

# FCC RF Test Report

| APPLICANT      | : | Motorola Mobility LLC                      |
|----------------|---|--|
| EQUIPMENT      | : | Mobile Cellular Phone                      |
| BRAND NAME     | : | Motorola                                   |
| MODEL NAME     | : | XT1929-8                                   |
| FCC ID         | : | IHDT56XE3                                  |
| STANDARD       | : | FCC 47 CFR Part 2, and 90(S)               |
| CLASSIFICATION | : | PCS Licensed Transmitter Held to Ear (PCE) |

This is a variant report. The product was received on Jan. 18, 2018 and testing was completed on Mar. 16, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA-603-E and shown 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 INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



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**SPORTON INTERNATIOINAL INC.** TEL : 886-3-327-3456 FAX : 886-3-328-4978 FCC ID : IHDT56XE3 Page Number : 1 of 15 Report Issued Date : Mar. 16, 2018 Report Version : Rev. 01 Report Template No.: BU5-FGLTE Version 2.0



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# **REVISION HISTORY**

| VERSION | DESCRIPTION             | ISSUED DATE   |
|---------|-------------------------|---------------|
| Rev. 01 | Initial issue of report | Mar. 16, 2018 |
|         |                         |               |
|         |                         |               |
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|         |                         |               |



# SUMMARY OF TEST RESULT

| Report<br>Section  | FCC Rule   | Description                               | Limit                               | Result       | Remark                                    |
|--|--|---|-------------------------------------|--------------|---|
| 3.1  | §2.1046  | Conducted Output Power                    | Reporting only                      | PASS         | -   |
| -  | §2.1049<br>§90.209   | Occupied Bandwidth and<br>26dB Bandwidth  | Reporting only                      | Not required | -   |
| -  | §2.1051<br>§90.691   | Emission masks –<br>In-band emissions     | < 50+10log <sub>10</sub> (P[Watts]) | Not required | -   |
| -  | §2.1051<br>§90.691   | Emission masks –<br>Out of band emissions | < 43+10log <sub>10</sub> (P[Watts]) | Not required | -   |
| 3.2  | §2.1053     Field Strength of Spurious       §90.691     Radiation |   | < 43+10log <sub>10</sub> (P[Watts]) | PASS         | Under limit<br>4736 dB at<br>3368.000 MHz |
| - §2.1055 Frequency Stability for<br>§90.213 Temperature & Voltage |  | < 2.5 ppm                                 | PASS                                | -            |   |
| Note: Not r  | equired means at   | fter assessing, test items are            | e not necessary to carry            | / out.       |   |



# **1** General Description

# 1.1 Applicant

#### Motorola Mobility LLC

222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

### 1.2 Manufacturer

#### Motorola Mobility LLC

222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

# **1.3 Feature of Equipment Under Test**

|                                 | Product Feature  |        |  |  |  |  |
|---------------------------------|--|--------|--|--|--|--|
| Equipment                       | Mobile Cellular Phone  |        |  |  |  |  |
| Brand Name                      | Motorola   |        |  |  |  |  |
| Model Name                      | XT1929-8   |        |  |  |  |  |
| FCC ID                          | IHDT56XE3  |        |  |  |  |  |
| Sample 1                        | EUT with Dual  | SIM    |  |  |  |  |
| Sample 2                        | EUT with Sing  | le SIM |  |  |  |  |
| IMEI Code                       | Conducted :         IMEI 1: 354105090010553<br>IMEI 2: 354105090010561<br>IMEI 1: 354105090022699<br>IMEI 2: 354105090022707         |        |  |  |  |  |
| EUT supports Radios application | GSM/EGPRS/WCDMA/HSPA/LTE/GNSS/NFC<br>WLAN 11b/g/n HT20<br>WLAN 11a/n HT20/HT40<br>WLAN 11ac VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE |        |  |  |  |  |
| HW Version                      | DVT2   |        |  |  |  |  |
| EUT Stage                       | Identical Proto  | type   |  |  |  |  |

#### Remark:

- 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- 2. This is a variant report. Except Radiation Spurious Emission, Conducted Output Power, Equivalent Isotropic Radiated Power, Effective Radiated Power, FG811821-07C report reuses test data from the FG811821D report.



| Accessory List  |                                       |  |  |  |  |  |  |
|-----------------|---------------------------------------|--|--|--|--|--|--|
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| AC Adapter 1    | Model Name : SC-23 SPN5971A           |  |  |  |  |  |  |
|                 | Manufacturer : Salom                  |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| AC Adapter 2    | Model Name : SC-23 SPN5989A           |  |  |  |  |  |  |
|                 | Manufacturer : Chenyang               |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| AC Adapter 3    | Model Name : SC-24 SPN5972A           |  |  |  |  |  |  |
|                 | Manufacturer : Salom                  |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| AC Adapter 4    | Model Name : SC-24 SPN5990A           |  |  |  |  |  |  |
|                 | Manufacturer : Chenyang               |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| Battery         | Model Name : JS40                     |  |  |  |  |  |  |
|                 | Manufacturer : SUNWODA                |  |  |  |  |  |  |
| Fornhono        | Brand Name : Motorola                 |  |  |  |  |  |  |
| Earphone        | Model Name : SH38C16618               |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| C2Audio Cable 1 | Model Name : SC18C27844               |  |  |  |  |  |  |
|                 | Manufacturer : Luxshare               |  |  |  |  |  |  |
|                 | Brand Name : Motorola                 |  |  |  |  |  |  |
| C2Audio Cable 2 | Model Name : SC18C27845               |  |  |  |  |  |  |
|                 | Manufacturer : Cabletech              |  |  |  |  |  |  |
| USB Cable 1     | Brand Name : Cabletech                |  |  |  |  |  |  |
|                 | Model Name : SKN6473A                 |  |  |  |  |  |  |
| USB Cable 2     | Brand Name : FOXLINK                  |  |  |  |  |  |  |
| USB Cable 2     | Model Name : SKN6473A 17195-C 0403532 |  |  |  |  |  |  |
| USB Cable 3     | Brand Name : SAIBAO                   |  |  |  |  |  |  |
|                 | Model Name : SKN6473A 17214-C 1127044 |  |  |  |  |  |  |
| USB Cable 4     | Brand Name : Luxshare                 |  |  |  |  |  |  |
|                 | Model Name : SKN6473A 17227-C 1126538 |  |  |  |  |  |  |



# **1.4 Product Specification of Equipment Under Test**

| Product Specification subjective to this standard |                                      |  |  |  |  |  |
|---|--------------------------------------|--|--|--|--|--|
| Tx Frequency                                      | LTE Band 26 : 814.7 ~ 823.3 MHz      |  |  |  |  |  |
| Rx Frequency                                      | LTE Band 26 : 859.7 ~ 868.3 MHz      |  |  |  |  |  |
| Bandwidth   | 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz |  |  |  |  |  |
| Maximum Output Power to Antenna                   | 22.65 dBm                            |  |  |  |  |  |
| Antenna Type                                      | Fixed Internal Antenna               |  |  |  |  |  |
| Antenna Gain                                      | -5.6 dBi                             |  |  |  |  |  |
| Type of Modulation                                | QPSK / 16QAM / 64QAM                 |  |  |  |  |  |

**Remark:** This test report recorded only product characteristics and test results of PCS Licensed Transmitter Held to Ear (PCE).

# **1.5 Modification of EUT**

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

# **1.6 Testing Site**

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

| Test Site          | SPORTON INTERNATIONAL INC.                                  |  |  |  |  |  |
|--------------------|---|--|--|--|--|--|
|                    | No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, |  |  |  |  |  |
| Test Site Location | Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.           |  |  |  |  |  |
|                    | TEL: +886-3-327-3456  |  |  |  |  |  |
|                    | FAX: +886-3-328-4978  |  |  |  |  |  |
| Test Site No.      | Sporton Site No.  |  |  |  |  |  |
| Test Site No.      | TH05-HY   |  |  |  |  |  |

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

| Test Site          | SPORTON INTERNATIONAL INC.   |  |  |  |  |  |
|--------------------|--|--|--|--|--|--|
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist,<br>Taoyuan City, Taiwan (R.O.C.)<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |  |  |  |  |  |
| Test Site No.      | Sporton Site No.<br>03CH12-HY  |  |  |  |  |  |

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



# 1.7 Applied Standards

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

- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

#### Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



# 2 Test Configuration of Equipment Under Test

# 2.1 Test Mode

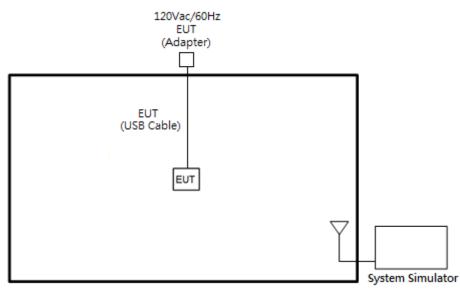
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

| Test                          | Bandwidth (MHz)                |  |   |   |    |    |    | Modulation |       | RB # |      |      | Test Channel |   |   |
|-------------------------------|--------------------------------|--|---|---|----|----|----|------------|-------|------|------|------|--------------|---|---|
| Test Items                    | Band                           | 1.4  | 3 | 5 | 10 | 15 | 20 | QPSK       | 16QAM | 1    | Half | Full | L            | м | н |
| Max. Output Power             | 26                             | v  | v | v | v  | v  | -  | v          | v     | v    | v    | v    | v            | v | v |
| E.R.P.                        | 26                             |  |   |   |    | v  | -  | v          | v     |      | v    |      | v            |   |   |
| Radiated Spurious<br>Emission | 26                             | Worst Case   |   |   |    |    |    |            | v     | v    | v    |      |              |   |   |
| Note                          | 2. The<br>3. LTE<br>ER<br>free | <ol> <li>The mark "-" means that this bandwidth is not supported.</li> <li>LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz.<br/>ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies.</li> </ol> |   |   |    |    |    |            |       |      |      |      |              |   |   |

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

# 2.2 Connection Diagram of Test System

#### <EUT with Adapter>





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

| It | tem | m Equipment Trade Name |         | Model No. | FCC ID | Data Cable | Power Cord        |  |
|----|-----|------------------------|---------|-----------|--------|------------|-------------------|--|
|    | 1.  | LTE Base Station       | Anritsu | MT8820C   | N/A    | N/A        | Unshielded, 1.8 m |  |

# 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator. Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

# 2.5 Frequency List of Low/Middle/High Channels

|          | LTE Band 26 Channel and Frequency List |        |        |         |  |  |  |  |  |  |
|----------|--|--------|--------|---------|--|--|--|--|--|--|
| BW [MHz] | Channel/Frequency(MHz)                 | Lowest | Middle | Highest |  |  |  |  |  |  |
| 15       | Channel                                | 26765  | -      | -       |  |  |  |  |  |  |
| 15       | Frequency                              | 821.5  | -      | -       |  |  |  |  |  |  |
| 10       | Channel                                | -      | 26740  | -       |  |  |  |  |  |  |
| 10       | Frequency                              | -      | 819    | -       |  |  |  |  |  |  |
| 5        | Channel                                | 26715  | 26740  | 26765   |  |  |  |  |  |  |
| 5        | Frequency                              | 816.5  | 819    | 821.5   |  |  |  |  |  |  |
| 3        | Channel                                | 26705  | 26740  | 26775   |  |  |  |  |  |  |
| 5        | Frequency                              | 815.5  | 819    | 822.5   |  |  |  |  |  |  |
| 1.4      | Channel                                | 26697  | 26740  | 26783   |  |  |  |  |  |  |
| 1.4      | Frequency                              | 814.7  | 819    | 823.3   |  |  |  |  |  |  |



# 3 Test Result

### 3.1 Conducted Output Power Measurement

#### 3.1.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

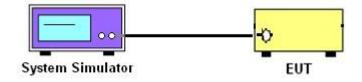
#### 3.1.2 Measuring Instruments

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

#### 3.1.3 Test Procedures

- 1. The transmitter output port was connected to the system simulator.
- 2. Set EUT at maximum power through system simulator.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure and record the power level from the system simulator.

#### 3.1.4 Test Setup



#### 3.1.5 Test Result of Conducted Output Power

Please refer to Appendix A.

### 3.2 Field Strength of Spurious Radiation Measurement

#### 3.2.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43+10\log_{10}(P[Watts])$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

#### 3.2.2 Measuring Instruments

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

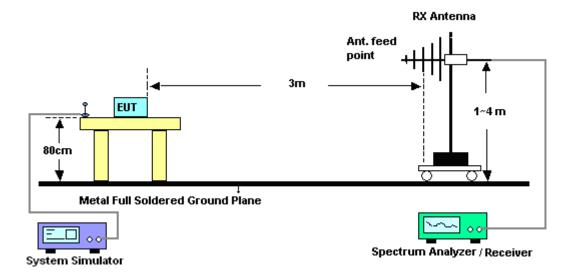
#### 3.2.3 Test Procedures

- 1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- 6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 8. Taking the record of output power at antenna port.
- 9. Repeat step 7 to step 8 for another polarization.
- 10. EIRP (dBm) = S.G. Power Tx Cable Loss + Tx Antenna Gain
- 11. ERP (dBm) = EIRP 2.15
- 12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

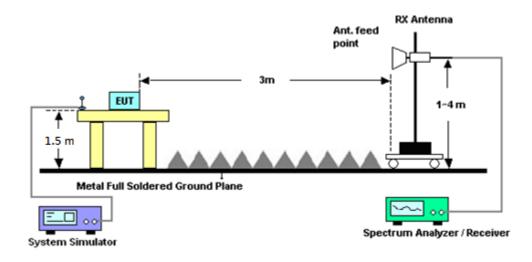


#### 3.2.4 Test Setup

For radiated test from 30MHz to 1GHz



#### For radiated test above 1GHz



#### 3.2.5 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.



# 4 List of Measuring Equipment

| Instrument                   | Manufacturer          | Model No.               | Serial No.         | Characteristics  | Calibration<br>Date | Test Date                        | Due Date               | Remark                   |
|------------------------------|-----------------------|-------------------------|--------------------|--|---------------------|----------------------------------|------------------------|--------------------------|
| LTE Base Station             | Anritsu               | MT8820C                 | 620143282<br>1     | GSM/GPRS<br>/WCDMA/LTE   | Oct. 13, 2017       | Jan. 18, 2018 ~<br>Mar. 02, 2018 | Oct. 12, 2018          | Conducted<br>(TH05-HY)   |
| Spectrum<br>Analyzer         | Rohde &<br>Schwarz    | FSV40                   | 101397             | 101397 10Hz~40GHz Nov. 09, 2017 Jan. 18, 2018 ~<br>Mar. 02, 2018 Nov. 09, 2017 |                     | Nov. 08, 2018                    | Conducted<br>(TH05-HY) |                          |
| Temperature<br>Chamber       | ESPEC                 | SH-641                  | 92013720           | <b>-30°</b> C <b>~70°</b> C  | Aug. 28, 2017       | Jan. 18, 2018 ~<br>Mar. 02, 2018 | Aug. 27, 2018          | Conducted<br>(TH05-HY)   |
| Programmable<br>Power Supply | GW Instek             | PSS-2005                | EL890001           | 1 1V~20V<br>0.5A~5A Oct. 06, 2017 Jan. 18, 2018 ~<br>Mar. 02, 2018             |                     | Oct. 05, 2018                    | Conducted<br>(TH05-HY) |                          |
| Amplifier                    | MITEQ                 | TTA1840-35-<br>HG       | 1871923            | 18GHz~40GHz,<br>VSWR : 2.5:1<br>max  | Jul. 18, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Jul. 17, 2018          | Radiation<br>(03CH12-HY) |
| Spectrum<br>Analyzer         | Keysight              | N9010A                  | MY542004<br>85     | 10Hz ~ 44GHz   | Oct. 31, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Oct. 30, 2018          | Radiation<br>(03CH12-HY) |
| Bilog Antenna                | TESEQ                 | CBL<br>6111D&N-6-0<br>6 | 35414&AT-<br>N0602 | 30MHz~1GHz   | Oct. 14, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Oct. 13, 2018          | Radiation<br>(03CH12-HY) |
| EMI Test Receiver            | Rohde &<br>Schwarz    | ESU26                   | 100390             | 20Hz~26.5GHz   | Dec. 25, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Dec. 24, 2018          | Radiation<br>(03CH12-HY) |
| Horn Antenna                 | SCHWARZBE<br>CK       | BBHA 9120D              | 9120D-132<br>8     | 1GHz ~ 18GHz   | Oct. 20, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Oct. 19, 2018          | Radiation<br>(03CH12-HY) |
| Preamplifier                 | COM-POWER             | PA-103                  | 161075             | 10MHz~1GHz   | Mar. 23, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Mar. 22, 2018          | Radiation<br>(03CH12-HY) |
| Preamplifier                 | Keysight              | 83017A                  | MY532701<br>48     | 1GHz~26.5GHz   | Jan. 15, 2018       | Feb. 16, 2018~<br>Mar. 16, 2018  | Jan. 14, 2019          | Radiation<br>(03CH12-HY) |
| Antenna Mast                 | EMEC                  | AM-BS-<br>4500-B        | N/A                | 1m~4m  | N/A                 | Feb. 16, 2018~<br>Mar. 16, 2018  | N/A                    | Radiation<br>(03CH12-HY) |
| Turn Table                   | EMEC                  | TT2000                  | N/A                | 0~360 Degree   | N/A                 | Feb. 16, 2018~<br>Mar. 16, 2018  | N/A                    | Radiation<br>(03CH12-HY) |
| Attenuator                   | Fairview<br>Microwave | SA18S5W-10              | n/a                | 10db   | Mar. 24, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Mar. 23, 2018          | Radiation<br>(03CH12-HY) |
| SHF-EHF Horn<br>Antenna      | SCHWARZBE<br>CK       | BBHA 9170               | BBHA9170<br>576    | 18GHz ~ 40GHz  | Apr. 27, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Apr. 26, 2018          | Radiation<br>(03CH12-HY) |
| SHF-EHF Horn<br>Antenna      | SCHWARZBE<br>CK       | BBHA 9170               | BBHA9170<br>584    | 18GHz- 40GHz   | Nov. 27, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Nov. 26, 2018          | Radiation<br>(03CH12-HY) |
| Horn Antenna                 | SCHWARZBE<br>CK       | BBHA 9120 D             | 9120D-132<br>5     | 1GHz ~ 18GHz   | Sep. 27, 2017       | Feb. 16, 2018~<br>Mar. 16, 2018  | Sep. 26, 2018          | Radiation<br>(03CH10-HY) |
| Signal Generator             | Anritsu               | MG3694C                 | 163401             | 0.1Hz~40GHz  | Jan. 15, 2018       | Feb. 16, 2018~<br>Mar. 16, 2018  | Jan. 14, 2019          | Radiation<br>(03CH12-HY) |



# 5 Uncertainty of Evaluation

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

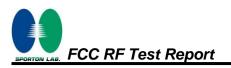
| Measuring Uncertainty for a Level of | 3.36 |
|--------------------------------------|------|
| Confidence of 95% (U = 2Uc(y))       | 3.30 |

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

| Measuring Uncertainty for a Level of | 3.70 |
|--------------------------------------|------|
| Confidence of 95% (U = 2Uc(y))       | 3.70 |

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

| Measuring Uncertainty for a Level of | 2.09 |
|--------------------------------------|------|
| Confidence of 95% (U = 2Uc(y))       | 3.98 |



# Appendix A. Test Results of Conducted Test

# Conducted Output Power(Average power)

| LTE Band 26 Maximum Average Power [dBm] |         |           |        |        |        |         |  |  |  |
|---|---------|-----------|--------|--------|--------|---------|--|--|--|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |  |  |  |
| 15                                      | 1       | 0         |        | 22.65  | -      | -       |  |  |  |
| 15                                      | 1       | 37        |        | 22.65  | -      | -       |  |  |  |
| 15                                      | 1       | 74        |        | 22.53  | -      | -       |  |  |  |
| 15                                      | 36      | 0         | QPSK   | 21.76  | -      | -       |  |  |  |
| 15                                      | 36      | 20        |        | 20.90  | -      | -       |  |  |  |
| 15                                      | 36      | 39        |        | 21.59  | -      | -       |  |  |  |
| 15                                      | 75      | 0         |        | 21.65  | -      | -       |  |  |  |
| 15                                      | 1       | 0         |        | 21.97  | -      | -       |  |  |  |
| 15                                      | 1       | 37        |        | 21.95  | -      | -       |  |  |  |
| 15                                      | 1       | 74        |        | 21.88  | -      | -       |  |  |  |
| 15                                      | 36      | 0         | 16-QAM | 20.80  | -      | -       |  |  |  |
| 15                                      | 36      | 20        |        | 20.75  | -      | -       |  |  |  |
| 15                                      | 36      | 39        |        | 20.68  | -      | -       |  |  |  |
| 15                                      | 75      | 0         |        | 20.74  | -      | -       |  |  |  |
| 15                                      | 1       | 0         |        | 20.85  | -      | -       |  |  |  |
| 15                                      | 1       | 37        |        | 20.89  | -      | -       |  |  |  |
| 15                                      | 1       | 74        |        | 20.79  | -      | -       |  |  |  |
| 15                                      | 36      | 0         | 64-QAM | 19.80  | -      | -       |  |  |  |
| 15                                      | 36      | 20        |        | 19.79  | -      | -       |  |  |  |
| 15                                      | 36      | 39        |        | 19.72  | -      | -       |  |  |  |
| 15                                      | 75      | 0         |        | 19.71  | -      | -       |  |  |  |
| 10                                      | 1       | 0         |        | -      | 22.57  | -       |  |  |  |
| 10                                      | 1       | 25        |        | -      | 22.57  | -       |  |  |  |
| 10                                      | 1       | 49        |        | -      | 22.49  | -       |  |  |  |
| 10                                      | 25      | 0         | QPSK   | -      | 21.63  | -       |  |  |  |
| 10                                      | 25      | 12        | QFSK   | -      | 21.60  | -       |  |  |  |
| 10                                      | 25      | 25        |        | -      | 21.55  | -       |  |  |  |
| 10                                      | 50      | 0         |        | -      | 21.56  | -       |  |  |  |
| 10                                      | 1       | 0         |        | -      | 21.91  | -       |  |  |  |
| 10                                      | 1       | 25        |        | -      | 21.91  | -       |  |  |  |
| 10                                      | 1       | 49        |        | -      | 21.85  | -       |  |  |  |
| 10                                      | 25      | 0         | 16-QAM | -      | 20.70  | -       |  |  |  |
| 10                                      | 25      | 12        |        | -      | 20.74  | -       |  |  |  |
| 10                                      | 25      | 25        |        | -      | 20.68  | -       |  |  |  |
| 10                                      | 50      | 0         |        | -      | 20.66  | -       |  |  |  |
| 10                                      | 1       | 0         |        | -      | 20.74  | -       |  |  |  |
| 10                                      | 1       | 25        |        | -      | 20.83  | -       |  |  |  |
| 10                                      | 1       | 49        |        | -      | 20.78  | -       |  |  |  |
| 10                                      | 25      | 0         | 64-QAM | -      | 19.73  | -       |  |  |  |
| 10                                      | 25      | 12        |        | -      | 19.68  | -       |  |  |  |
| 10                                      | 25      | 25        |        | -      | 19.68  | -       |  |  |  |
| 10                                      | 50      | 0         |        | -      | 19.69  | -       |  |  |  |



# Report No. : FG811821-07C

| LTE Band 26 Maximum Average Power [dBm] |         |           |        |        |        |         |  |  |
|---|---------|-----------|--------|--------|--------|---------|--|--|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |  |  |
| 5                                       | 1       | 0         |        | 22.51  | 22.62  | 22.61   |  |  |
| 5                                       | 1       | 12        |        | 22.42  | 22.57  | 22.51   |  |  |
| 5                                       | 1       | 24        |        | 22.53  | 22.53  | 22.49   |  |  |
| 5                                       | 12      | 0         | QPSK   | 21.48  | 21.60  | 21.54   |  |  |
| 5                                       | 12      | 7         |        | 21.56  | 21.59  | 21.54   |  |  |
| 5                                       | 12      | 13        |        | 21.54  | 21.57  | 21.54   |  |  |
| 5                                       | 25      | 0         |        | 21.58  | 21.59  | 21.56   |  |  |
| 5                                       | 1       | 0         |        | 21.82  | 21.94  | 21.87   |  |  |
| 5                                       | 1       | 12        |        | 21.73  | 21.86  | 21.85   |  |  |
| 5                                       | 1       | 24        |        | 21.87  | 21.82  | 21.86   |  |  |
| 5                                       | 12      | 0         | 16-QAM | 20.60  | 20.66  | 20.63   |  |  |
| 5                                       | 12      | 7         |        | 20.70  | 20.71  | 20.64   |  |  |
| 5                                       | 12      | 13        |        | 20.66  | 20.71  | 20.66   |  |  |
| 5                                       | 25      | 0         |        | 20.66  | 20.72  | 20.65   |  |  |
| 5                                       | 1       | 0         |        | 20.76  | 20.84  | 20.81   |  |  |
| 5                                       | 1       | 12        |        | 20.70  | 20.77  | 20.78   |  |  |
| 5                                       | 1       | 24        | 64-QAM | 20.80  | 20.80  | 20.76   |  |  |
| 5                                       | 12      | 0         |        | 19.63  | 19.75  | 19.70   |  |  |
| 5                                       | 12      | 7         |        | 19.71  | 19.77  | 19.69   |  |  |
| 5                                       | 12      | 13        |        | 19.67  | 19.68  | 19.64   |  |  |
| 5                                       | 25      | 0         |        | 19.69  | 19.66  | 19.63   |  |  |
| 3                                       | 1       | 0         |        | 22.46  | 22.56  | 22.56   |  |  |
| 3                                       | 1       | 8         |        | 22.42  | 22.50  | 22.42   |  |  |
| 3                                       | 1       | 14        |        | 22.36  | 22.50  | 22.46   |  |  |
| 3                                       | 8       | 0         | QPSK   | 21.46  | 21.52  | 21.52   |  |  |
| 3                                       | 8       | 4         |        | 21.49  | 21.58  | 21.56   |  |  |
| 3                                       | 8       | 7         |        | 21.45  | 21.57  | 21.53   |  |  |
| 3                                       | 15      | 0         |        | 21.41  | 21.57  | 21.52   |  |  |
| 3                                       | 1       | 0         |        | 21.76  | 21.87  | 21.84   |  |  |
| 3                                       | 1       | 8         |        | 21.78  | 21.90  | 21.84   |  |  |
| 3                                       | 1       | 14        |        | 21.77  | 21.81  | 21.84   |  |  |
| 3                                       | 8       | 0         | 16-QAM | 20.63  | 20.71  | 20.64   |  |  |
| 3                                       | 8       | 4         |        | 20.61  | 20.69  | 20.65   |  |  |
| 3                                       | 8       | 7         |        | 20.55  | 20.72  | 20.68   |  |  |
| 3                                       | 15      | 0         |        | 20.50  | 20.66  | 20.66   |  |  |
| 3                                       | 1       | 0         |        | 20.70  | 20.77  | 20.83   |  |  |
| 3                                       | 1       | 8         |        | 20.68  | 20.80  | 20.77   |  |  |
| 3                                       | 1       | 14        |        | 20.66  | 20.83  | 20.75   |  |  |
| 3                                       | 8       | 0         | 64-QAM | 19.63  | 19.70  | 19.63   |  |  |
| 3                                       | 8       | 4         |        | 19.57  | 19.75  | 19.64   |  |  |
| 3                                       | 8       | 7         |        | 19.54  | 19.66  | 19.65   |  |  |
| 3                                       | 15      | 0         |        | 19.56  | 19.66  | 19.62   |  |  |



# Report No. : FG811821-07C

|          | LTE Band 26 Maximum Average Power [dBm] |           |        |        |        |         |  |  |  |  |
|----------|---|-----------|--------|--------|--------|---------|--|--|--|--|
| BW [MHz] | RB Size                                 | RB Offset | Mod    | Lowest | Middle | Highest |  |  |  |  |
| 1.4      | 1                                       | 0         |        | 22.43  | 22.54  | 22.49   |  |  |  |  |
| 1.4      | 1                                       | 3         |        | 22.50  | 22.52  | 22.50   |  |  |  |  |
| 1.4      | 1                                       | 5         |        | 22.39  | 22.52  | 22.38   |  |  |  |  |
| 1.4      | 3                                       | 0         | QPSK   | 22.45  | 22.53  | 22.46   |  |  |  |  |
| 1.4      | 3                                       | 1         |        | 22.43  | 22.56  | 22.53   |  |  |  |  |
| 1.4      | 3                                       | 3         |        | 22.41  | 22.50  | 22.46   |  |  |  |  |
| 1.4      | 6                                       | 0         |        | 21.44  | 21.51  | 21.48   |  |  |  |  |
| 1.4      | 1                                       | 0         |        | 21.71  | 21.80  | 21.73   |  |  |  |  |
| 1.4      | 1                                       | 3         |        | 21.75  | 21.86  | 21.82   |  |  |  |  |
| 1.4      | 1                                       | 5         |        | 21.72  | 21.86  | 21.77   |  |  |  |  |
| 1.4      | 3                                       | 0         | 16-QAM | 21.57  | 21.64  | 21.52   |  |  |  |  |
| 1.4      | 3                                       | 1         |        | 21.57  | 21.68  | 21.60   |  |  |  |  |
| 1.4      | 3                                       | 3         |        | 21.52  | 21.63  | 21.54   |  |  |  |  |
| 1.4      | 6                                       | 0         |        | 20.57  | 20.67  | 20.60   |  |  |  |  |
| 1.4      | 1                                       | 0         |        | 20.65  | 20.75  | 20.73   |  |  |  |  |
| 1.4      | 1                                       | 3         |        | 20.70  | 20.79  | 20.74   |  |  |  |  |
| 1.4      | 1                                       | 5         |        | 20.60  | 20.77  | 20.66   |  |  |  |  |
| 1.4      | 3                                       | 0         | 64-QAM | 20.71  | 20.70  | 20.73   |  |  |  |  |
| 1.4      | 3                                       | 1         |        | 20.70  | 20.78  | 20.71   |  |  |  |  |
| 1.4      | 3                                       | 3         |        | 20.68  | 20.75  | 20.65   |  |  |  |  |
| 1.4      | 6                                       | 0         |        | 19.51  | 19.62  | 19.55   |  |  |  |  |



# Appendix B. Test Results of ERP and Radiated Test

# ERP

# <Reporting Only>

|         | LTE Band 26 / 15MHz (Channel 26765) (GT - LC = -5.6 dB) |      |        |             |               |           |         |  |  |  |
|---------|---|------|--------|-------------|---------------|-----------|---------|--|--|--|
| Channel | Mode  | RB   |        | Cond        | ucted         | EIRP      |         |  |  |  |
| Channel | Mode  | Size | Offset | Power (dBm) | Power (Watts) | EIRP(dBm) | EIRP(W) |  |  |  |
| Lowest  |   | 1    | 0      | 22.65       | 0.18          | 17.05     | 0.05    |  |  |  |
| Middle  | QPSK  | -    | -      | -           | -             | -         | -       |  |  |  |
| Highest |   | -    | -      | -           | -             | -         | -       |  |  |  |
| Lowest  | 16QAM   | 1    | 0      | 21.97       | 0.16          | 16.37     | 0.04    |  |  |  |
| Middle  |   | -    | -      | -           | -             | -         | -       |  |  |  |
| Highest |   | -    | -      | -           | -             | -         | -       |  |  |  |
| Lowest  |   | 1    | 37     | 20.89       | 0.12          | 15.29     | 0.03    |  |  |  |
| Middle  | 64QAM   | -    | -      | -           | -             | -         | -       |  |  |  |
| Highest |   | -    | -      | -           | -             | -         | -       |  |  |  |
| Limit   | ERP < 7W  |      |        | Re          | sult          | PA        | SS      |  |  |  |



# **Radiated Spurious Emission**

| Part 90S LTE Banc | <u>  26</u> |
|-------------------|-------------|
|-------------------|-------------|

|         | LTE Band 26 / 15MHz / QPSK |               |                  |                         |                         |                          |                            |                             |                       |
|---------|----------------------------|---------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel | Frequency<br>(MHz)         | EIRP<br>(dBm) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
|         | 1632                       | -63.32        | -13              | -50.32                  | -72.83                  | -68.65                   | 1.22                       | 8.70                        | Н                     |
|         | 2520                       | -62.10        | -13              | -49.10                  | -74.55                  | -69.03                   | 1.44                       | 10.52                       | Н                     |
|         | 3368                       | -60.36        | -13              | -47.36                  | -74.75                  | -68.45                   | 1.76                       | 12.00                       | Н                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | Н                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | Н                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | Н                     |
| Lowest  |                            |               |                  |                         |                         |                          |                            |                             | Н                     |
| Lowest  | 1632                       | -65.47        | -13              | -52.47                  | -73.86                  | -70.80                   | 1.22                       | 8.70                        | V                     |
|         | 2520                       | -62.34        | -13              | -49.34                  | -74.48                  | -69.27                   | 1.44                       | 10.52                       | V                     |
|         | 3368                       | -60.39        | -13              | -47.39                  | -74.6                   | -68.48                   | 1.76                       | 12.00                       | V                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | V                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | V                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | V                     |
|         |                            |               |                  |                         |                         |                          |                            |                             | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.