40GHz      | Jan. 07, 2010    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Bilog Antenna             | SCHAFFNER    | CBL6112D  | 23182            | 25MHz~2GHz      | Dec. 07, 2010    | Dec. 06, 2011 | Radiation (03CH01-KS) |
| Double Ridge Horn Antenna | EMCO         | 3117      | 00075959         | 1MHz~18GHz      | Jan. 07, 2010    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Amplifier                 | Wireless     | FPA-6592G | 060004           | 30MHz~2GHz      | Dec. 09, 2010    | Dec. 08, 2011 | Radiation (03CH01-KS) |
| Amplifier                 | Agilent      | 8449B     | 3008A02370       | 1GHz~26.5GHz    | Jan. 07, 2010    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Active horn antenna       | com-power    | AHA-118   | 701023           | 1G-18GHz        | Nov. 09, 2010    | Nov. 08, 2011 | Radiation (03CH01-KS) |
| Signal Generator          | R&S          | SMR40     | 100455           | 10G-40GHz       | Jan. 06, 2010    | Jan. 05, 2012 | Radiation (03CH01-KS) |
| SHE-EHF Horn              | Schwarzbeck  | BBHA9170  | BBHA170249       | 15-40GHz        | Oct. 15, 2010    | Oct. 14, 2011 | Radiation (03CH01-KS) |
| Loop Antenna              | R&S          | HFH2-Z2   | 860004/00        | 9G-30GHz        | Jul. 29, 2010    | Jul. 28, 2011 | Radiation (03CH01-KS) |
| Bluetooth Base Station    | R&S          | CBT       | 100783           | N/A             | Aug. 17, 2010    | Aug. 16, 2011 | Radiation (03CH01-KS) |

## 5. Uncertainty of Evaluation

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

| Contribution                                                                             | Uncertainty of $X_i$ |                          | $u(X_i)$ |
|------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                          | dB                   | Probability Distribution |          |
| Receiver Reading                                                                         | 0.10                 | Normal (k=2)             | 0.05     |
| Cable Loss                                                                               | 0.10                 | Normal (k=2)             | 0.05     |
| AMN Insertion Loss                                                                       | 2.50                 | Rectangular              | 0.63     |
| Receiver Specification                                                                   | 1.50                 | Rectangular              | 0.43     |
| Site Imperfection                                                                        | 1.39                 | Rectangular              | 0.80     |
| Mismatch                                                                                 | +0.34 / -0.35        | U-Shape                  | 0.24     |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                 | <b>1.13</b>          |                          |          |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b> | <b>2.26</b>          |                          |          |

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

| Contribution                                                                             | Uncertainty of $X_i$ |                          | $u(X_i)$ |
|------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                          | dB                   | Probability Distribution |          |
| Receiver Reading                                                                         | 0.41                 | Normal (k=2)             | 0.21     |
| Antenna Factor Calibration                                                               | 0.83                 | Normal (k=2)             | 0.42     |
| Cable Loss Calibration                                                                   | 0.25                 | Normal (k=2)             | 0.13     |
| Pre-Amplifier Gain Calibration                                                           | 0.27                 | Normal (k=2)             | 0.14     |
| RCV/SPA Specification                                                                    | 2.50                 | Rectangular              | 0.72     |
| Antenna Factor Interpolation for Frequency                                               | 1.00                 | Rectangular              | 0.29     |
| Site Imperfection                                                                        | 1.43                 | Rectangular              | 0.83     |
| Mismatch                                                                                 | +0.39 / -0.41        | U-Shape                  | 0.28     |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                 | <b>1.27</b>          |                          |          |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b> | <b>2.54</b>          |                          |          |

**Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)**

| Contribution                                                                                                                         | Uncertainty of $X_i$ |                          | $u(X_i)$ | $C_i$ | $C_i * u(X_i)$ |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|-------|----------------|
|                                                                                                                                      | dB                   | Probability Distribution |          |       |                |
| Receiver Reading                                                                                                                     | $\pm 0.10$           | Normal (k=2)             | 0.10     | 1     | 0.10           |
| Antenna Factor Calibration                                                                                                           | $\pm 1.70$           | Normal (k=2)             | 0.85     | 1     | 0.85           |
| Cable Loss Calibration                                                                                                               | $\pm 0.50$           | Normal (k=2)             | 0.25     | 1     | 0.25           |
| Receiver Correction                                                                                                                  | $\pm 2.00$           | Rectangular              | 1.15     | 1     | 1.15           |
| Antenna Factor Directional                                                                                                           | $\pm 1.50$           | Rectangular              | 0.87     | 1     | 0.87           |
| Site Imperfection                                                                                                                    | $\pm 2.80$           | Triangular               | 1.14     | 1     | 1.14           |
| Mismatch<br>Receiver VSWR $\Gamma_1 = 0.197$<br>Antenna VSWR $\Gamma_2 = 0.194$<br>Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$ | +0.34 / -0.35        | U-Shape                  | 0.244    | 1     | 0.244          |
| <b>Combined Standard Uncertainty<br/><math>U_c(y)</math></b>                                                                         | <b>2.36</b>          |                          |          |       |                |
| <b>Measuring Uncertainty for a<br/>Level of Confidence of 95%<br/>(<math>U = 2U_c(y)</math>)</b>                                     | <b>4.72</b>          |                          |          |       |                |



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP132121-02 as below.



## **Appendix C. Product Equality Declaration**

# Foxconn(Nanjing)Telcommunications Co.,Ltd

A-2FMinfang Building No.189 Guangzhou Rd Nanjing China

Date: May 6, 2011

## Product Equality Declaration

We, Foxconn(Nanjing)Telcommunications Co.,Ltd, declare on our sole responsibility for the product of **EX132(GSM Quad Band,WCDMA 1900/850)and EX132(GSM Quad Band,WCDMA 2100/850** as below:

The differences between **EX132(GSM Quad Band,WCDMA 1900/850)** and model **EX132(GSM Quad Band,WCDMA 2100/850)** are as below:

### HW parts:

**EX132(GSM Quad Band,WCDMA 1900/850)**

TX SAW—U1205 (SAFEA1G88KB7F00R14)

RF PA—U1202 (RFMD RF7206)

Duplexer—U1204 (SAYFP1G88CA0B00R05)

R1092 NC, And R1091 (0ohm)

R1095, R1096 NC, And R1093, R1094 (0ohm)

L1004 (6.8nH)

**EX132(GSM Quad Band,WCDMA 2100/850)**

TX SAW—U1205 (SAFEA1G95KA0F00R14)

RF PA—U1202 (RFMD RF7200)

Duplexer—U1204 (SAYFP1G95CA0B00R05)

R1092 (0ohm), And R1091 NC

R1095, R1096 (0ohm), And R1093, R1094 NC

L1004 (3.0nH)

### ME Parts:

**EX132 (GSM Quad Band, WCDMA 1900/850)**

Antenna—850/1900 (S0A00182010-001)

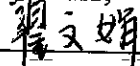
**EX132 (GSM Quad Band, WCDMA 2100/850)**

Antenna—850/2100(S0A00181010-001)

Except listings above, the others are all the same as **EX132 (GSM Quad Band, WCDMA 2100/850)**.

Should you have any questions or comments regarding this matter, please have my best attention.

Sincerely yours,

 (Signature)

Contact Person: Viola zhai

Company: Foxconn(Nanjing)Telcommunications Co.,Ltd

Tel:+86 25 86 9999 88-60443

Fax: +86 25 86 9999 88-60227

E-Mail: viola.w.j.zhai@foxconn.com



## **Appendix D. Original Report**

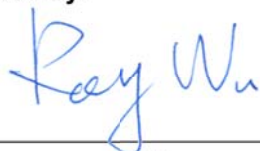
# FCC Test Report

**APPLICANT** : Motorola (Beijing) Mobility Technologies Co. LTd.  
**EQUIPMENT** : mobile phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : EX132  
**Type name** : DWQ6-334411A11  
**FCC ID** : IHDT56MQ1  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Mar. 21, 2011 and completely tested on Mar. 31, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the 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.

Reviewed by:



Roy Wu / Manager



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

## TABLE OF CONTENTS

|                                                      |    |
|------------------------------------------------------|----|
| REVISION HISTORY .....                               | 3  |
| SUMMARY OF TEST RESULT .....                         | 4  |
| 1. GENERAL DESCRIPTION .....                         | 5  |
| 1.1. Applicant.....                                  | 5  |
| 1.2. Manufacturer .....                              | 5  |
| 1.3. Feature of Equipment Under Test.....            | 5  |
| 1.4. Test Site .....                                 | 6  |
| 1.5. Applied Standards .....                         | 6  |
| 1.6. Ancillary Equipment List.....                   | 7  |
| 2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST .....  | 8  |
| 2.1. Test Mode .....                                 | 8  |
| 2.2. Connection Diagram of Test System .....         | 10 |
| 2.3. Test Software .....                             | 11 |
| 3. TEST RESULT .....                                 | 12 |
| 3.1. Test of AC Conducted Emission Measurement ..... | 12 |
| 3.2. Test of Radiated Emission Measurement .....     | 16 |
| 4. LIST OF MEASURING EQUIPMENT .....                 | 20 |
| 5. UNCERTAINTY OF EVALUATION .....                   | 21 |

## REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION                                                           | ISSUED DATE   |
|------------|---------|-----------------------------------------------------------------------|---------------|
| FC132121   | Rev. 01 | Initial issue of report                                               | Apr. 29, 2011 |
| FC132121   | Rev. 02 | Update report for changing hw version                                 | May 05, 2011  |
| FC132121   | Rev. 03 | Update report for adding setup photo above 1GHz and JBP configuration | Jun. 02, 2011 |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |
|            |         |                                                                       |               |

## SUMMARY OF TEST RESULT

| Report Section | FCC Rule | IC Rule | Description           | Limit                                                         | Result | Remark                                  |
|----------------|----------|---------|-----------------------|---------------------------------------------------------------|--------|-----------------------------------------|
| 3.1            | 15.107   | 7.2.2   | AC Conducted Emission | < 15.107 limits<br>< RSS-Gen table 2 limits                   | PASS   | Under limit<br>11.19 dB at<br>1.88 MHz  |
| 3.2            | 15.109   | 7.2.3.2 | Radiated Emission     | < 15.109 limits or<br>< RSS-Gen table 1 limits<br>(Section 6) | PASS   | Under limit<br>6.42 dB at<br>345.50 MHz |

# 1. General Description

## 1.1. Applicant

**Motorola (Beijing) Mobility Technologies Co. LTd.**

No. 1, Wang Jing East Road, Chao Yang District, 100102 Beijing, P.R. China

## 1.2. Manufacturer

**Foxconn (TianJin) Precision Industry Co. Ltd.**

No. 207, Nanhai Road, TEDA, Tianjin, P.R. China, 300457

## 1.3. Feature of Equipment Under Test

| Product Feature & Specification |                                                                                                                                                          |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equipment</b>                | mobile phone                                                                                                                                             |
| <b>Brand Name</b>               | Motorola                                                                                                                                                 |
| <b>Model Name</b>               | EX132                                                                                                                                                    |
| <b>FCC ID</b>                   | IHDT56MQ1                                                                                                                                                |
| <b>Tx Frequency Range</b>       | GSM850 : 824 MHz ~ 849 MHz<br>GSM1900 : 1850 MHz ~ 1910 MHz<br>WCDMA Band V : 824 MHz ~ 849 MHz<br>Bluetooth : 2400 MHz ~ 2483.5 MHz                     |
| <b>Rx Frequency Range</b>       | GSM850 : 869 MHz ~ 894 MHz<br>GSM1900 : 1930 MHz ~ 1990 MHz<br>WCDMA Band V : 869 MHz ~ 894 MHz<br>Bluetooth : 2400 MHz ~ 2483.5 MHz                     |
| <b>Antenna Type</b>             | WWAN : Fixed Internal Antenna<br>Bluetooth : Chip Antenna                                                                                                |
| <b>HW Version</b>               | 3G_850/2100_S_NO OMTP AVON_MP_V1.0                                                                                                                       |
| <b>SW Version</b>               | Avon_01.00.00.60R                                                                                                                                        |
| <b>Type of Modulation</b>       | GSM / GPRS : GMSK<br>EDGE : 8PSK<br>WCDMA : QPSK<br>Bluetooth (1Mbps) : GFSK<br>Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK<br>Bluetooth EDR (3Mbps) : 8-DPSK |
| <b>EUT Stage</b>                | Production Unit                                                                                                                                          |

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

## 1.4. Test Site

|                    |                                                                                                                  |           |
|--------------------|------------------------------------------------------------------------------------------------------------------|-----------|
| Test Site          | SPORTON INTERNATIONAL (KUNSHAN) INC.                                                                             |           |
| Test Site Location | No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958 |           |
| Test Site No.      | Sporton Site No.                                                                                                 |           |
|                    | CO01-KS                                                                                                          | 03CH01-KS |

## 1.5. Applied 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 C63.4-2003
- IC RSS-Gen Issue 3

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

## 1.6. Ancillary Equipment List

| Item | Equipment          | Trade Name | Model Name     | FCC ID    | Data Cable                | Power Cord        |
|------|--------------------|------------|----------------|-----------|---------------------------|-------------------|
| 1.   | Base Station       | R&S        | CMU 200        | N/A       | N/A                       | Unshielded, 1.8 m |
| 2.   | (USB) Mouse        | DELL       | MO56UC         | Fcc DoC   | Shielded, 1.8 m           | N/A               |
| 3.   | (USB) Keyboard     | DELL       | L100           | Fcc DoC   | Shielded, 1.8 m with Core | N/A               |
| 4.   | PC                 | DELL       | MT320          | Fcc DoC   | N/A                       | Unshielded, 1.8 m |
| 5.   | Monitor            | QBELL      | LC99           | Fcc DoC   | Shielded, 1.2 m           | Unshielded, 1.8 m |
| 6.   | Printer            | HP         | Laser Jet 1018 | Fcc DoC   | Shielded, 1.8 m           | Unshielded, 1.8 m |
| 7.   | Bluetooth Earphone | Nokia      | HS-12W         | PYAHS-12W | N/A                       | N/A               |
| 8.   | iPod               | Apple      | A1199          | DoC       | Shielded, 1.2 m           | N/A               |

## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

The following tables are showing the test modes as the worst cases and recorded in this report.

| Item | EUT Configuration                | Test Condition |           |           |
|------|----------------------------------|----------------|-----------|-----------|
|      |                                  | EMI AC         | EMI RE<1G | EMI RE≥1G |
| 1.   | Charging Mode (EUT with adapter) | ☒              | ☒         | ☒         |
| 2.   | Charging Mode (EUT with PC)      | ☒              | ☒         | Note 1    |

**Abbreviations:**

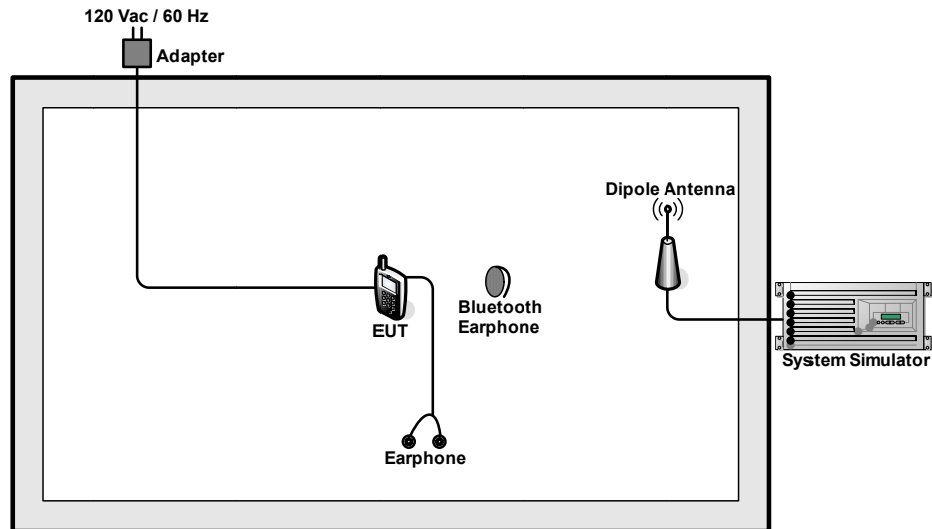
- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

**Note 1:** Testing for this mode is not required or not the worst case.

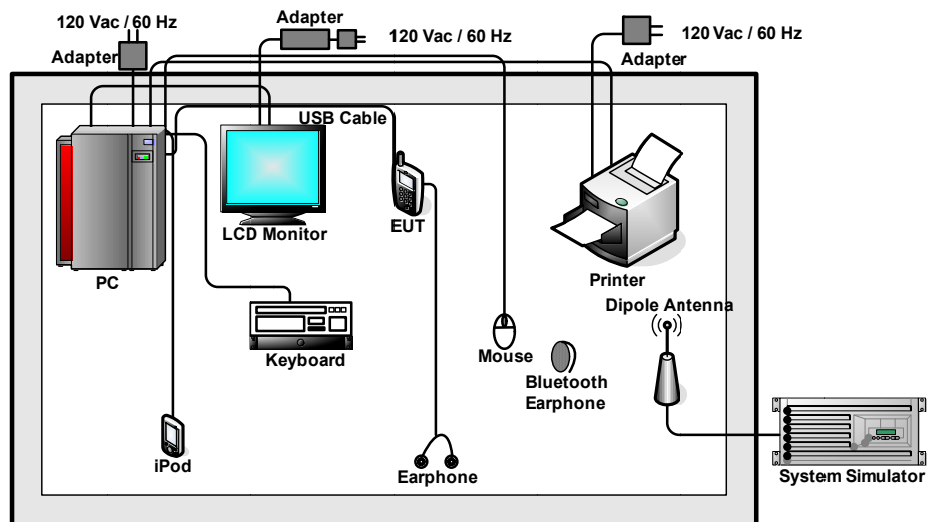
| Test Items                                                                                                                                                                                                                                    | EUT Configure Mode | Function Type                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC Conducted Emission                                                                                                                                                                                                                         | 1/2                | Mode 1: GSM850 Idle + Bluetooth Idle + Adapter 1 + Earphone + Camera<br>Mode 2: GSM1900 Idle + Bluetooth Idle + Adapter 2 + Earphone + MPEG4<br>Mode 3: GSM850 Idle + Bluetooth Idle + Adapter 3 + Earphone + MPEG4<br>Mode 4: GSM850 Idle + Bluetooth Idle + Adapter 4 + Earphone + MPEG4<br>Mode 5: WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx<br>Mode 6: GSM850 Idle + Bluetooth Idle + USB Cable (Link with PC) + Earphone + FM Rx       |
| Radiated Emissions < 1GHz                                                                                                                                                                                                                     | 1/2                | Mode 1: GSM850 Idle + Bluetooth Idle + Adapter 1 + Earphone + Camera<br>Mode 2: GSM1900 Idle + Bluetooth Idle + Adapter 2 + Earphone + MPEG4<br>Mode 3: GSM850 Idle + Bluetooth Idle + Adapter 3 + Earphone + MPEG4<br>Mode 4: GSM850 Idle + Bluetooth Idle + Adapter 4 + Earphone + MPEG4<br>Mode 5: WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx<br>Mode 6: WCDMA Band V Idle + Bluetooth Idle + USB Cable (Link with PC) + Earphone + FM Rx |
| Radiated Emissions ≥ 1GHz                                                                                                                                                                                                                     | 1                  | Mode 1: WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Remark:</b> <ol style="list-style-type: none"> <li>The worst case of AC is mode 5; only the test data of this mode was reported.</li> <li>The worst case of RE &lt; 1G is mode 5; only the test data of this mode was reported.</li> </ol> |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## 2.2. Connection Diagram of Test System

### <EUT with Adapter and Bluetooth Earphone Mode>



### <EUT with USB Cable (Link with PC) Mode>



## **2.3. Test Software**

The EUT was in GSM or WCDMA 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, and the following programs installed in the EUT were programmed during the test.

1. Execute the program, "Winthrax.EXE", installed in PC for active sync files transfer with EUT via USB cable.
2. Execute "Video Player" to play MPEG4 files.
3. Turn on camera to capture images.

### 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.

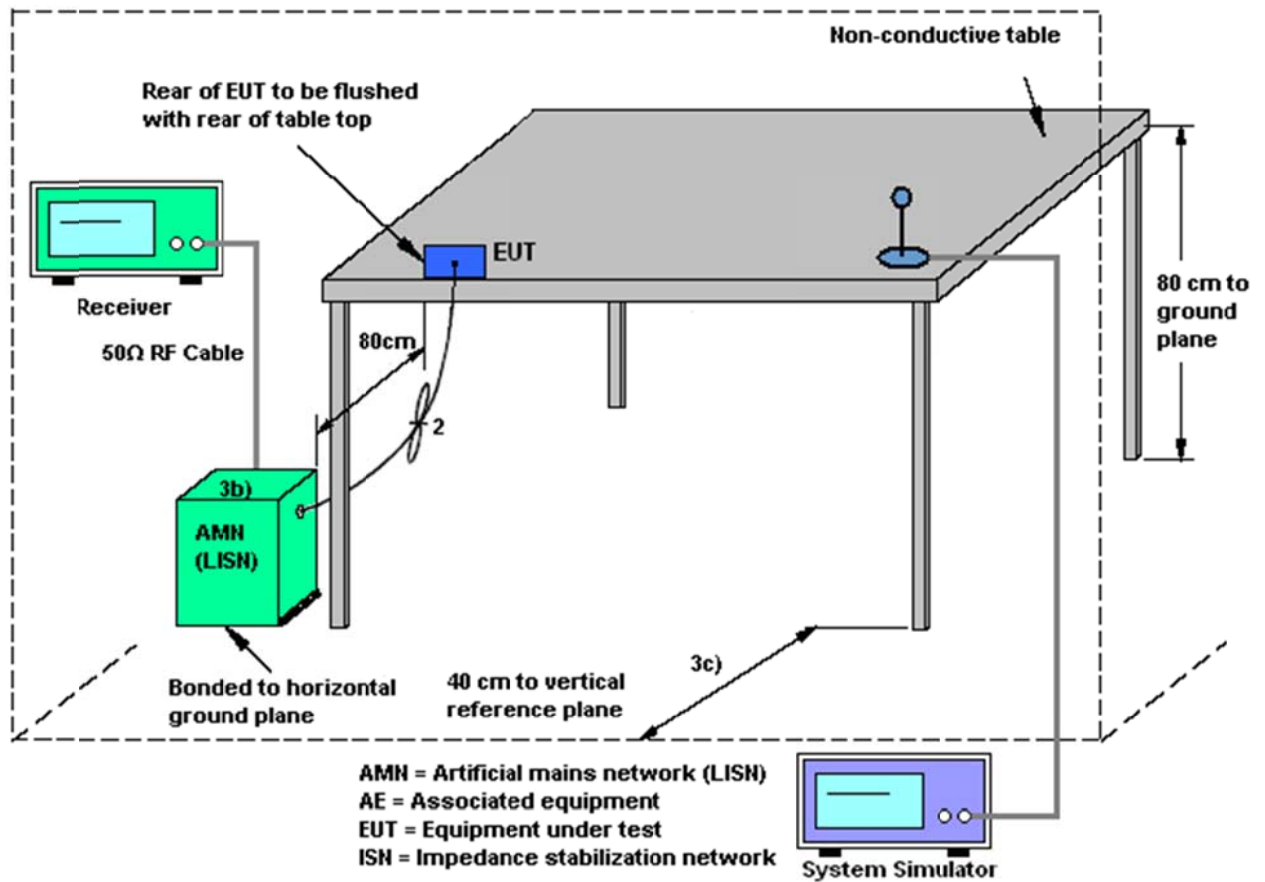
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedure

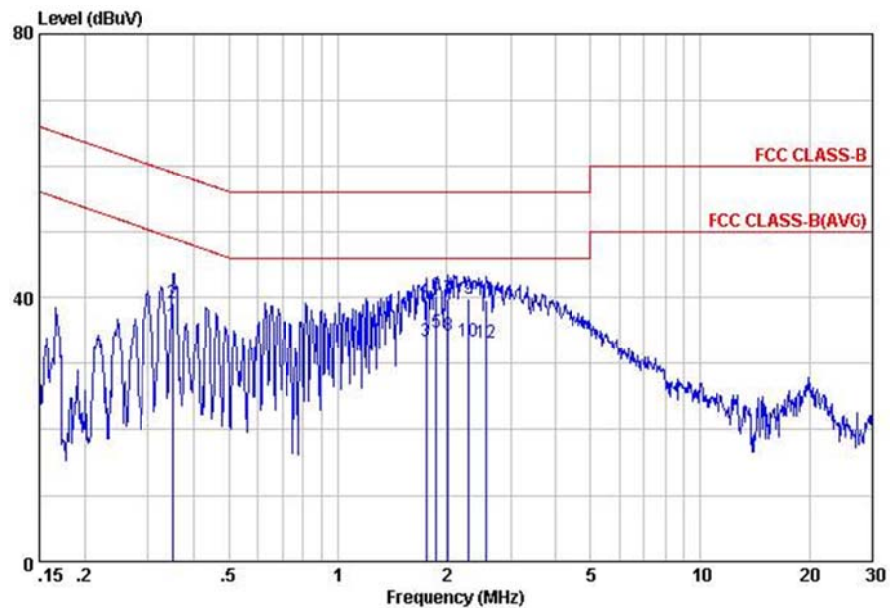
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 with Maximum Hold Mode.

### 3.1.4 Test Setup



### 3.1.5 Test Result of AC Conducted Emission

|                        |                                                                                 |                            |         |
|------------------------|---------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 5                                                                          | <b>Temperature :</b>       | 22~25°C |
| <b>Test Engineer :</b> | Allen Chang                                                                     | <b>Relative Humidity :</b> | 41~44%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                   | <b>Phase :</b>             | Line    |
| <b>Function Type :</b> | WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx               |                            |         |
| <b>Remark :</b>        | All emissions not reported here are more than 10 dB below the prescribed limit. |                            |         |

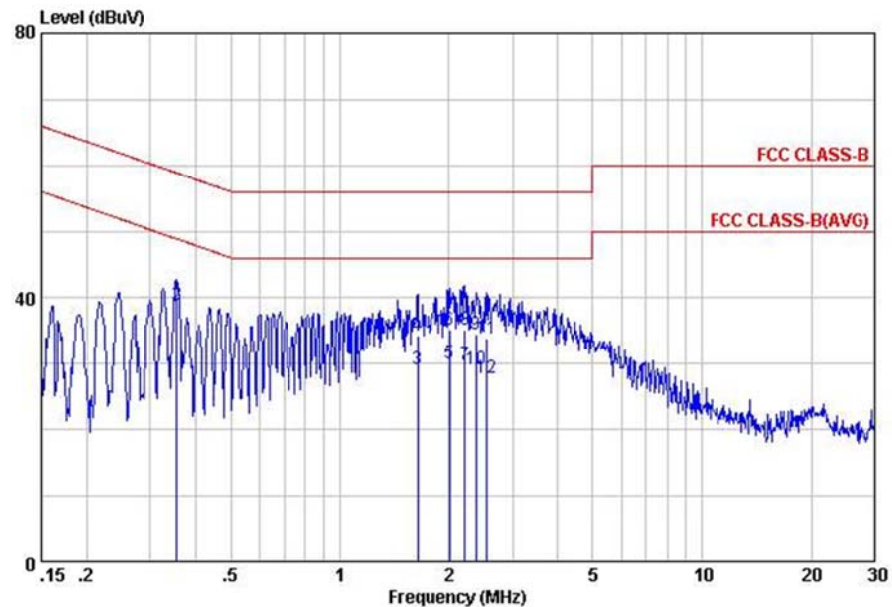


Site : C001-KS  
 Condition: FCC CLASS-B LISN-100807 LINE  
 TestMode : mode 5  
 IMEI : 356397040005696

|    | Freq | Level | Over   | Limit | Read  | LISN   | Cable |         |
|----|------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz  | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    |      |       |        |       |       |        |       |         |
| 1  | 0.35 | 35.90 | -13.06 | 48.96 | 25.80 | -0.08  | 10.18 | Average |
| 2  | 0.35 | 39.20 | -19.76 | 58.96 | 29.10 | -0.08  | 10.18 | QP      |
| 3  | 1.74 | 33.51 | -12.49 | 46.00 | 23.31 | -0.11  | 10.31 | Average |
| 4  | 1.74 | 39.61 | -16.39 | 56.00 | 29.41 | -0.11  | 10.31 | QP      |
| 5  | 1.88 | 34.81 | -11.19 | 46.00 | 24.60 | -0.11  | 10.32 | Average |
| 6  | 1.88 | 40.41 | -15.59 | 56.00 | 30.20 | -0.11  | 10.32 | QP      |
| 7  | 2.02 | 39.82 | -16.18 | 56.00 | 29.60 | -0.11  | 10.33 | QP      |
| 8  | 2.02 | 34.32 | -11.68 | 46.00 | 24.10 | -0.11  | 10.33 | Average |
| 9  | 2.30 | 39.83 | -16.17 | 56.00 | 29.60 | -0.11  | 10.34 | QP      |
| 10 | 2.30 | 33.53 | -12.47 | 46.00 | 23.30 | -0.11  | 10.34 | Average |
| 11 | 2.58 | 39.74 | -16.26 | 56.00 | 29.49 | -0.11  | 10.36 | QP      |
| 12 | 2.58 | 33.24 | -12.76 | 46.00 | 22.99 | -0.11  | 10.36 | Average |



|                        |                                                                                 |                            |         |
|------------------------|---------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 5                                                                          | <b>Temperature :</b>       | 22~25°C |
| <b>Test Engineer :</b> | Allen Chang                                                                     | <b>Relative Humidity :</b> | 41~44%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                   | <b>Phase :</b>             | Neutral |
| <b>Function Type :</b> | WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx               |                            |         |
| <b>Remark :</b>        | All emissions not reported here are more than 10 dB below the prescribed limit. |                            |         |



Site : C001-KS  
Condition: FCC CLASS-B LISN-100807 NEUTRAL  
TestMode : mode 5  
IMEI : 356397040005696

|    | Freq | Level | Over   | Limit | Read  | LISN   | Cable | Remark  |
|----|------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz  | dBuV  | Limit  | Line  | Level | Factor | Loss  |         |
|    |      |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.36 | 37.31 | -11.52 | 48.83 | 27.21 | -0.08  | 10.18 | Average |
| 2  | 0.36 | 38.91 | -19.92 | 58.83 | 28.81 | -0.08  | 10.18 | QP      |
| 3  | 1.64 | 29.10 | -16.90 | 46.00 | 18.90 | -0.11  | 10.31 | Average |
| 4  | 1.64 | 34.40 | -21.60 | 56.00 | 24.20 | -0.11  | 10.31 | QP      |
| 5  | 2.01 | 30.12 | -15.88 | 46.00 | 19.90 | -0.11  | 10.33 | Average |
| 6  | 2.01 | 35.12 | -20.88 | 56.00 | 24.90 | -0.11  | 10.33 | QP      |
| 7  | 2.21 | 29.93 | -16.07 | 46.00 | 19.70 | -0.11  | 10.34 | Average |
| 8  | 2.21 | 35.13 | -20.87 | 56.00 | 24.90 | -0.11  | 10.34 | QP      |
| 9  | 2.38 | 34.54 | -21.46 | 56.00 | 24.30 | -0.11  | 10.35 | QP      |
| 10 | 2.38 | 29.24 | -16.76 | 46.00 | 19.00 | -0.11  | 10.35 | Average |
| 11 | 2.55 | 33.84 | -22.16 | 56.00 | 23.60 | -0.11  | 10.35 | QP      |
| 12 | 2.55 | 27.84 | -18.16 | 46.00 | 17.60 | -0.11  | 10.35 | Average |

## 3.2. Test of Radiated Emission Measurement

### 3.2.1. Limit of Radiated Emission

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

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490      | 2400/F(kHz)                          | 300                              |
| 0.490 – 1.705      | 24000/F(kHz)                         | 30                               |
| 1.705 – 30.0       | 30                                   | 30                               |
| 30 – 88            | 100                                  | 3                                |
| 88 – 216           | 150                                  | 3                                |
| 216 - 960          | 200                                  | 3                                |
| Above 960          | 500                                  | 3                                |

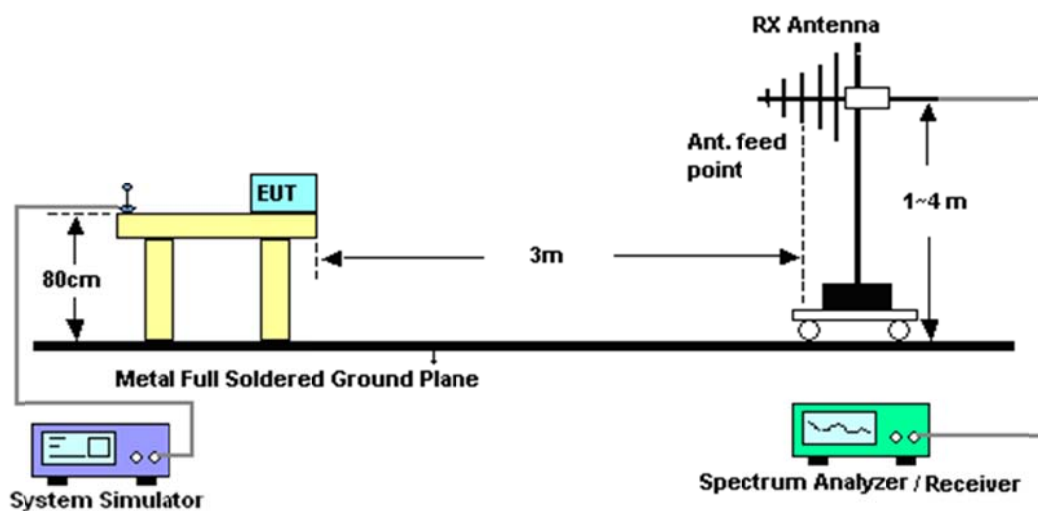
### 3.2.2. Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3. Test Procedures

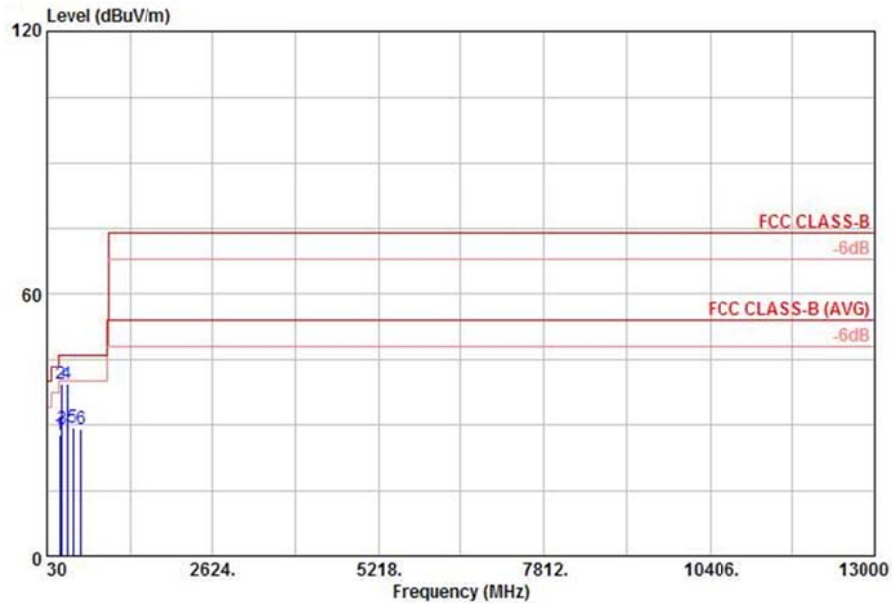
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one meter and 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.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission



**3.2.5. Test Result of Radiated Emission**

|                        |                                                                   |                            |            |
|------------------------|-------------------------------------------------------------------|----------------------------|------------|
| <b>Test Mode :</b>     | Mode 5                                                            | <b>Temperature :</b>       | 21~23°C    |
| <b>Test Engineer :</b> | Jason Chia                                                        | <b>Relative Humidity :</b> | 42~44%     |
| <b>Test Distance :</b> | 3m                                                                | <b>Polarization :</b>      | Horizontal |
| <b>Function Type :</b> | WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx |                            |            |

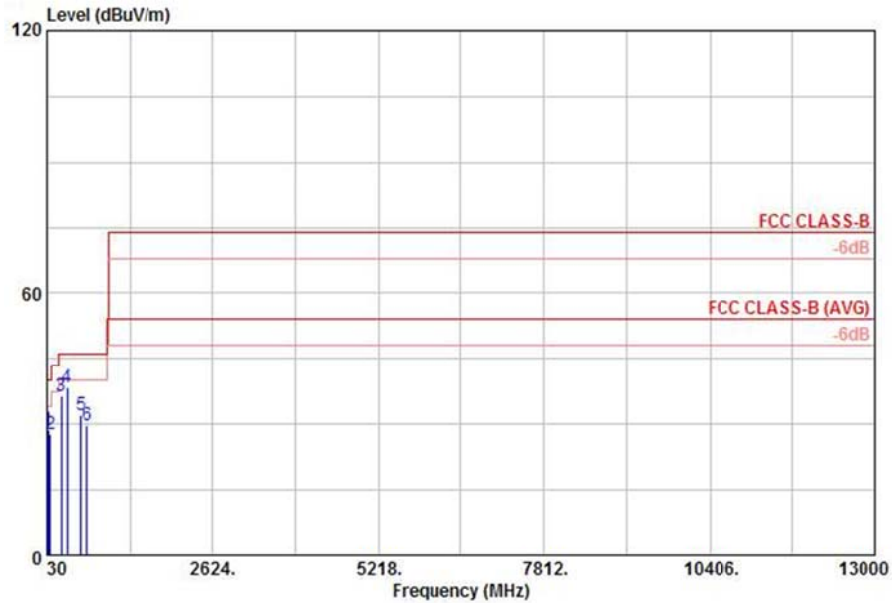


Site : 03CH01-KS  
Condition: FCC CLASS-B 3m LF\_ANT\_100803 HORIZONTAL  
Test mode: Mode 5  
IMEI : 356397040005548

|   | Freq   | Level  | Over<br>Limit | Limit<br>Line | ReadAntenna<br>Level Factor | Cable<br>Loss | Preamp<br>Factor | Ant<br>Pos | Table<br>Pos | Remark |      |
|---|--------|--------|---------------|---------------|-----------------------------|---------------|------------------|------------|--------------|--------|------|
|   | MHz    | dBuV/m | dB            | dBuV/m        | dBuV                        | dB/m          | dB               | dB         | cm           | deg    |      |
| 1 | 230.61 | 27.90  | -18.10        | 46.00         | 46.18                       | 10.97         | 0.64             | 29.89      | ---          | ---    | Peak |
| 2 | 249.78 | 39.29  | -6.71         | 46.00         | 56.46                       | 12.00         | 0.67             | 29.84      | ---          | ---    | Peak |
| 3 | 268.95 | 28.96  | -17.04        | 46.00         | 45.83                       | 12.34         | 0.69             | 29.90      | ---          | ---    | Peak |
| 4 | 345.50 | 39.58  | -6.42         | 46.00         | 54.31                       | 14.40         | 0.81             | 29.94      | 100          | 360    | Peak |
| 5 | 441.40 | 29.58  | -16.42        | 46.00         | 42.23                       | 16.26         | 0.89             | 29.80      | ---          | ---    | Peak |
| 6 | 556.90 | 28.94  | -17.06        | 46.00         | 39.09                       | 18.51         | 1.01             | 29.67      | ---          | ---    | Peak |



|                 |                                                                   |                     |          |
|-----------------|-------------------------------------------------------------------|---------------------|----------|
| Test Mode :     | Mode 5                                                            | Temperature :       | 21~23°C  |
| Test Engineer : | Jason Chia                                                        | Relative Humidity : | 42~44%   |
| Test Distance : | 3m                                                                | Polarization :      | Vertical |
| Function Type : | WCDMA Band V Idle + Bluetooth Idle + Adapter 5 + Earphone + FM Rx |                     |          |



Site : 03CH01-KS  
Condition: FCC CLASS-B 3m LF\_ANT\_100803 VERTICAL  
Test mode: Mode 5  
IMEI : 356397040005548

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | Ant   | Table |          |
|---|--------|--------|--------|--------|-------------|-------|--------|-------|-------|----------|
|   | MHz    | dBuV/m | Limit  | Line   | Level       | Loss  | Factor | Pos   | Pos   | Remark   |
|   |        |        | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg      |
| 1 | 41.61  | 28.72  | -11.28 | 40.00  | 47.59       | 10.95 | 0.26   | 30.08 | ---   | Peak     |
| 2 | 82.65  | 27.66  | -12.34 | 40.00  | 50.18       | 7.15  | 0.36   | 30.03 | ---   | Peak     |
| 3 | 249.78 | 36.42  | -9.58  | 46.00  | 53.59       | 12.00 | 0.67   | 29.84 | ---   | Peak     |
| 4 | 345.50 | 38.35  | -7.65  | 46.00  | 53.08       | 14.40 | 0.81   | 29.94 | 200   | 360 Peak |
| 5 | 556.90 | 32.17  | -13.83 | 46.00  | 42.32       | 18.51 | 1.01   | 29.67 | ---   | Peak     |
| 6 | 652.80 | 29.66  | -16.34 | 46.00  | 39.30       | 18.92 | 1.09   | 29.65 | ---   | Peak     |

## 4. List of Measuring Equipment

| Instrument                | Manufacturer | Model No. | Serial No.   | Characteristics | Calibration Date | Due Date      | Remark                |
|---------------------------|--------------|-----------|--------------|-----------------|------------------|---------------|-----------------------|
| EMI Receiver              | R&S          | ESCI7     | 100768       | 9kHz~7GHz       | Jun. 22, 2010    | Jun. 21, 2011 | Conduction (CO01-KS)  |
| LISN                      | MessTec      | AN3016    | 60103        | 9kHz~30MHz      | Jan. 07, 2011    | Jan. 06, 2012 | Conduction (CO01-KS)  |
| LISN                      | MessTec      | AN3016    | 60105        | 9kHz~30MHz      | Jan. 07, 2011    | Jan. 06, 2012 | Conduction (CO01-KS)  |
| AC Power Source           | Chroma       | 61602     | ABP000000811 | N/A             | Nov. 10, 2010    | Nov. 09, 2011 | Conduction (CO01-KS)  |
| EMI Test Receiver         | R&S          | ESCI      | 100534       | 9kHz~3GHz       | Nov. 16, 2010    | Nov. 15, 2011 | Radiation (03CH01-KS) |
| Spectrum Analyzer         | R&S          | FSP40     | 100319       | 9kHz~40GHz      | Jan. 07, 2011    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Bilog Antenna             | SCHAFFNER    | CBL6112D  | 23182        | 25MHz~2GHz      | Dec. 07, 2010    | Dec. 06, 2011 | Radiation (03CH01-KS) |
| Double Ridge Horn Antenna | EMCO         | 3117      | 00075959     | 1GHz~18GHz      | Jan. 07, 2011    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Amplifier                 | Wireless     | FPA-6592G | 060004       | 30MHz~2GHz      | Dec. 09, 2010    | Dec. 08, 2011 | Radiation (03CH01-KS) |
| Amplifier                 | Agilent      | 8449B     | 3008A02370   | 1GHz~26.5GHz    | Jan. 07, 2011    | Jan. 06, 2012 | Radiation (03CH01-KS) |
| Active horn antenna       | com-power    | AHA-118   | 701023       | 1G-18GHz        | Nov. 09, 2010    | Nov. 08, 2011 | Radiation (03CH01-KS) |
| Signal Generator          | R&S          | SMR40     | 100455       | 10MHz~40GHz     | Jan. 06, 2011    | Jan. 05, 2012 | Radiation (03CH01-KS) |
| SHF-EHF Horn              | Schwarzbeck  | BBHA 9170 | BBHA170249   | 15-40GHz        | Oct. 15, 2010    | Oct. 14, 2011 | Radiation (03CH01-KS) |
| Loop Antenna              | R&S          | HFH2-Z2   | 860004/001   | 9 kHz~30 MHz    | Jul. 29, 2010    | Jul. 28, 2011 | Radiation (03CH01-KS) |
| System Simulator          | R&S          | CMU200    | 837587/066   | Full-Band       | Jan. 07, 2011    | Jan. 06, 2012 | -                     |

## 5. Uncertainty of Evaluation

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

| Contribution                                                                             | Uncertainty of $X_i$ |                          | $u(X_i)$ |
|------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                          | dB                   | Probability Distribution |          |
| Receiver Reading                                                                         | 0.10                 | Normal (k=2)             | 0.05     |
| Cable Loss                                                                               | 0.10                 | Normal (k=2)             | 0.05     |
| AMN Insertion Loss                                                                       | 2.50                 | Rectangular              | 0.63     |
| Receiver Specification                                                                   | 1.50                 | Rectangular              | 0.43     |
| Site Imperfection                                                                        | 1.39                 | Rectangular              | 0.80     |
| Mismatch                                                                                 | +0.34 / -0.35        | U-Shape                  | 0.24     |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                 | <b>1.13</b>          |                          |          |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b> | <b>2.26</b>          |                          |          |

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

| Contribution                                                                             | Uncertainty of $X_i$ |                          | $u(X_i)$ |
|------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                          | dB                   | Probability Distribution |          |
| Receiver Reading                                                                         | 0.41                 | Normal (k=2)             | 0.21     |
| Antenna Factor Calibration                                                               | 0.83                 | Normal (k=2)             | 0.42     |
| Cable Loss Calibration                                                                   | 0.25                 | Normal (k=2)             | 0.13     |
| Pre-Amplifier Gain Calibration                                                           | 0.27                 | Normal (k=2)             | 0.14     |
| RCV/SPA Specification                                                                    | 2.50                 | Rectangular              | 0.72     |
| Antenna Factor Interpolation for Frequency                                               | 1.00                 | Rectangular              | 0.29     |
| Site Imperfection                                                                        | 1.43                 | Rectangular              | 0.83     |
| Mismatch                                                                                 | +0.39 / -0.41        | U-Shape                  | 0.28     |
| <b>Combined Standard Uncertainty <math>U_c(y)</math></b>                                 | <b>1.27</b>          |                          |          |
| <b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b> | <b>2.54</b>          |                          |          |

**Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)**

| Contribution                                                                                                                         | Uncertainty of $X_i$ |                          | $u(X_i)$ | $C_i$ | $C_i * u(X_i)$ |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|-------|----------------|
|                                                                                                                                      | dB                   | Probability Distribution |          |       |                |
| Receiver Reading                                                                                                                     | $\pm 0.10$           | Normal (k=2)             | 0.10     | 1     | 0.10           |
| Antenna Factor Calibration                                                                                                           | $\pm 1.70$           | Normal (k=2)             | 0.85     | 1     | 0.85           |
| Cable Loss Calibration                                                                                                               | $\pm 0.50$           | Normal (k=2)             | 0.25     | 1     | 0.25           |
| Receiver Correction                                                                                                                  | $\pm 2.00$           | Rectangular              | 1.15     | 1     | 1.15           |
| Antenna Factor Directional                                                                                                           | $\pm 1.50$           | Rectangular              | 0.87     | 1     | 0.87           |
| Site Imperfection                                                                                                                    | $\pm 2.80$           | Triangular               | 1.14     | 1     | 1.14           |
| Mismatch<br>Receiver VSWR $\Gamma_1 = 0.197$<br>Antenna VSWR $\Gamma_2 = 0.194$<br>Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$ | +0.34 / -0.35        | U-Shape                  | 0.244    | 1     | 0.244          |
| <b>Combined Standard Uncertainty<br/><math>U_c(y)</math></b>                                                                         | <b>2.36</b>          |                          |          |       |                |
| <b>Measuring Uncertainty for a<br/>Level of Confidence of 95%<br/>(<math>U = 2U_c(y)</math>)</b>                                     | <b>4.72</b>          |                          |          |       |                |