

Partial FCC Test Report

(PART 22)

Report No.: RF161003C38-5

FCC ID: QYLEM7355Z

Test Model: EM7355Z

Received Date: Oct. 03, 2016

Test Date: Oct. 26, 2016 ~ Nov.02, 2016

Issued Date: Nov. 14, 2016

Applicant: Getac Technology Corporation.

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11568, Taiwan, R.O.C.

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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(R.O.C)

Test Location: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan
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Release Control Record

| Issue No. | Description | Date Issued |
|---------------|------------------|---------------|
| RF161003C38-5 | Original Release | Nov. 14, 2016 |



1 Certificate of Conformity

Product: Radio Module

Brand: Getac

Test Model: EM7355Z

Sample Status: Identical Prototype

Applicant: Getac Technology Corporation.

Test Date: Oct. 26, 2016 ~ Nov.02, 2016

Standards: FCC Part 22, Subpart H

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :

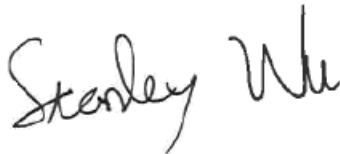


Date:

Nov. 14, 2016

Gina Liu / Specialist

Approved by :



Date:

Nov. 14, 2016

Stanley Wu / Assistant Manager

2 Summary of Test Results

| Applied Standard: FCC Part 22 & Part 2 | | | |
|--|------------------------------|--------|--------------------------------|
| FCC Clause | Test Item | Result | Remarks |
| 2.1046 22.913 (a) | Effective Radiated Power | Pass | Meet the requirement of limit. |
| --- | Peak to Average Ratio | N/A | Refer to Note |
| 2.1055 22.355 | Frequency Stability | N/A | Refer to Note |
| 2.1049 | Occupied Bandwidth | N/A | Refer to Note |
| 22.917 | Band Edge Measurements | N/A | Refer to Note |
| 2.1051 22.917 | Conducted Spurious Emissions | N/A | Refer to Note |
| 2.1053 22.917 | Radiated Spurious Emissions | N/A | Refer to Note |

Note: Only test item of ERP was performed for this report. Other testing data please refer to Sierra Wireless, Inc. EM7355 2G/3G/4G/CDMA Reports for module (FCC ID: E7NEM7355)

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Frequency | Expanded Uncertainty (k=2) (\pm) |
|------------------------------------|--------------------|--------------------------------------|
| Conducted Emissions at mains ports | 150 kHz ~ 30 MHz | 2.44 dB |
| Radiated Emissions up to 1 GHz | 30 MHz ~ 200 MHz | 2.93 dB |
| | 200 MHz ~ 1000 MHz | 2.95 dB |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz | 2.26 dB |
| | 18 GHz ~ 40 GHz | 1.94 dB |

2.2 Test Site and Instruments

| Description & Manufacturer | Model No. | Serial No. | Date of Calibration | Due Date of Calibration |
|--|----------------------|---------------------|---------------------|-------------------------|
| Test Receiver Agilent | N9038A | MY51210203 | Jan. 21, 2016 | Jan. 20, 2017 |
| Signal Generator Agilent | N5182B | MY53050430 | Oct. 19, 2016 | Oct. 18, 2017 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSU43 | 101261 | Dec. 17, 2015 | Dec. 16, 2016 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-472 | Jan. 07, 2016 | Jan. 06, 2017 |
| HORN Antenna SCHWARZBECK | BBHA 9120 D | 9120D-969 | Jan. 04, 2016 | Jan. 03, 2017 |
| Double Ridge Guide Horn Antenna EMCO | 3115 | 5619 | Jan. 04, 2016 | Jan. 03, 2017 |
| BILOG Antenna SCHWARZBECK | VULB 9168 | 9168-153 | Jan. 07, 2016 | Jan. 06, 2017 |
| Agilent Communications Tester-Wireless | 8960 Series 10 | MY53201073 | Jul. 03, 2015 | Jul. 02, 2017 |
| Preamplifier EMCI | EMC 012645 | 980115 | Dec. 21, 2015 | Dec. 20, 2016 |
| Preamplifier EMCI | EMC 184045 | 980116 | Dec. 21, 2015 | Dec. 20, 2016 |
| Preamplifier EMCI | EMC 330H | 980112 | Dec. 28, 2015 | Dec. 27, 2016 |
| Power Meter Anritsu | ML2495A | 1232002 | Sep. 08, 2016 | Sep. 07, 2017 |
| Power Sensor Anritsu | MA2411B | 1207325 | Sep. 08, 2016 | Sep. 07, 2017 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 309219/4 2950114 | Oct. 21, 2016 | Oct. 20, 2017 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 250130/4 | Oct. 21, 2016 | Oct. 20, 2017 |
| RF Coaxial Cable Worken | 8D-FB | Cable-Ch10-01 | Oct. 21, 2016 | Oct. 20, 2017 |
| Software BV ADT | E3 6.120103 | NA | NA | NA |
| Antenna Tower MF | MFA-440H | NA | NA | NA |
| Turn Table MF | MFT-201SS | NA | NA | NA |
| Antenna Tower & Turn Table Controller MF | MF-7802 | NA | NA | NA |
| Radio Communication Analyzer | MT8820C | 6201300640 | Aug. 10, 2015 | Aug. 09, 2017 |
| Temperature & Humidity Chamber | GTH-120-40-CP-A R | MAA1306-019 | Sep. 02, 2016 | Sep. 01, 2017 |
| DC Power Supply Topward | 33010D | 807748 | Oct. 27, 2015 | Oct. 26, 2016 |
| | | | Oct. 25, 2016 | Oct. 24, 2017 |
| Digital Multimeter Fluke | 87-III | 70360742 | Jul. 01, 2016 | Jun. 30, 2017 |

- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

3 General Information

3.1 General Description of EUT

| | | |
|----------------------------|--|--------------------|
| Product | Radio Module | |
| Brand | Getac | |
| Test Model | EM7355Z | |
| Status of EUT | Identical Prototype | |
| Power Supply Rating | 12.0 Vdc (adapter) 3.8 Vdc (Li-ion battery) | |
| Modulation Type | GSM/GPRS | GMSK |
| | EDGE | GMSK, 8PSK |
| | WCDMA | BPSK |
| | CDMA | QPSK, OPQKS, HPSK |
| | LTE | QPSK, 16QAM |
| Frequency Range | GSM/GPRS/EDGE | 824.2 ~ 848.8 MHz |
| | WCDMA | 826.4 ~ 846.6 MHz |
| | CDMA | 824.7 ~ 848.31 MHz |
| | LTE 5 (Channel Bandwidth: 1.4 MHz) | 824.7 ~ 848.3 MHz |
| | LTE 5 (Channel Bandwidth: 3 MHz) | 825.5 ~ 847.5 MHz |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 826.5 ~ 846.5 MHz |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 829 ~ 844 MHz |
| Max. ERP Power | GSM/GPRS | 700.16 mW |
| | EDGE | 290.40 mW |
| | WCDMA | 115.08 mW |
| | CDMA | 133.29 mW |
| | LTE 5 (Channel Bandwidth: 1.4 MHz) | 103.94 mW |
| | LTE 5 (Channel Bandwidth: 3 MHz) | 106.66 mW |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 106.95 mW |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 106.71 mW |
| Antenna Type | PIFA Antenna | |
| Accessory Device | Refer to Note as below | |
| Data Cable Supplied | Refer to Note as below | |

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below table for more details.

| Item | Brand | Model |
|--------|-------|-------|
| Tablet | Getac | ZX70 |

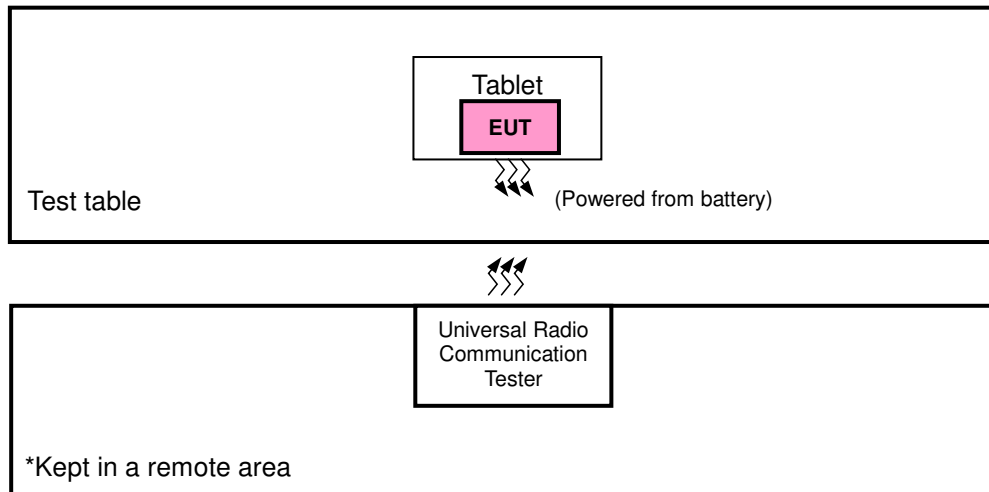
2. The End-product contains following accessory devices.

| Product | Brand | Model | Description |
|----------------|---------|-------------------|---|
| Adapter | APD | WA24Q12R | I/P: 100-240 Vac, 50/60 Hz, 0.7 A O/P: 12 Vdc, 2 A 1.75m shielded cable with 1 core |
| Battery | Getac | BP1S2P4240L | 3.8 Vdc, 8480 mAh |
| LCD Panel | Truly | TDO-HD0698K61701 | 7" |
| Photo Camera | Chicony | CWFFF2520005340LH | 2MPs HD Fix focus camera |
| Video Camera | Chicony | CYAF82520005340LH | 8MPs auto focus camera |
| CPU | intel | Atom Z8350 | 592 PIN |
| Memory | Samsung | K4E6E304EE-EGCE | DDR3 4G (2G*2) |
| Storage | Samsung | KLMBG4GEND-B031 | 32G |
| GPS | U-blox | MAX-M8N | |
| BT/WLAN Module | AMPAK | AP6234 | |
| RFID | Jogtek | TRF7970A | |
| WWAN Module | Sierra | EM7355Z | |
| Fingerprint | IMD | SF1115 | |

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test

<E.R.P. Test>



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| No. | Product | Brand | Model No. | Serial No. | FCC ID |
|-----|---------|-------|-----------|------------|--------|
| 1. | Tablet | Getac | ZX70 | N/A | N/A |

| No. | Signal Cable Description Of The Above Support Units |
|-----|---|
| 1. | N/A |

Note:

1. All power cords of the above support units are non-shielded (1.8m).

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports.

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

| Band | ERP | Band | ERP |
|-------|---------|------------|---------|
| GSM | X-plane | CDMA | Y-plane |
| EDGE | X-plane | LTE Band 5 | X-plane |
| WCDMA | X-plane | | |

GSM

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|--------------------|-----------|-------------------|----------------|-----------|
| - | ERP | 128 to 251 | 128, 189, 251 | GSM, EDGE |

WCDMA

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|--------------------|-----------|-------------------|------------------|-------|
| - | ERP | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |

CDMA

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|--------------------|-----------|-------------------|----------------|-------|
| - | ERP | 1013 to 777 | 1013, 384, 777 | 1xRTT |

LTE Band 5

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
|--------------------|-----------|-------------------|---------------------|-------------------|-------------|---------------------|
| - | ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK, 16QAM | 1 RB / 2 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK, 16QAM | 1 RB / 7 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK, 16QAM | 1 RB / 12 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK, 16QAM | 1 RB / 24 RB Offset |

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

Test Condition:

| Test Item | Environmental Conditions | Input Power | Tested By |
|-----------|--------------------------|-------------|------------|
| ERP | 25 deg. C, 65 % RH | 3.8 Vdc | Getaz Yang |

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v02r02

ANSI/TIA/EIA-603-D 2010

Note: All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

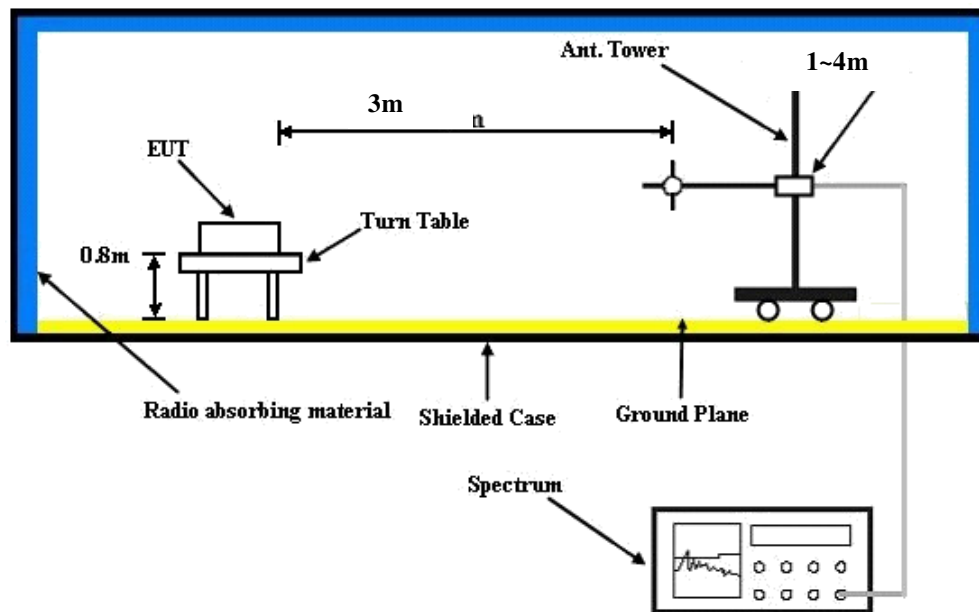
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1 MHz for GSM, GPRS & EDGE, and 5 MHz for WCDMA and CDMA, and 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$.

Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

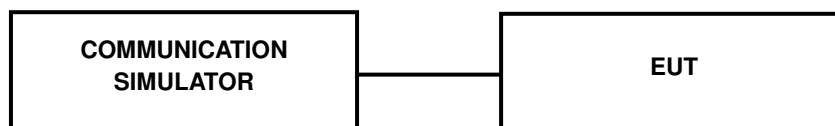
4.1.3 Test Setup

EIRP / ERP Measurement:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

| Band | GSM850 | | |
|-----------------------|--------|-------|-------|
| Channel | 128 | 189 | 251 |
| Frequency (MHz) | 824.2 | 836.4 | 848.8 |
| GPRS (GMSK, 1Tx-slot) | 32.20 | 32.25 | 32.16 |
| GPRS (GMSK, 2Tx-slot) | 32.03 | 32.08 | 31.99 |
| EDGE (8PSK, 1Tx-slot) | 26.75 | 26.80 | 26.71 |
| EDGE (8PSK, 2Tx-slot) | 26.73 | 26.78 | 26.69 |
| EDGE (8PSK, 3Tx-slot) | 26.59 | 26.64 | 26.55 |
| EDGE (8PSK, 4Tx-slot) | 26.46 | 26.51 | 26.42 |

| Band | WCDMA V | | |
|-----------------|---------|-------|-------|
| Channel | 4132 | 4182 | 4233 |
| Frequency (MHz) | 826.4 | 836.4 | 846.6 |
| RMC 12.2K | 22.91 | 23.02 | 22.98 |
| HSDPA Subtest-1 | 22.50 | 22.59 | 22.57 |
| HSDPA Subtest-2 | 22.45 | 22.54 | 22.52 |
| HSDPA Subtest-3 | 22.04 | 22.13 | 22.11 |
| HSDPA Subtest-4 | 22.00 | 22.09 | 22.07 |
| HSUPA Subtest-1 | 21.17 | 21.26 | 21.24 |
| HSUPA Subtest-2 | 20.00 | 20.09 | 20.07 |
| HSUPA Subtest-3 | 20.70 | 20.79 | 20.77 |
| HSUPA Subtest-4 | 19.90 | 20.01 | 19.97 |
| HSUPA Subtest-5 | 21.00 | 21.09 | 21.07 |

| Band | CDMA | | |
|-------------------|--------|--------|--------|
| Channel | 1013 | 384 | 777 |
| Frequency (MHz) | 824.70 | 836.52 | 848.31 |
| RC1+SO55 | 23.83 | 23.92 | 23.64 |
| RC3+SO55 | 23.86 | 23.95 | 23.67 |
| RC3+SO32(+ F-SCH) | 23.85 | 23.94 | 23.66 |
| RC3+SO32(+SCH) | 23.84 | 23.93 | 23.65 |
| RTAP 153.6 | 23.82 | 23.91 | 23.63 |
| RETAP 4096 | 23.81 | 23.90 | 23.62 |

| Band / BW | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
| | | | Low Ch 20407 | Mid Ch 20525 | High Ch 20643 | | Low Ch 20407 | Mid Ch 20525 | High Ch 20643 | |
| | | | 824.7 MHz | 836.5 MHz | 848.3 MHz | | 824.7 MHz | 836.5 MHz | 848.3 MHz | |
| 5 / 1.4M | 1 | 0 | 22.45 | 22.49 | 22.51 | 0 | 21.38 | 21.42 | 21.44 | 1 |
| | 1 | 2 | 22.48 | 22.52 | 22.54 | 0 | 21.41 | 21.45 | 21.47 | 1 |
| | 1 | 5 | 22.47 | 22.51 | 22.53 | 0 | 21.40 | 21.44 | 21.46 | 1 |
| | 3 | 0 | 22.33 | 22.37 | 22.39 | 0 | 21.26 | 21.30 | 21.32 | 1 |
| | 3 | 1 | 22.41 | 22.45 | 22.47 | 0 | 21.34 | 21.38 | 21.40 | 1 |
| | 3 | 3 | 22.35 | 22.39 | 22.41 | 0 | 21.28 | 21.32 | 21.34 | 1 |
| | 6 | 0 | 21.51 | 21.55 | 21.57 | 1 | 20.44 | 20.48 | 20.50 | 2 |

| Band / BW | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
| | | | Low Ch 20415 | Mid Ch 20525 | High Ch 20635 | | Low Ch 20415 | Mid Ch 20525 | High Ch 20635 | |
| | | | 825.5 MHz | 836.5 MHz | 847.5 MHz | | 825.5 MHz | 836.5 MHz | 847.5 MHz | |
| 5 / 3M | 1 | 0 | 22.64 | 22.68 | 22.70 | 0 | 21.57 | 21.61 | 21.63 | 1 |
| | 1 | 7 | 22.67 | 22.71 | 22.73 | 0 | 21.60 | 21.64 | 21.66 | 1 |
| | 1 | 14 | 22.66 | 22.70 | 22.72 | 0 | 21.59 | 21.63 | 21.65 | 1 |
| | 8 | 0 | 21.73 | 21.77 | 21.79 | 1 | 20.66 | 20.70 | 20.72 | 2 |
| | 8 | 3 | 21.81 | 21.85 | 21.87 | 1 | 20.74 | 20.78 | 20.80 | 2 |
| | 8 | 7 | 21.75 | 21.79 | 21.81 | 1 | 20.68 | 20.72 | 20.74 | 2 |
| | 15 | 0 | 21.70 | 21.74 | 21.76 | 1 | 20.63 | 20.67 | 20.69 | 2 |

| Band / BW | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
| | | | Low Ch 20425 | Mid Ch 20525 | High Ch 20625 | | Low Ch 20425 | Mid Ch 20525 | High Ch 20625 | |
| | | | 826.5 MHz | 836.5 MHz | 846.5 MHz | | 826.5 MHz | 836.5 MHz | 846.5 MHz | |
| 5 / 5M | 1 | 0 | 22.87 | 22.91 | 22.93 | 0 | 21.80 | 21.84 | 21.86 | 1 |
| | 1 | 12 | 22.90 | 22.94 | 22.96 | 0 | 21.83 | 21.87 | 21.89 | 1 |
| | 1 | 24 | 22.89 | 22.93 | 22.95 | 0 | 21.82 | 21.86 | 21.88 | 1 |
| | 12 | 0 | 21.96 | 22.00 | 22.02 | 1 | 20.89 | 20.93 | 20.95 | 2 |
| | 12 | 6 | 22.04 | 22.08 | 22.10 | 1 | 20.97 | 21.01 | 21.03 | 2 |
| | 12 | 13 | 21.98 | 22.02 | 22.04 | 1 | 20.91 | 20.95 | 20.97 | 2 |
| | 25 | 0 | 21.93 | 21.97 | 21.99 | 1 | 20.86 | 20.90 | 20.92 | 2 |

| Band / BW | RB Size | RB Offset | QPSK | | | 3GPP MPR (dB) | 16QAM | | | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
| | | | Low Ch 20450 | Mid Ch 20525 | High Ch 20600 | | Low Ch 20450 | Mid Ch 20525 | High Ch 20600 | |
| | | | 829.0 MHz | 836.5 MHz | 844.0 MHz | | 829.0 MHz | 836.5 MHz | 844.0 MHz | |
| 5 / 10M | 1 | 0 | 23.02 | 23.06 | 23.08 | 0 | 21.95 | 21.99 | 22.01 | 1 |
| | 1 | 24 | 23.05 | 23.09 | 23.11 | 0 | 21.98 | 22.02 | 22.04 | 1 |
| | 1 | 49 | 23.04 | 23.08 | 23.10 | 0 | 21.97 | 22.01 | 22.03 | 1 |
| | 25 | 0 | 22.11 | 22.15 | 22.17 | 1 | 21.04 | 21.08 | 21.10 | 2 |
| | 25 | 12 | 22.19 | 22.23 | 22.25 | 1 | 21.12 | 21.16 | 21.18 | 2 |
| | 25 | 25 | 22.13 | 22.17 | 22.19 | 1 | 21.06 | 21.10 | 21.12 | 2 |
| | 50 | 0 | 22.08 | 22.12 | 22.14 | 1 | 21.01 | 21.05 | 21.07 | 2 |

ERP Power (dBm)

| GSM | | | | | | | |
|-------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 128 | 824.2 | -0.95 | 31.208 | 28.11 | 646.84 | H |
| | 189 | 836.4 | -0.75 | 31.3 | 28.40 | 691.83 | |
| | 251 | 848.8 | -0.62 | 31.222 | 28.45 | 700.16 | |
| | 128 | 824.2 | -6.48 | 31.504 | 22.87 | 193.82 | V |
| | 189 | 836.4 | -6.32 | 31.117 | 22.65 | 183.95 | |
| | 251 | 848.8 | -6.85 | 31.922 | 22.92 | 195.97 | |

| EDGE | | | | | | | |
|-------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 128 | 824.2 | -4.55 | 31.208 | 24.51 | 282.36 | H |
| | 189 | 836.4 | -4.52 | 31.3 | 24.63 | 290.40 | |
| | 251 | 848.8 | -4.85 | 31.222 | 24.22 | 264.36 | |
| | 128 | 824.2 | -11.26 | 31.504 | 18.09 | 64.48 | V |
| | 189 | 836.4 | -10.85 | 31.117 | 18.12 | 64.82 | |
| | 251 | 848.8 | -11.68 | 31.922 | 18.09 | 64.45 | |

| WCDMA | | | | | | | |
|-------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 4132 | 826.4 | -8.63 | 31.208 | 20.43 | 110.36 | H |
| | 4182 | 836.4 | -8.54 | 31.3 | 20.61 | 115.08 | |
| | 4233 | 846.6 | -8.54 | 31.222 | 20.53 | 113.03 | |
| | 4132 | 826.4 | -14.83 | 31.504 | 14.52 | 28.34 | V |
| | 4182 | 836.4 | -14.62 | 31.117 | 14.35 | 27.21 | |
| | 4233 | 846.6 | -15.26 | 31.922 | 14.51 | 28.26 | |

| CDMA | | | | | | | |
|-------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Y | 1013 | 824.7 | -7.81 | 31.208 | 21.25 | 133.29 | H |
| | 384 | 836.52 | -8.05 | 31.3 | 21.10 | 128.82 | |
| | 777 | 848.31 | -7.95 | 31.222 | 21.12 | 129.48 | |
| | 1013 | 824.7 | -14.24 | 31.504 | 15.11 | 32.46 | V |
| | 384 | 836.52 | -13.82 | 31.117 | 15.15 | 32.71 | |
| | 777 | 848.31 | -14.68 | 31.922 | 15.09 | 32.30 | |

| LTE Band 5 | | | | | | | |
|------------------------------------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 1.4 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20407 | 824.7 | -8.89 | 31.208 | 20.17 | 103.94 | H |
| | 20525 | 836.5 | -9.03 | 31.3 | 20.12 | 102.80 | |
| | 20643 | 848.3 | -8.94 | 31.222 | 20.13 | 103.09 | |
| | 20407 | 824.7 | -15.26 | 31.504 | 14.09 | 25.67 | V |
| | 20525 | 836.5 | -14.92 | 31.117 | 14.05 | 25.39 | |
| | 20643 | 848.3 | -15.63 | 31.922 | 14.14 | 25.95 | |
| Channel Bandwidth: 1.4 MHz / 16QAM | | | | | | | |
| X | 20407 | 824.7 | -9.95 | 31.208 | 19.11 | 81.43 | H |
| | 20525 | 836.5 | -10.14 | 31.3 | 19.01 | 79.62 | |
| | 20643 | 848.3 | -9.98 | 31.222 | 19.09 | 81.13 | |
| | 20407 | 824.7 | -16.26 | 31.504 | 13.09 | 20.39 | V |
| | 20525 | 836.5 | -15.89 | 31.117 | 13.08 | 20.31 | |
| | 20643 | 848.3 | -16.71 | 31.922 | 13.06 | 20.24 | |

| LTE Band 5 | | | | | | | |
|----------------------------------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 3 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20415 | 825.5 | -8.95 | 31.208 | 20.11 | 102.52 | H |
| | 20525 | 836.5 | -8.87 | 31.3 | 20.28 | 106.66 | |
| | 20635 | 847.5 | -8.96 | 31.222 | 20.11 | 102.61 | |
| | 20415 | 825.5 | -15.09 | 31.504 | 14.26 | 26.69 | V |
| | 20525 | 836.5 | -14.95 | 31.117 | 14.02 | 25.22 | |
| | 20635 | 847.5 | -15.67 | 31.922 | 14.10 | 25.72 | |
| Channel Bandwidth: 3 MHz / 16QAM | | | | | | | |
| X | 20415 | 825.5 | -10.01 | 31.208 | 19.05 | 80.32 | H |
| | 20525 | 836.5 | -10.08 | 31.3 | 19.07 | 80.72 | |
| | 20635 | 847.5 | -9.97 | 31.222 | 19.10 | 81.32 | |
| | 20415 | 825.5 | -16.26 | 31.504 | 13.09 | 20.39 | V |
| | 20525 | 836.5 | -15.92 | 31.117 | 13.05 | 20.17 | |
| | 20635 | 847.5 | -16.58 | 31.922 | 13.19 | 20.85 | |

| LTE Band 5 | | | | | | | |
|----------------------------------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 5 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20425 | 826.5 | -8.86 | 31.208 | 20.20 | 104.66 | H |
| | 20525 | 836.5 | -8.92 | 31.3 | 20.23 | 105.44 | |
| | 20625 | 846.5 | -8.78 | 31.222 | 20.29 | 106.95 | |
| | 20425 | 826.5 | -15.26 | 31.504 | 14.09 | 25.67 | V |
| | 20525 | 836.5 | -14.97 | 31.117 | 14.00 | 25.10 | |
| | 20625 | 846.5 | -15.62 | 31.922 | 14.15 | 26.01 | |
| Channel Bandwidth: 5 MHz / 16QAM | | | | | | | |
| X | 20425 | 826.5 | -9.97 | 31.208 | 19.09 | 81.06 | H |
| | 20525 | 836.5 | -10.06 | 31.3 | 19.09 | 81.10 | |
| | 20625 | 846.5 | -9.96 | 31.222 | 19.11 | 81.51 | |
| | 20425 | 826.5 | -16.21 | 31.504 | 13.14 | 20.63 | V |
| | 20525 | 836.5 | -15.82 | 31.117 | 13.15 | 20.64 | |
| | 20625 | 846.5 | -16.62 | 31.922 | 13.15 | 20.66 | |

| LTE Band 5 | | | | | | | |
|-----------------------------------|---------|-----------------|-----------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 10 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | LVL (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20450 | 829.0 | -8.97 | 31.208 | 20.09 | 102.05 | H |
| | 20525 | 836.5 | -9.06 | 31.3 | 20.09 | 102.09 | |
| | 20600 | 844.0 | -8.79 | 31.222 | 20.28 | 106.71 | |
| | 20450 | 829.0 | -15.26 | 31.504 | 14.09 | 25.67 | V |
| | 20525 | 836.5 | -14.87 | 31.117 | 14.10 | 25.69 | |
| | 20600 | 844.0 | -15.63 | 31.922 | 14.14 | 25.95 | |
| Channel Bandwidth: 10 MHz / 16QAM | | | | | | | |
| X | 20450 | 829.0 | -9.89 | 31.208 | 19.17 | 82.57 | H |
| | 20525 | 836.5 | -10.11 | 31.3 | 19.04 | 80.17 | |
| | 20600 | 844.0 | -9.54 | 31.222 | 19.53 | 89.78 | |
| | 20450 | 829.0 | -16.26 | 31.504 | 13.09 | 20.39 | V |
| | 20525 | 836.5 | -15.89 | 31.117 | 13.08 | 20.31 | |
| | 20600 | 844.0 | -16.64 | 31.922 | 13.13 | 20.57 | |

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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