

## **Partial FCC Test Report**

## (PART 24)

Report No.: RF180802C04-1

FCC ID: WIYT910

Test Model: LE910-NA1

Received Date: Aug. 02, 2018

Test Date: Aug. 20, 2018 ~ Aug. 21, 2018

**Issued Date:** Sep. 14, 2018

Applicant: CASTLES TECHNOLOGY CO., LTD.

Address: 6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI

CITY 23143, TAIWAN (R. O. C.)

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

(R.O.C)

Test Location (1): No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City

33383, Taiwan (R.O.C)

Test Location (2): No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan,

R.O.C

FCC Registration /

427177 / TW0011

**Designation Number:** 





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## **Release Control Record**

| Issue No.     | Description      | Date Issued   |
|---------------|------------------|---------------|
| RF180802C04-1 | Original Release | Sep. 14, 2018 |



#### 1 Certificate of Conformity

Product: LTE module

Brand: Telit

Test Model: LE910-NA1

Sample Status: Identical Prototype

Applicant: CASTLES TECHNOLOGY CO., LTD.

Test Date: Aug. 20, 2018 ~ Aug. 21, 2018

Standards: FCC Part 24, Subpart E

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 RF characteristics under the conditions specified in this report.

Gina Liu / Specialist

Dylan Chiou / Project Engineer



#### 2 Summary of Test Results

|                                      | Applied Standard: FCC Part 24 & Part 2 |        |   |  |  |  |  |  |
|--------------------------------------|--|--------|---|--|--|--|--|--|
| FCC Test Item                        |  | Result | Remarks   |  |  |  |  |  |
| 2.1046<br>24.232                     | I Effective Isotropic Radiated Power I |        | Meet the requirement of limit.  |  |  |  |  |  |
| 2.1047                               | Modulation Characteristics             | N/A    | Refer to Note   |  |  |  |  |  |
| 2.1046<br>24.232(d)                  | Peak to Average Ratio                  |        | Refer to Note   |  |  |  |  |  |
| 2.1055<br>24.235 Frequency Stability |  | N/A    | Refer to Note   |  |  |  |  |  |
| 2.1049<br>24.238(b)                  | ( )ccupied Bandwidth                   |        | Refer to Note   |  |  |  |  |  |
| 24.238(b)                            | Band Edge Measurements                 | N/A    | Refer to Note   |  |  |  |  |  |
| 2.1051 Conducted Spurious Emissions  |  | N/A    | Refer to Note   |  |  |  |  |  |
| 2.1053<br>24.238                     | Radiated Spurious Emissions            | Pass   | Meet the requirement of limit. Minimum passing margin is -18.30 dB at 13300.00 MHz. |  |  |  |  |  |

#### Note:

This report is a partial report. Therefore, only test item of Effective Isotropic Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to ATL report no.: 1506FR22-01 and 1506FR21-01 for module (Brand: Telit, Model: LE910-NA V2)

## 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          | Expended Uncertainty (k=2) (±) |
|---------------------------------|--------------------|--------------------------------|
| Dodicted Emissions up to 1 CHz  | 30 MHz ~ 200 MHz   | 2.0153 dB                      |
| Radiated Emissions up to 1 GHz  | 200 MHz ~ 1000 MHz | 2.0224 dB                      |
| Radiated Emissions above 1 GHz  | 1 GHz ~ 18 GHz     | 1.0121 dB                      |
| Radiated Effissions above 1 GHZ | 18 GHz ~ 40 GHz    | 1.1508 dB                      |



#### 2.2 Test Site and Instruments

| Description &<br>Manufacturer                 | Model No.        | Serial No.  | Date of<br>Calibration | Due Date of<br>Calibration |
|---|------------------|---|------------------------|----------------------------|
| Test Receiver<br>Agilent Technologies         | N9038A           | MY51210203  | Mar. 16, 2018          | Mar. 15, 2019              |
| Spectrum Analyzer<br>ROHDE & SCHWARZ          | FSU43            | 101261  | Jan. 11, 2018          | Jan. 10, 2019              |
| BILOG Antenna<br>SCHWARZBECK                  | VULB9168         | 9168-472  | Dec. 06, 2017          | Dec. 05, 2018              |
| HORN Antenna<br>ETS-Lindgren                  | 3117             | 00143293  | Dec. 13, 2017          | Dec. 12, 2018              |
| HORN Antenna<br>SCHWARZBECK                   | BBHA 9170        | 9170-480  | Dec. 01, 2017          | Nov. 30, 2018              |
| Fixed Attenuator<br>Mini-Circuits             | MDCS18N-10       | MDCS18N-10-01   | Apr. 16, 2018          | Apr. 15, 2019              |
| MXG Vector signal generator                   | N5182B           | MY53050430  | Oct. 24, 2017          | Oct. 23, 2018              |
| Preamplifier<br>Agilent                       | 310N             | 187226  | Jun. 19, 2018          | Jun. 18, 2019              |
| Preamplifier<br>Agilent                       | 83017A           | MY39501357  | Jun. 19, 2018          | Jun. 18, 2019              |
| RF signal cable<br>ETS-LINDGREN               | 5D-FB            | Cable-CH1-01(RF<br>C-SMS-100-SMS-<br>120+RFC-SMS-1<br>00-SMS-400) | Jun. 19, 2018          | Jun. 18, 2019              |
| RF signal cable<br>ETS-LINDGREN               | 8D-FB            | Cable-CH1-02(RF<br>C-SMS-100-SMS-<br>24)                          | Jun. 19, 2018          | Jun. 18, 2019              |
| Software<br>BV ADT                            | E3<br>8.130425b  | NA  | NA                     | NA                         |
| Antenna Tower<br>MF                           | NA               | NA  | NA                     | NA                         |
| Turn Table<br>MF                              | NA               | NA  | NA                     | NA                         |
| Antenna Tower &Turn<br>Table Controller<br>MF | MF-7802          | NA  | NA                     | NA                         |
| Communications<br>Tester-Wireless<br>Agilent  | 8960 Series 10   | MY53201073  | Jun. 28, 2017          | Jun. 27, 2019              |
| Radio Communication<br>Analyzer<br>Anritsu    | MT8820C          | 6201010284  | Dec. 28, 2017          | Dec. 27, 2018              |
| Temperature & Humidity<br>Chamber             | GTH-120-40-CP-AR | MAA1306-019   | Sep. 08, 2017          | Sep. 07, 2018              |
| DC Power Supply<br>Topward                    | 33010D           | 807748  | Oct. 25, 2016          | Oct. 24, 2018              |
| Digital Multimeter<br>Fluke                   | 87-III           | 70360742  | Jun. 29, 2018          | Jun. 28, 2019              |

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 HsinTien Chamber 1.
- 3. The horn antenna and preamplifier (model: 83017A) are used only for the measurement of emission frequency above 1 GHz if tested.
- 4. The IC Site Registration No. is IC7450I-1.



#### 3 General Information

## 3.1 General Description of EUT

| Product             | LTE module                                       |                     |  |  |  |  |
|---------------------|--|---------------------|--|--|--|--|
| Brand               | Telit  |                     |  |  |  |  |
| Test Model          | LE910-NA1  |                     |  |  |  |  |
| Status of EUT       | Identical Prototype                              |                     |  |  |  |  |
| Dawer Commby Dating | 5.0 Vdc (adapter or host equipment)              |                     |  |  |  |  |
| Power Supply Rating | 3.7 Vdc (battery)                                |                     |  |  |  |  |
| Madulation Type     | WCDMA  | QPSK                |  |  |  |  |
| Modulation Type     | LTE  | QPSK, 16QAM         |  |  |  |  |
|                     | WCDMA  | 1852.4 ~ 1907.6 MHz |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 1.4 MHz)          | 1850.7 ~ 1909.3 MHz |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 3 MHz)            | 1851.5 ~ 1908.5 MHz |  |  |  |  |
| Frequency Range     | LTE Band 2 (Channel Bandwidth: 5 MHz)            | 1852.5 ~ 1907.5 MHz |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 10 MHz)           | 1855.0 ~ 1905.0 MHz |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 15 MHz)           | 1857.5 ~ 1902.5 MHz |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 20 MHz)           | 1860.0 ~ 1900.0 MHz |  |  |  |  |
|                     | WCDMA  | 244.34 mW           |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 1.4 MHz)          | 254.68 mW           |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 3 MHz)            | 256.45 mW           |  |  |  |  |
| Max. EIRP Power     | LTE Band 2 (Channel Bandwidth: 5 MHz)            | 258.23 mW           |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 10 MHz)           | 260.02 mW           |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 15 MHz)           | 262.42 mW           |  |  |  |  |
|                     | LTE Band 2 (Channel Bandwidth: 20 MHz) 264.24 mW |                     |  |  |  |  |
| Antenna Type        | Dipole Antenna with 1.19 dBi gain                |                     |  |  |  |  |
| Accessory Device    | Refer to Note as below                           |                     |  |  |  |  |
| Data Cable Supplied | Refer to Note as below                           |                     |  |  |  |  |

## Note:

- 1. The EUT was installed in POS Terminal (Brand: CASTLES TECHNOLOGY, Model: VEGA3000).
- 2. The EUT contains following accessory devices.

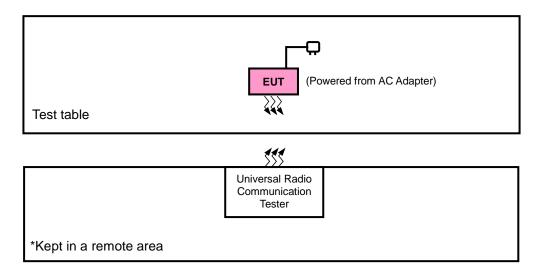
| Product   | Brand                         | Model        | Description |
|-----------|-------------------------------|--------------|-------------|
| USB Cable | CHANG YANG ELECTRON CO., LTD. | CY-AS-HK0059 | 1 m         |

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

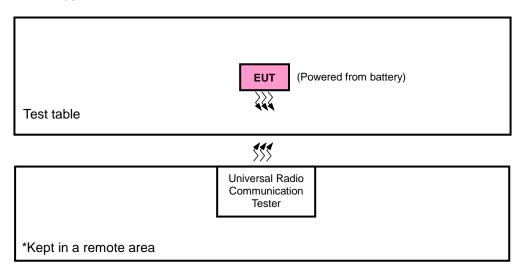


## 3.2 Configuration of System under Test

#### <Radiated Emission Test>



#### <E.I.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.  | Adapter | LUCENT | 1A52-UB52A | 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).
- 2. Item 1 was provided by client.



#### 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       | EIRP    | Radiated Emission |
|------------|---------|-------------------|
| WCDMA      | X-plane | Z-axis            |
| LTE Band 2 | Z-plane | Z-axis            |

#### **WCDMA**

| EUT<br>Configure Test Item<br>Mode |                              | Available Channel | Tested Channel   | Mode  |
|------------------------------------|------------------------------|-------------------|------------------|-------|
| -                                  | EIRP                         | 9262 to 9538      | 9262, 9400, 9538 | WCDMA |
| -                                  | Radiated Emission below 1GHz | 9262 to 9538      | 9538             | WCDMA |
| -                                  | Radiated Emission above 1GHz | 9262 to 9538      | 9262, 9400, 9538 | WCDMA |

#### LTE Band 2

| EUT<br>Configure<br>Mode | Test Item                          | Available<br>Channel | Tested Channel      | Channel<br>Bandwidth | Modulation  | Mode               |
|--------------------------|------------------------------------|----------------------|---------------------|----------------------|-------------|--------------------|
|                          |                                    | 18607 to 19193       | 18607, 18900, 19193 | 1.4 MHz              | QPSK, 16QAM | 1 RB / 0 RB Offset |
|                          |                                    | 18615 to 19185       | 18615, 18900, 19185 | 3 MHz                | QPSK, 16QAM | 1 RB / 0 RB Offset |
| _                        | EIRP                               | 18625 to 19175       | 18625, 18900, 19175 | 5 MHz                | QPSK, 16QAM | 1 RB / 0 RB Offset |
| _                        |                                    | 18650 to 19150       | 18650, 18900, 19150 | 10 MHz               | QPSK, 16QAM | 1 RB / 0 RB Offset |
|                          |                                    | 18675 to 19125       | 18675, 18900, 19125 | 15 MHz               | QPSK, 16QAM | 1 RB / 0 RB Offset |
|                          |                                    | 18700 to 19100       | 18700, 18900, 19100 | 20 MHz               | QPSK, 16QAM | 1 RB / 0 RB Offset |
| -                        | Radiated<br>Emission<br>below 1GHz | 18700 to 19100       | 19100               | 20 MHz               | QPSK        | 1 RB / 0 RB Offset |
|                          | Radiated                           | 18607 to 19193       | 18607, 18900, 19193 | 1.4 MHz              | QPSK        | 1 RB / 0 RB Offset |
| -                        | Emission                           | 18625 to 19175       | 18625, 18900, 19175 | 5 MHz                | QPSK        | 1 RB / 0 RB Offset |
|                          | above 1GHz                         | 18700 to 19100       | 18700, 18900, 19100 | 20 MHz               | QPSK        | 1 RB / 0 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             |
|-------------------|--------------------------|----------------|-----------------------|
| EIRP              | 26 deg. C, 58 % RH       | 3.7 Vdc        | Harry Hsueh, Karl Lee |
| Radiated Emission | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | Harry Hsueh, Karl Lee |



#### 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 24 KDB 971168 D01 Power Meas License Digital Systems v03r01 ANSI/TIA/EIA-603-E 2016 ANSI 63.26-2015

**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 2 watts e.i.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, 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 (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 = Output power level of S.G TX cable loss + 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 power = E.I.R.P power 2.15 dB.

#### **Conducted Power Measurement:**

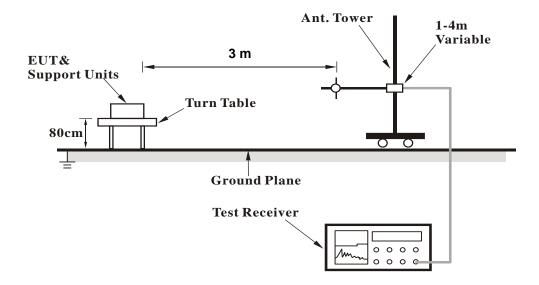
The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



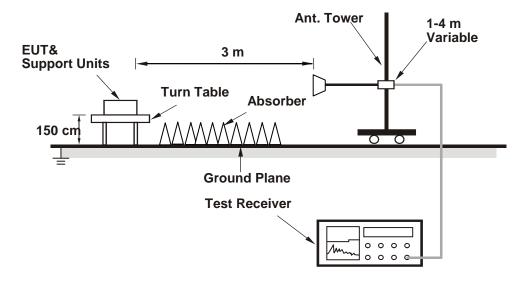
#### 4.1.3 Test Setup

#### **EIRP / ERP Measurement:**

#### <Radiated Emission below or equal 1 GHz>



#### <Radiated Emission above 1 GHz>



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               |        | WCDMA II |        |
|--------------------|--------|----------|--------|
| Channel            | 9262   | 9400     | 9538   |
| Frequency (MHz)    | 1852.4 | 1880.0   | 1907.6 |
| RMC 12.2K          | 22.57  | 22.68    | 22.66  |
| HSDPA Subtest-1    | 22.56  | 22.67    | 22.65  |
| HSDPA Subtest-2    | 22.13  | 22.24    | 22.22  |
| HSDPA Subtest-3    | 21.64  | 21.75    | 21.73  |
| HSDPA Subtest-4    | 21.32  | 21.43    | 21.41  |
| DC-HSDPA Subtest-1 | 22.52  | 22.63    | 22.61  |
| DC-HSDPA Subtest-2 | 22.09  | 22.20    | 22.18  |
| DC-HSDPA Subtest-3 | 21.60  | 21.71    | 21.69  |
| DC-HSDPA Subtest-4 | 21.28  | 21.39    | 21.37  |
| HSUPA Subtest-1    | 22.43  | 22.54    | 22.52  |
| HSUPA Subtest-2    | 20.23  | 20.34    | 20.32  |
| HSUPA Subtest-3    | 21.21  | 21.32    | 21.30  |
| HSUPA Subtest-4    | 20.36  | 20.47    | 20.45  |
| HSUPA Subtest-5    | 22.53  | 22.64    | 22.62  |



| 20M 160  BW Min | MCS Index  QPSK  6QAM  MCS Index | RB Size  Char Frequence  1 1 1 1 50 50 50 100 1 1 1 1 1 50 50 60 100 RB Size  Char Frequence 1 1 1   | ey (MHz) 0 50 99 0 25 50 0 0 50 99 0 25 50 0 RB RB Offset   | Low 18700 1860.0 22.80 22.52 22.30 21.91 21.62 21.53 21.41 22.07 21.51 20.91 20.62 20.52 20.71 Low 18650 1855.0                   | Mid<br>18900<br>1880.0<br>22.89<br>22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid | High 19100 1900.0 22.88 22.60 22.38 21.99 21.70 21.61 21.49 22.15 21.95 21.59 20.70 20.60 20.79 High              | 3GPP MPR (dB) 0 0 0 1 1 1 1 1 1 1 1 1 2 2 2 2 2 3GPP MPR   | BW 15M | MCS<br>Index<br>QPSK | Chair Frequent 1 1 1 1 36 36 36 36 1 1 1 1 36 36 36 36 36 36 36 36 36 36 36 36 36  |   | Low 18675 1857.5 22.80 22.52 22.30 21.91 21.63 21.41 22.07 21.87 21.51 20.91 20.62                       | Mid<br>18900<br>1880.0<br>22.89<br>22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.00<br>20.71 | High<br>19125<br>1902.5<br>22.88<br>22.60<br>22.38<br>21.99<br>21.70<br>21.61<br>21.45<br>22.15<br>21.95<br>21.59<br>20.99 | 3GPP MPR (dB)  0 0 1 1 1 1 1 1 1 2        |
|-----------------|----------------------------------|--|---|---|--|---|--|--------|----------------------|--|---|--|---|--|---|
| 20M 160  BW Min | QPSK 6QAM                        | 1 1 1 50 50 50 50 50 50 50 50 50 50 50 50 50   | nnel cy (MHz) 0 50 99 0 25 50 0 50 99 0 25 50 0 RB Offset nnel cy (MHz) 0   | 22.80<br>22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low | 1880.0 22.89 22.61 22.39 22.00 21.71 21.62 21.50 22.16 21.60 21.00 20.71 20.61 20.80  Mid 18900  | 1900.0 22.88 22.60 22.38 21.99 21.70 21.61 21.49 22.15 21.95 20.99 20.70 20.60 20.79 High                         | (dB)  0 0 1 1 1 1 1 1 2 2 2 3GPP   |        | Index<br>QPSK        | 1 1 1 36 36 75 1 1 1 36 36 36 36 36 36 36 36 36 36   | 0<br>37<br>74<br>0<br>19<br>39<br>0<br>0<br>37<br>74<br>0 | 22.80<br>22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62 | 1880.0<br>22.89<br>22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00                 | 1902.5<br>22.88<br>22.60<br>22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99                  | (dB)  0 0 0 1 1 1 1 1 1 1 1               |
| 20M 160  BW Mn  | 6QAM<br>MCS                      | 1<br>1<br>1<br>50<br>50<br>50<br>100<br>1<br>1<br>1<br>1<br>50<br>50<br>50<br>50<br>100<br>8<br>8<br>8<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9 | 0<br>50<br>99<br>0<br>25<br>50<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>0<br>89<br>0<br>0<br>25<br>50<br>99<br>0<br>0<br>89<br>0<br>0<br>7<br>89<br>99<br>99<br>99<br>99<br>99<br>99<br>99<br>99<br>99<br>99<br>99<br>99 | 22.80<br>22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low | 22.89 22.61 22.39 22.02 21.71 21.62 21.50 22.16 21.96 21.00 20.71 20.61 20.80 Mid  | 22.88<br>22.60<br>22.38<br>21.90<br>21.70<br>21.61<br>21.49<br>22.15<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79 | 0<br>0<br>0<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2                               | 15M    |                      | 1<br>1<br>1<br>36<br>36<br>36<br>36<br>75<br>1<br>1<br>1<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36<br>36 | 0<br>37<br>74<br>0<br>19<br>39<br>0<br>0<br>37<br>74<br>0 | 22.80<br>22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62 | 22.89<br>22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00                           | 22.88<br>22.60<br>22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99                            | 0<br>0<br>0<br>1<br>1<br>1<br>1<br>1<br>1 |
| 20M 160  BW Mn  | 6QAM<br>MCS                      | 1<br>1<br>50<br>50<br>50<br>100<br>1<br>1<br>1<br>50<br>50<br>50<br>50<br>100<br>RB Size   | 50<br>99<br>0<br>25<br>50<br>0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB Offset nnel   | 22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low          | 22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid                           | 22.60<br>22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>20.99<br>20.70<br>20.60<br>20.79          | 0<br>0<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>3<br>3<br>3<br>3<br>9<br>9 | 15M    |                      | 1<br>1<br>36<br>36<br>36<br>75<br>1<br>1<br>1<br>36<br>36<br>36<br>36  | 37<br>74<br>0<br>19<br>39<br>0<br>0<br>37<br>74<br>0      | 22.52<br>22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62          | 22.61<br>22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00                                    | 22.60<br>22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99                                     | 0<br>0<br>1<br>1<br>1<br>1<br>1<br>1      |
| 20M 160  BW Mn  | 6QAM<br>MCS                      | 1<br>50<br>50<br>50<br>100<br>1<br>1<br>1<br>50<br>50<br>50<br>100<br>RB Size  | 99<br>0<br>25<br>50<br>0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset<br>mnel<br>cy (MHz)   | 22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low                   | 22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid                                    | 22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79          | 0<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>3<br>3<br>3<br>3<br>9<br>9      | 15M    |                      | 1<br>36<br>36<br>36<br>75<br>1<br>1<br>1<br>36<br>36<br>36   | 74<br>0<br>19<br>39<br>0<br>0<br>37<br>74<br>0            | 22.30<br>21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62                   | 22.39<br>22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00   | 22.38<br>21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99  | 0 1 1 1 1 1 1 1 1 1 1 1                   |
| 20M 160  BW Mn  | 6QAM<br>MCS                      | 50<br>50<br>50<br>100<br>1<br>1<br>1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 0<br>25<br>50<br>0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset<br>mnel   | 21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0         | 22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid  | 21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79                   | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>3<br>3<br>6<br>PP                         | 15M    |                      | 36<br>36<br>36<br>75<br>1<br>1<br>1<br>36<br>36<br>36  | 0<br>19<br>39<br>0<br>0<br>37<br>74<br>0                  | 21.91<br>21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62                            | 22.00<br>21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00  | 21.99<br>21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99   | 1<br>1<br>1<br>1<br>1<br>1                |
| 20M 160  BW Mn  | 6QAM<br>MCS                      | 50<br>50<br>100<br>1<br>1<br>1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 25<br>50<br>0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset  | 21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0                  | 21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid  | 21.70<br>21.61<br>21.49<br>22.15<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79<br>High                             | 1<br>1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>2<br>3<br>3<br>6<br>PP                         | 15M    |                      | 36<br>36<br>75<br>1<br>1<br>1<br>36<br>36<br>36  | 19<br>39<br>0<br>0<br>37<br>74<br>0                       | 21.62<br>21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62                                     | 21.71<br>21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00   | 21.70<br>21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99  | 1 1 1 1 1 1                               |
| BW Mine         | MCS                              | 50<br>100<br>1<br>1<br>1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 50<br>0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset  | 21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0                           | 21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid   | 21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79                                     | 1<br>1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>2<br>3GPP   | 15M    | 16QAM                | 36<br>75<br>1<br>1<br>1<br>36<br>36<br>36  | 39<br>0<br>0<br>37<br>74<br>0                             | 21.53<br>21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62  | 21.62<br>21.50<br>22.16<br>21.96<br>21.60<br>21.00  | 21.61<br>21.49<br>22.15<br>21.95<br>21.59<br>20.99   | 1 1 1 1 1 1                               |
| BW Mine         | MCS                              | 100 1 1 1 50 50 50 100  RB Size  Char  Frequence 1   | 0<br>0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset  | 21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0                                    | 21.50<br>22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid  | 21.49<br>22.15<br>21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79  | 1<br>1<br>1<br>1<br>2<br>2<br>2<br>2<br>2  | 15M    | 16QAM                | 75<br>1<br>1<br>1<br>36<br>36<br>36  | 0<br>0<br>37<br>74<br>0                                   | 21.41<br>22.07<br>21.87<br>21.51<br>20.91<br>20.62   | 21.50<br>22.16<br>21.96<br>21.60<br>21.00   | 21.49<br>22.15<br>21.95<br>21.59<br>20.99  | 1 1 1 1                                   |
| BW Mine         | MCS                              | 1<br>1<br>1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence   | 0<br>50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset   | 22.07<br>21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0   | 22.16<br>21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid   | 22.15<br>21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79   | 1<br>1<br>2<br>2<br>2<br>2<br>3GPP   | 15M    | 16QAM                | 1<br>1<br>1<br>36<br>36<br>36  | 0<br>37<br>74<br>0<br>19                                  | 22.07<br>21.87<br>21.51<br>20.91<br>20.62  | 22.16<br>21.96<br>21.60<br>21.00  | 22.15<br>21.95<br>21.59<br>20.99   | 1   |
| BW Mine         | MCS                              | 1<br>1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 50<br>99<br>0<br>25<br>50<br>0<br>RB<br>Offset<br>onnel<br>cy (MHz)   | 21.87<br>21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0  | 21.96<br>21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid  | 21.95<br>21.59<br>20.99<br>20.70<br>20.60<br>20.79<br>High  | 1<br>1<br>2<br>2<br>2<br>2<br>3GPP   |        | 16QAM                | 1<br>1<br>36<br>36<br>36   | 37<br>74<br>0<br>19                                       | 21.87<br>21.51<br>20.91<br>20.62   | 21.96<br>21.60<br>21.00   | 21.95<br>21.59<br>20.99  | 1   |
| BW Mine         | MCS                              | 1<br>50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence   | 99<br>0<br>25<br>50<br>0<br>RB<br>Offset<br>nnel<br>cy (MHz)  | 21.51<br>20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0   | 21.60<br>21.00<br>20.71<br>20.61<br>20.80<br>Mid<br>18900  | 21.59<br>20.99<br>20.70<br>20.60<br>20.79<br><b>High</b>  | 2<br>2<br>2<br>2<br>3GPP   |        | 16QAM                | 1<br>36<br>36<br>36  | 74<br>0<br>19   | 21.51<br>20.91<br>20.62  | 21.60<br>21.00  | 21.59<br>20.99   | 1   |
| BW Mine         | MCS                              | 50<br>50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 0<br>25<br>50<br>0<br>RB<br>Offset  | 20.91<br>20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0  | 21.00<br>20.71<br>20.61<br>20.80<br>Mid<br>18900   | 20.99<br>20.70<br>20.60<br>20.79<br><b>High</b>   | 2<br>2<br>2<br>2<br>3GPP   |        | 16QAM                | 36<br>36<br>36   | 0<br>19   | 20.91<br>20.62   | 21.00   | 20.99  |   |
| BW Mine         | MCS                              | 50<br>50<br>100<br>RB Size<br>Char<br>Frequence  | 25<br>50<br>0<br>RB<br>Offset<br>nnel<br>cy (MHz)   | 20.62<br>20.52<br>20.71<br>Low<br>18650<br>1855.0   | 20.71<br>20.61<br>20.80<br>Mid<br>18900  | 20.70<br>20.60<br>20.79<br>High   | 2<br>2<br>2<br>3GPP  |        | TOQAW                | 36<br>36   | 19  | 20.62  |   |  |   |
| QF 10M          |                                  | 50<br>100<br>RB Size<br>Char<br>Frequence  | 50<br>0<br>RB<br>Offset<br>nnel<br>cy (MHz)   | 20.52<br>20.71<br>Low<br>18650<br>1855.0  | 20.61<br>20.80<br>Mid<br>18900   | 20.60<br>20.79<br>High  | 2<br>2<br>3GPP   |        |                      | 36   |   |  |   | 20.70  | 2   |
| QF 10M          |                                  | 100 RB Size Char Frequence 1   | 0<br>RB<br>Offset<br>nnel<br>cy (MHz)   | 20.71<br>Low<br>18650<br>1855.0   | 20.80<br>Mid<br>18900  | 20.79<br><b>High</b>  | 2<br><b>3GPP</b>   |        |                      |  |   | 20.52  | 20.61   | 20.60  | 2   |
| QF              |                                  | Char<br>Frequence<br>1   | RB<br>Offset<br>nnel<br>cy (MHz)  | Low<br>18650<br>1855.0  | Mid<br>18900   | High  | 3GPP   |        |                      | 75   | 0   | 20.71  | 20.80   | 20.79  | 2   |
| QF              |                                  | Frequence<br>1<br>1  | nnel<br>cy (MHz)  | 1855.0  |  | 404EC   | MPP  |        |                      | RB Size  | RB  | Low  | Mid   | High   | 3GPP                                      |
| QF              | ilidex                           | Frequence<br>1<br>1  | 0 (MHz)   | 1855.0  |  |   |  | BW     | MCS<br>Index         | Cha  | Offset  | 18625  | 18900   | 19175  | MPR                                       |
| 10M             |                                  | 1  | 0   |   | 1880.0   | 1905.0  | (dB)   |        | ilidex               | Frequen  |   | 1852.5   | 1880.0  | 1907.5   | (dB)                                      |
| 10M             |                                  | 1  | -   | 22.75   | 22.84  | 22.83   | 0  |        |                      | 1  | 0   | 22.72  | 22.81   | 22.80  | 0   |
| 10M             |                                  |  |   | 22.47   | 22.56  | 22.55   | 0  |        |                      | 1  | 12  | 22.44  | 22.53   | 22.52  | 0   |
| 10M             |                                  |  | 49  | 22.25   | 22.34  | 22.33   | 0  |        |                      | 1  | 24  | 22.22  | 22.31   | 22.30  | 0   |
| 10M             | QPSK                             | 25   | 0   | 21.86   | 21.95  | 21.94   | 1  |        | QPSK                 | 12   | 0   | 21.83  | 21.92   | 21.91  | 1   |
|                 | α. σ. ι                          | 25   | 12  | 21.57   | 21.66  | 21.65   | 1  |        | α. σ. τ              | 12   | 6   | 21.54  | 21.63   | 21.62  | 1   |
|                 |                                  | 25   | 25  | 21.48   | 21.57  | 21.56   | 1  |        |                      | 12   | 13  | 21.45  | 21.54   | 21.53  | 1   |
|                 | 4014                             | 50   | 0   | 21.36   | 21.45  | 21.44   | 1  | -14    |                      | 25   | 0   | 21.33  | 21.42   | 21.41  | 1   |
| 160             |                                  | 1  | 0   | 22.02   | 22.11  | 22.10   | 5M   |        | 1                    | 0  | 21.99   | 22.08  | 22.07   | 1  |   |
| 160             |                                  | 1  | 24  | 21.82   | 21.91  | 21.90   |  |        | 1                    | 12   | 21.79   | 21.88  | 21.87   | 1  |   |
| 160             |                                  | 1  | 49  | 21.46   | 21.55  | 21.54   | 1  | 1 2    | 16QAM                | 1  | 24  | 21.43  | 21.52   | 21.51  | 1   |
|                 | 6QAM                             | 25   | 0   | 20.86   | 20.95  | 20.94   | 2  |        |                      | 12   | 0   | 20.83  | 20.92   | 20.91  | 2   |
|                 |                                  | 25   | 12  | 20.57   | 20.66  | 20.65   | 2  |        |                      | 12   | 6   | 20.54  | 20.63   | 20.62  | 2   |
|                 |                                  | 25   | 25  | 20.47   | 20.56  | 20.55   | 2  |        |                      | 12   | 13  | 20.44  | 20.53   | 20.52  | 2   |
|                 |                                  | 50   | 0   | 20.66   | 20.75  | 20.74   | 2  |        |                      | 25   | 0   | 20.63  | 20.72   | 20.71  | 2   |
| BW M            | MCS                              | RB Size  | RB<br>Offset  | Low   | Mid  | High  | 3GPP<br>MPR  | BW     | MCS                  | RB Size  | RB<br>Offset  | Low  | Mid   | High   | 3GPP<br>MPR                               |
| In              | Index                            | Char   |   | 18615   | 18900  | 19185   | (dB)   | 5,,    | Index                | Cha  |   | 18607  | 18900   | 19193  | (dB)                                      |
|                 |                                  | Frequenc   |   | 1851.5  | 1880.0   | 1908.5  | ` '  |        |                      | Frequen  |   | 1850.7   | 1880.0  | 1909.3   | ` '                                       |
|                 |                                  | 1  | 0   | 22.68   | 22.77  | 22.76   | 0  |        |                      | 1  | 0   | 22.66  | 22.75   | 22.74  | 0   |
|                 |                                  | 1  | 7   | 22.40   | 22.49  | 22.48   | 0  |        |                      | 1  | 2   | 22.38  | 22.47   | 22.46  | 0   |
| 0.              | 00014                            | 1  | 14  | 22.18   | 22.27  | 22.26   | 0  |        | 00016                | 1  | 5   | 22.16  | 22.25   | 22.24  | 0   |
| QF              | QPSK                             | 8  | 0   | 21.79   | 21.88  | 21.87   | 1  |        | QPSK                 | 3  | 0   | 22.57  | 22.71   | 22.69  | 0   |
|                 |                                  | 8  | 3<br>7  | 21.50   | 21.59  | 21.58   | 1  |        |                      | 3  | 1   | 22.52  | 22.61   | 22.60  | 0   |
|                 |                                  | 8  | 0   | 21.41   | 21.50  | 21.49   |  |        |                      | 3  | <u>3</u>  | 22.43  | 22.52<br>22.39  | 22.51<br>22.38   | 0   |
| 3M              |                                  | 15   |   |   | 21.38  | 21.37   | 1  | 1.4M   |                      | 6  |   |  |   |  | 1   |
|                 |                                  | 1  | 0   | 21.95   | 22.04  | 22.03   | 1  |        |                      | 1  | 0   | 21.91  | 22.00   | 21.99  | 1   |
|                 | 40044                            | 1  | 7<br>14   | 21.75<br>21.39  | 21.84<br>21.48   | 21.83   | 1  |        |                      | 1  | <u>2</u><br>5   | 21.71  | 21.80<br>21.44  | 21.79  | 1   |
| 160             |                                  | 8  | 0   | 20.79   | 20.88  | 20.87   | 2  |        | 16QAM                | 3  | 0   | 21.83  | 21.44   | 21.43  | 1   |
| 100             | 60AM                             | 8  | 3   | 20.79   | 20.59  | 20.58   | 2  |        | IOQAW                | 3  | 1   | 21.54  | 21.63   | 21.62  | 1   |
|                 | 6QAM                             |  |   | 20.40   | 20.39  | 20.38   | 2  |        |                      | 3  | 3   | 21.44  | 21.53   | 21.52  | 1   |
|                 | 6QAM                             | 8  | 7   | 20.70   | 20.43  | 20.40   | 2  |        |                      | 6  | 0   | 20.41  | 20.36   | 20.40  | 2   |



EIRP Power (dBm)

|       | WCDMA   |                    |                  |                        |            |           |                       |  |  |  |  |  |
|-------|---------|--------------------|------------------|------------------------|------------|-----------|-----------------------|--|--|--|--|--|
| Plane | Channel | Frequency<br>(MHz) | Reading<br>(dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |  |
|       | 9262    | 1852.4             | -14.38           | 38.19                  | 23.81      | 240.44    |                       |  |  |  |  |  |
| X     | 9400    | 1880.0             | -14.82           | 38.70                  | 23.88      | 244.34    | Н                     |  |  |  |  |  |
|       | 9538    | 1907.6             | -15.50           | 39.35                  | 23.85      | 242.66    |                       |  |  |  |  |  |
| ^     | 9262    | 1852.4             | -18.66           | 38.48                  | 19.82      | 95.94     |                       |  |  |  |  |  |
|       | 9400    | 1880.0             | -18.69           | 38.59                  | 19.90      | 97.72     | V                     |  |  |  |  |  |
|       | 9538    | 1907.6             | -18.99           | 38.87                  | 19.88      | 97.27     |                       |  |  |  |  |  |

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

|       |                                    |                    | LTI              | E Band 2               |            |           |                       |  |  |  |  |
|-------|------------------------------------|--------------------|------------------|------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                    | Ch                 | annel Bandw      | ridth: 1.4 MHz         | / QPSK     |           |                       |  |  |  |  |
| Plane | Channel                            | Frequency<br>(MHz) | Reading<br>(dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18607                              | 1850.7             | -20.73           | 44.70                  | 23.97      | 249.46    |                       |  |  |  |  |
|       | 18900                              | 1880.0             | -20.64           | 44.70                  | 24.06      | 254.68    | Н                     |  |  |  |  |
| Z     | 19193                              | 1909.3             | -20.53           | 44.57                  | 24.04      | 253.69    |                       |  |  |  |  |
|       | 18607                              | 1850.7             | -24.31           | 44.27                  | 19.96      | 99.08     |                       |  |  |  |  |
|       | 18900                              | 1880.0             | -24.78           | 44.87                  | 20.09      | 102.09    | V                     |  |  |  |  |
|       | 19193                              | 1909.3             | -24.54           | 44.61                  | 20.07      | 101.70    |                       |  |  |  |  |
|       | Channel Bandwidth: 1.4 MHz / 16QAM |                    |                  |                        |            |           |                       |  |  |  |  |
|       | 18607                              | 1850.7             | -21.74           | 44.70                  | 22.96      | 197.70    |                       |  |  |  |  |
|       | 18900                              | 1880.0             | -21.64           | 44.70                  | 23.06      | 202.30    | Н                     |  |  |  |  |
| Z     | 19193                              | 1909.3             | -21.54           | 44.57                  | 23.03      | 201.05    |                       |  |  |  |  |
|       | 18607                              | 1850.7             | -25.32           | 44.27                  | 18.95      | 78.52     |                       |  |  |  |  |
|       | 18900                              | 1880.0             | -25.79           | 44.87                  | 19.08      | 80.91     | V                     |  |  |  |  |
|       | 19193                              | 1909.3             | -25.55           | 44.61                  | 19.06      | 80.59     |                       |  |  |  |  |



|       |                                  |                    | LTE              | E Band 2               |            |           |                       |  |  |  |  |
|-------|----------------------------------|--------------------|------------------|------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                  | С                  | hannel Bandv     | width: 3 MHz /         | QPSK       |           |                       |  |  |  |  |
| Plane | Channel                          | Frequency<br>(MHz) | Reading<br>(dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18615                            | 1851.5             | -20.70           | 44.70                  | 24.00      | 251.19    |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -20.61           | 44.70                  | 24.09      | 256.45    | Н                     |  |  |  |  |
| Z     | 19185                            | 1908.5             | -20.49           | 44.57                  | 24.08      | 256.04    |                       |  |  |  |  |
|       | 18615                            | 1851.5             | -24.28           | 44.27                  | 19.99      | 99.77     |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -24.75           | 44.87                  | 20.12      | 102.80    | V                     |  |  |  |  |
|       | 19185                            | 1908.5             | -24.51           | 44.61                  | 20.10      | 102.40    |                       |  |  |  |  |
|       | Channel Bandwidth: 3 MHz / 16QAM |                    |                  |                        |            |           |                       |  |  |  |  |
|       | 18615                            | 1851.5             | -21.71           | 44.70                  | 22.99      | 199.07    |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -21.62           | 44.70                  | 23.08      | 203.24    | Н                     |  |  |  |  |
| Z     | 19185                            | 1908.5             | -21.50           | 44.57                  | 23.07      | 202.91    |                       |  |  |  |  |
|       | 18615                            | 1851.5             | -25.29           | 44.27                  | 18.98      | 79.07     |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -25.75           | 44.87                  | 19.12      | 81.66     | V                     |  |  |  |  |
|       | 19185                            | 1908.5             | -25.52           | 44.61                  | 19.09      | 81.15     |                       |  |  |  |  |

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

|       |                                  |                    | LTE              | E Band 2               |            |           |                       |  |  |  |  |
|-------|----------------------------------|--------------------|------------------|------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                  | С                  | hannel Band      | width: 5 MHz /         | QPSK       |           |                       |  |  |  |  |
| Plane | Channel                          | Frequency<br>(MHz) | Reading<br>(dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18625                            | 1852.5             | -20.67           | 44.70                  | 24.03      | 252.93    |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -20.58           | 44.70                  | 24.12      | 258.23    | Н                     |  |  |  |  |
| Z     | 19175                            | 1907.5             | -20.46           | 44.57                  | 24.11      | 257.81    |                       |  |  |  |  |
| 2     | 18625                            | 1852.5             | -24.24           | 44.27                  | 20.03      | 100.69    |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -24.71           | 44.87                  | 20.16      | 103.75    | V                     |  |  |  |  |
|       | 19175                            | 1907.5             | -24.48           | 44.61                  | 20.13      | 103.11    |                       |  |  |  |  |
|       | Channel Bandwidth: 5 MHz / 16QAM |                    |                  |                        |            |           |                       |  |  |  |  |
|       | 18625                            | 1852.5             | -21.69           | 44.70                  | 23.01      | 199.99    |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -21.59           | 44.70                  | 23.11      | 204.64    | Н                     |  |  |  |  |
| 7     | 19175                            | 1907.5             | -21.47           | 44.57                  | 23.10      | 204.31    |                       |  |  |  |  |
| Z     | 18625                            | 1852.5             | -25.25           | 44.27                  | 19.02      | 79.80     |                       |  |  |  |  |
|       | 18900                            | 1880.0             | -25.72           | 44.87                  | 19.15      | 82.22     | V                     |  |  |  |  |
|       | 19175                            | 1907.5             | -25.49           | 44.61                  | 19.12      | 81.71     |                       |  |  |  |  |



|       |                                   |                    | LTI              | E Band 2                  |            |           |                       |  |  |  |  |
|-------|-----------------------------------|--------------------|------------------|---------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                   | Ch                 | nannel Bandv     | vidth: 10 MHz             | / QPSK     |           |                       |  |  |  |  |
| Plane | Channel                           | Frequency<br>(MHz) | Reading<br>(dBm) | Correction<br>Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18650                             | 1855.0             | -20.64           | 44.70                     | 24.06      | 254.68    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -20.55           | 44.70                     | 24.15      | 260.02    | Н                     |  |  |  |  |
| Z     | 19150                             | 1905.0             | -20.43           | 44.57                     | 24.14      | 259.60    |                       |  |  |  |  |
| 2     | 18650                             | 1855.0             | -24.21           | 44.27                     | 20.06      | 101.39    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -24.67           | 44.87                     | 20.20      | 104.71    | V                     |  |  |  |  |
|       | 19150                             | 1905.0             | -24.45           | 44.61                     | 20.16      | 103.82    |                       |  |  |  |  |
|       | Channel Bandwidth: 10 MHz / 16QAM |                    |                  |                           |            |           |                       |  |  |  |  |
|       | 18650                             | 1855.0             | -21.66           | 44.70                     | 23.04      | 201.37    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -21.56           | 44.70                     | 23.14      | 206.06    | Н                     |  |  |  |  |
| Z     | 19150                             | 1905.0             | -21.45           | 44.57                     | 23.12      | 205.26    |                       |  |  |  |  |
|       | 18650                             | 1855.0             | -25.23           | 44.27                     | 19.04      | 80.17     |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -25.68           | 44.87                     | 19.19      | 82.99     | V                     |  |  |  |  |
|       | 19150                             | 1905.0             | -25.45           | 44.61                     | 19.16      | 82.47     |                       |  |  |  |  |

Note: EIRP (dBm) = Reading (dBm) + Correction Factor (dB)

|       |                                   |                    | LTE              | E Band 2               |            |           |                       |  |  |  |  |
|-------|-----------------------------------|--------------------|------------------|------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                   | Cł                 | nannel Bandw     | vidth: 15 MHz          | / QPSK     |           |                       |  |  |  |  |
| Plane | Channel                           | Frequency<br>(MHz) | Reading<br>(dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18675                             | 1857.5             | -20.61           | 44.70                  | 24.09      | 256.45    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -20.51           | 44.70                  | 24.19      | 262.42    | Н                     |  |  |  |  |
| Z     | 19125                             | 1902.5             | -20.40           | 44.57                  | 24.17      | 261.40    |                       |  |  |  |  |
|       | 18675                             | 1857.5             | -24.17           | 44.27                  | 20.10      | 102.33    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -24.64           | 44.87                  | 20.23      | 105.44    | V                     |  |  |  |  |
|       | 19125                             | 1902.5             | -24.42           | 44.61                  | 20.19      | 104.54    |                       |  |  |  |  |
|       | Channel Bandwidth: 15 MHz / 16QAM |                    |                  |                        |            |           |                       |  |  |  |  |
|       | 18675                             | 1857.5             | -21.62           | 44.70                  | 23.08      | 203.24    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -21.52           | 44.70                  | 23.18      | 207.97    | Н                     |  |  |  |  |
| Z     | 19125                             | 1902.5             | -21.42           | 44.57                  | 23.15      | 206.68    |                       |  |  |  |  |
|       | 18675                             | 1857.5             | -25.18           | 44.27                  | 19.09      | 81.10     |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -25.64           | 44.87                  | 19.23      | 83.75     | V                     |  |  |  |  |
|       | 19125                             | 1902.5             | -25.42           | 44.61                  | 19.19      | 83.04     |                       |  |  |  |  |



|       |                                   |                    | LTE              | E Band 2                  |            |           |                       |  |  |  |  |
|-------|-----------------------------------|--------------------|------------------|---------------------------|------------|-----------|-----------------------|--|--|--|--|
|       |                                   | Cł                 | nannel Bandw     | idth: 20 MHz              | / QPSK     |           |                       |  |  |  |  |
| Plane | Channel                           | Frequency<br>(MHz) | Reading<br>(dBm) | Correction<br>Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization<br>(H/V) |  |  |  |  |
|       | 18700                             | 1860.0             | -20.57           | 44.70                     | 24.13      | 258.82    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -20.48           | 44.70                     | 24.22      | 264.24    | Н                     |  |  |  |  |
| Z     | 19100                             | 1900.0             | -20.36           | 44.57                     | 24.21      | 263.82    |                       |  |  |  |  |
|       | 18700                             | 1860.0             | -24.13           | 44.27                     | 20.14      | 103.28    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -24.61           | 44.87                     | 20.26      | 106.17    | V                     |  |  |  |  |
|       | 19100                             | 1900.0             | -24.38           | 44.61                     | 20.23      | 105.51    |                       |  |  |  |  |
|       | Channel Bandwidth: 20 MHz / 16QAM |                    |                  |                           |            |           |                       |  |  |  |  |
|       | 18700                             | 1860.0             | -21.58           | 44.70                     | 23.12      | 205.12    |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -21.49           | 44.70                     | 23.21      | 209.41    | Н                     |  |  |  |  |
| 7     | 19100                             | 1900.0             | -21.37           | 44.57                     | 23.20      | 209.07    |                       |  |  |  |  |
| Z     | 18700                             | 1860.0             | -25.13           | 44.27                     | 19.14      | 82.04     |                       |  |  |  |  |
|       | 18900                             | 1880.0             | -25.62           | 44.87                     | 19.25      | 84.14     | V                     |  |  |  |  |
|       | 19100                             | 1900.0             | -25.39           | 44.61                     | 19.22      | 83.62     |                       |  |  |  |  |



#### 4.2 Radiated Emission Measurement

#### 4.2.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to -13 dBm.

#### 4.2.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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.
- b. 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 a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power 2.15 dB.

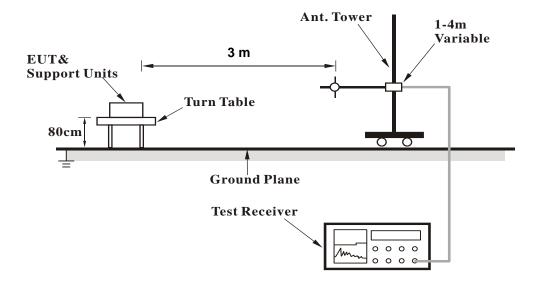
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

No deviation.

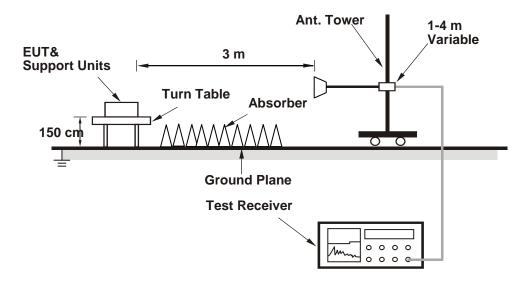


#### 4.2.4 Test Setup

## <Radiated Emission below or equal 1 GHz>



#### <Radiated Emission above 1 GHz>



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



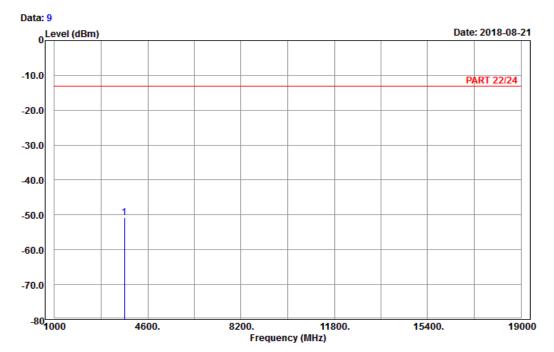
#### 4.2.5 Test Results

#### **WCDMA**:

**Low Channel** 



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : Band II\_Link\_CH9262

Tested by: Karl Lee

Read Limit Over

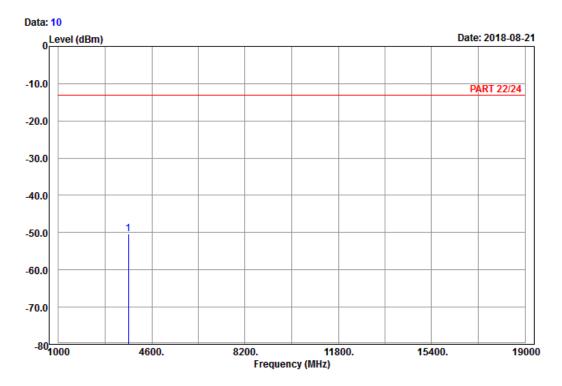
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3704.80 -50.88 -66.76 -13.00 -37.88 15.88 Peak







Site : 966 chamber 1

Condition: PART 22/24 Vertical Remark : Band II\_Link\_CH9262

Tested by: Karl Lee

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

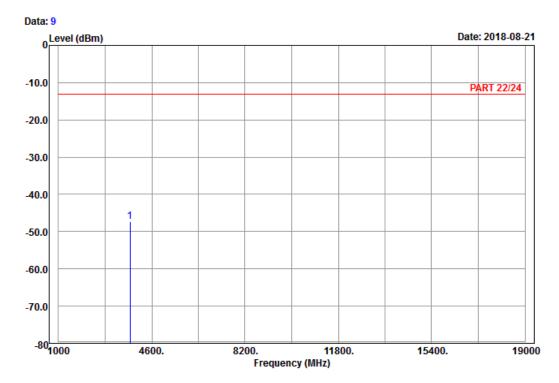
1 pp 3704.80 -50.28 -66.16 -13.00 -37.28 15.88 Peak



#### **Middle Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : Band II\_Link\_CH9400

Tested by: Karl Lee

Read Limit Over

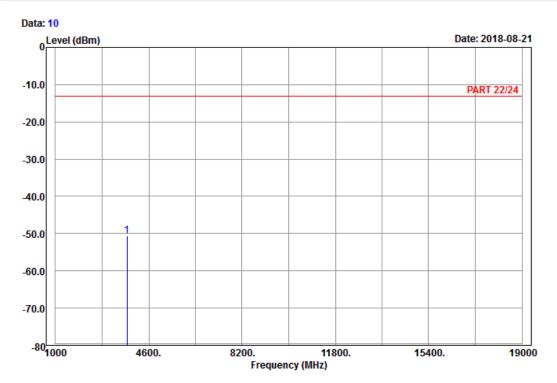
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3760.00 -47.41 -63.55 -13.00 -34.41 16.14 Peak







Site : 966 chamber 1

Condition: PART 22/24 Vertical Remark : Band II\_Link\_CH9400

Tested by: Karl Lee

Read Limit Over

Freq Level Level Limit Factor Remark

MHz dBm dBm dBm dB dB dB

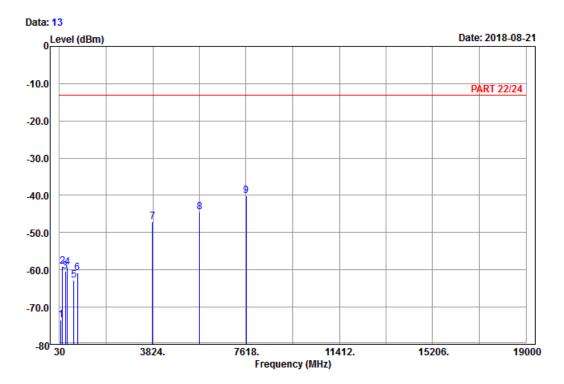
1 pp 3760.00 -50.47 -66.61 -13.00 -37.47 16.14 Peak



## **High Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

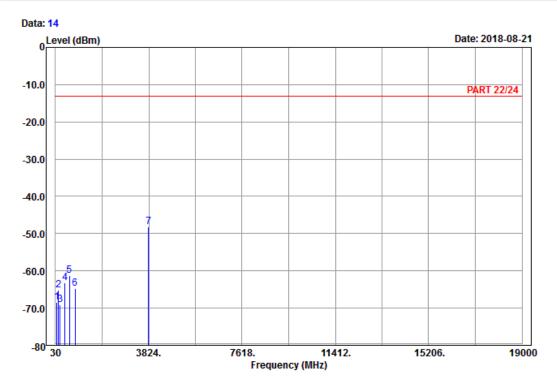
Condition: PART 22/24 Horizontal Remark : Band II\_Link\_CH9538

Tested by: Karl Lee

| CSCCC | Dy. Kai | 1 200  |        |        |        |        |        |
|-------|---------|--------|--------|--------|--------|--------|--------|
|       |         |        | Read   | Limit  | 0ver   |        |        |
|       | Freq    | Level  | Level  | Line   | Limit  | Factor | Remark |
| _     |         |        |        |        |        |        |        |
|       | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
|       |         |        |        |        |        |        |        |
| 1     | 90.48   | -73.42 | -62.75 | -13.00 | -60.42 | -10.67 | Peak   |
| 2     | 160.14  | -59.14 | -51.47 | -13.00 | -46.14 | -7.67  | Peak   |
| 3     | 261.66  | -60.32 | -54.71 | -13.00 | -47.32 | -5.61  | Peak   |
| 4     | 351.10  | -59.31 | -53.98 | -13.00 | -46.31 | -5.33  | Peak   |
| 5     | 608.00  | -62.74 | -63.08 | -13.00 | -49.74 | 0.34   | Peak   |
| 6     | 761.30  | -60.90 | -60.36 | -13.00 | -47.90 | -0.54  | Peak   |
| 7     | 3815.20 | -47.04 | -63.45 | -13.00 | -34.04 | 16.41  | Peak   |
| 8     | 5722.80 | -44.55 | -64.82 | -13.00 | -31.55 | 20.27  | Peak   |
| 9 pp  | 7630.40 | -40.04 | -63.06 | -13.00 | -27.04 | 23.02  | Peak   |







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : Band II\_Link\_CH9538

Tested by: Karl Lee

|      | _       |        |        | Limit  |        |        |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Limit  | Factor | Remark |
| -    | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 84.81   | -68.49 | -57.27 | -13.00 | -55.49 | -11.22 | Peak   |
| 2    | 153.39  | -65.23 | -57.37 | -13.00 | -52.23 | -7.86  | Peak   |
| 3    | 226.02  | -69.05 | -63.22 | -13.00 | -56.05 | -5.83  | Peak   |
| 4    | 425.30  | -63.23 | -59.92 | -13.00 | -50.23 | -3.31  | Peak   |
| 5    | 601.70  | -61.22 | -61.64 | -13.00 | -48.22 | 0.42   | Peak   |
| 6    | 828.50  | -64.84 | -66.53 | -13.00 | -51.84 | 1.69   | Peak   |
| 7 pp | 3815.20 | -48.13 | -64.54 | -13.00 | -35.13 | 16.41  | Peak   |



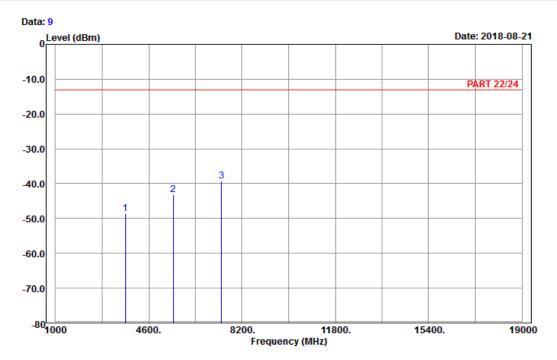
## LTE Band 2

Channel Bandwidth: 1.4 MHz / QPSK

**Low Channel** 



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18607

Tested by: Karl Lee

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

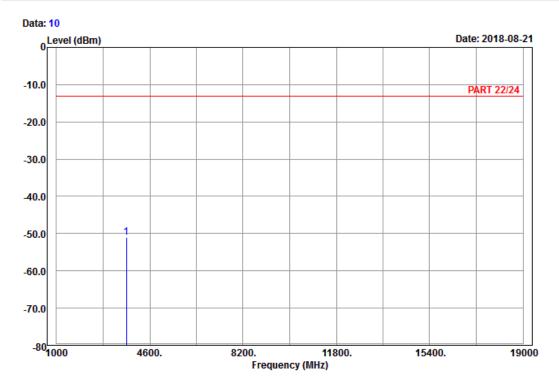
1 3701.40 -48.63 -64.51 -13.00 -35.63 15.88 Peak 2 5552.10 -43.19 -63.53 -13.00 -30.19 20.34 Peak 3 pp 7402.80 -39.33 -61.61 -13.00 -26.33 22.28 Peak



Report Format Version: 6.1.1



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH18607

Tested by: Karl Lee

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

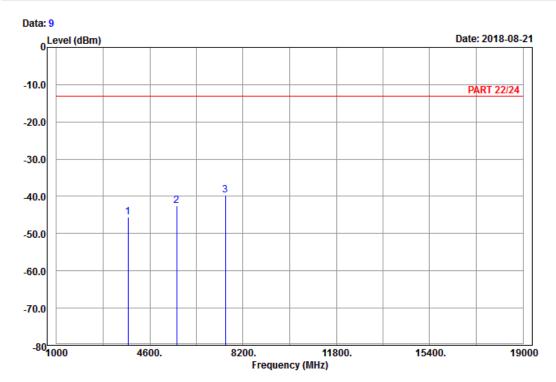
1 pp 3701.40 -50.90 -66.78 -13.00 -37.90 15.88 Peak



#### **Middle Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Karl Lee

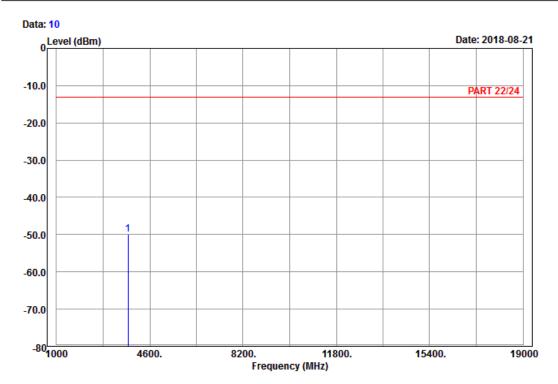
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 3760.00 -45.51 -61.65 -13.00 -32.51 16.14 Peak 2 5640.00 -42.52 -62.99 -13.00 -29.52 20.47 Peak 3 pp 7520.00 -39.78 -62.46 -13.00 -26.78 22.68 Peak







Site : 966 chamber 1 Condition: PART 22/24 Vertical

Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Karl Lee

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB dB

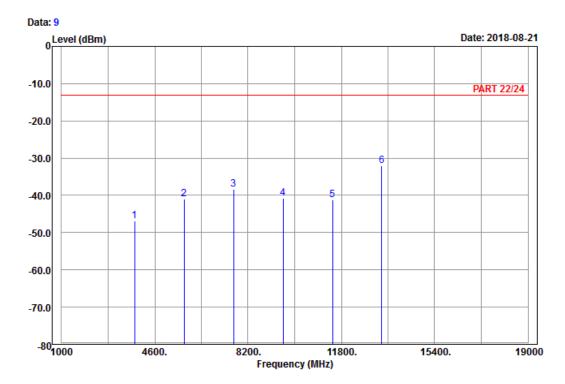
1 pp 3760.00 -49.88 -66.02 -13.00 -36.88 16.14 Peak



## **High Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH19193

Tested by: Karl Lee

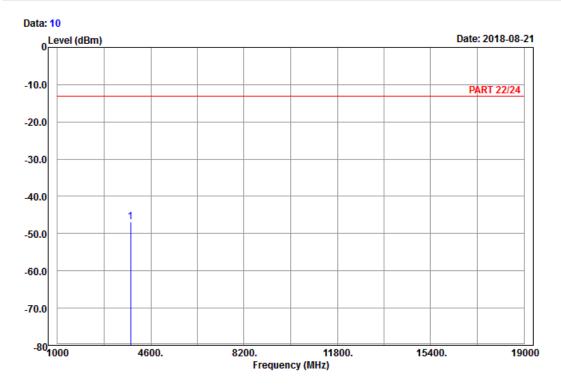
|   |    | Freq     | Level  | Read<br>Level | Limit<br>Line |        | Factor | Remark |
|---|----|----------|--------|---------------|---------------|--------|--------|--------|
|   | -  | MHz      | dBm    | dBm           | dBm           | dB     | dB     |        |
| 1 |    | 3818.60  | -46.86 | -63.36        | -13.00        | -33.86 | 16.50  | Peak   |
| 2 |    | 5727.90  | -40.95 | -61.29        | -13.00        | -27.95 | 20.34  | Peak   |
| 3 |    | 7637.20  | -38.39 | -61.45        | -13.00        | -25.39 | 23.06  | Peak   |
| 4 |    | 9546.50  | -40.87 | -66.91        | -13.00        | -27.87 | 26.04  | Peak   |
| 5 |    | 11455.80 | -41.24 | -69.06        | -13.00        | -28.24 | 27.82  | Peak   |
| 6 | pp | 13365.10 | -32.03 | -63.31        | -13.00        | -19.03 | 31.28  | Peak   |



Report Format Version: 6.1.1



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1 Condition: PART 22/24 Vertical

Remark : LTE\_Band 2\_Link\_CH19193

Tested by: Karl Lee

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

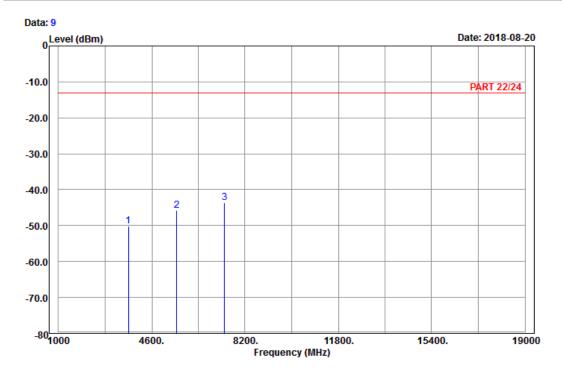
1 pp 3818.60 -46.94 -63.44 -13.00 -33.94 16.50 Peak



# Channel Bandwidth: 5 MHz / QPSK Low Channel



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18625

Tested by: Harry Hsueh

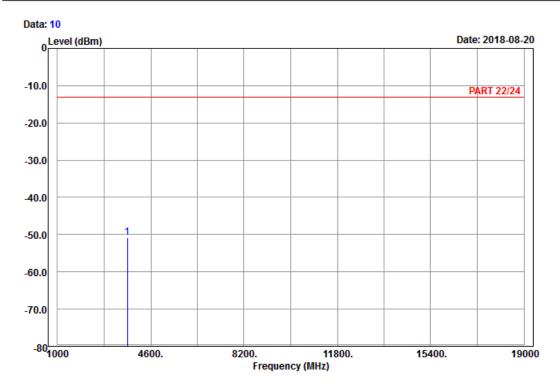
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 3705.00 -50.10 -65.98 -13.00 -37.10 15.88 Peak 2 5557.50 -45.76 -66.10 -13.00 -32.76 20.34 Peak 3 pp 7410.00 -43.66 -65.94 -13.00 -30.66 22.28 Peak







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH18625

Tested by: Harry Hsueh

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

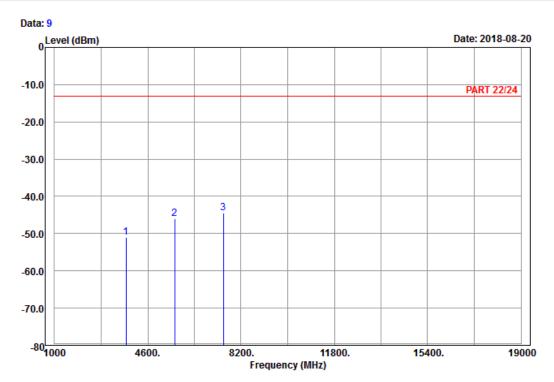
1 pp 3705.00 -50.81 -66.69 -13.00 -37.81 15.88 Peak



#### **Middle Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Harry Hsueh

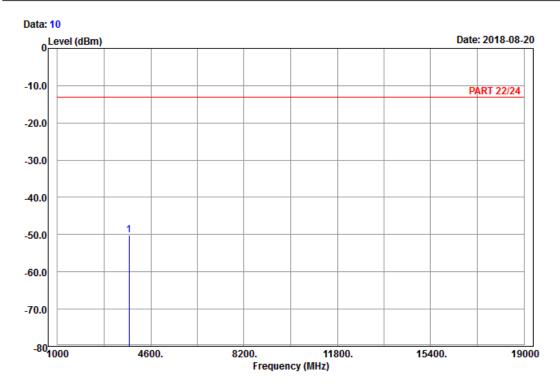
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 3760.00 -51.09 -67.23 -13.00 -38.09 16.14 Peak 2 5640.00 -45.96 -66.43 -13.00 -32.96 20.47 Peak 3 pp 7520.00 -44.38 -67.06 -13.00 -31.38 22.68 Peak







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Harry Hsueh

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

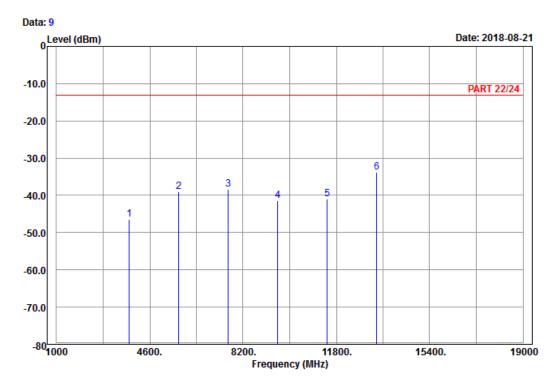
1 pp 3760.00 -50.18 -66.32 -13.00 -37.18 16.14 Peak



## **High Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

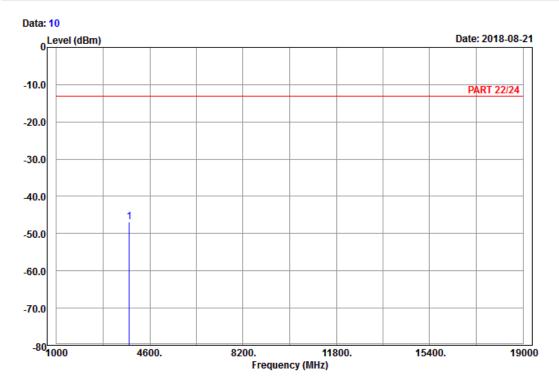
Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH19175

Tested by: Harry Hsueh

| Freq    | Level   |  |   |  | Factor   | Remark                        |
|---------|---|--|---|--|--|-------------------------------|
| MHz     | dBm   | dBm  | dBm   | dB   | dB   |                               |
| 3815.00 | -46.40  | -62.81   | -13.00  | -33.40   | 16.41  | Peak                          |
| 5722.50 | -39.06  | -59.33   | -13.00  | -26.06   | 20.27  | Peak                          |
| 7630.00 | -38.44  | -61.46   | -13.00  | -25.44   | 23.02  | Peak                          |
| 9537.50 | -41.34  | -67.38   | -13.00  | -28.34   | 26.04  | Peak                          |
|         |   |  |   |  |  |                               |
|         | MHz<br>3815.00<br>5722.50<br>7630.00<br>9537.50<br>11445.00 | MHz dBm  3815.00 -46.40 5722.50 -39.06 7630.00 -38.44 9537.50 -41.34 11445.00 -40.94 | Freq Level Level  MHz dBm dBm  3815.00 -46.40 -62.81 5722.50 -39.06 -59.33 7630.00 -38.44 -61.46 9537.50 -41.34 -67.38 11445.00 -40.94 -68.76 | Freq Level Level Line    MHz   dBm   dBm   dBm     3815.00 -46.40 -62.81 -13.00     5722.50 -39.06 -59.33 -13.00     7630.00 -38.44 -61.46 -13.00     9537.50 -41.34 -67.38 -13.00     11445.00 -40.94 -68.76 -13.00 | MHz dBm dBm dBm dBm dB<br>3815.00 -46.40 -62.81 -13.00 -33.40<br>5722.50 -39.06 -59.33 -13.00 -26.06<br>7630.00 -38.44 -61.46 -13.00 -25.44<br>9537.50 -41.34 -67.38 -13.00 -28.34<br>11445.00 -40.94 -68.76 -13.00 -27.94 | Freq Level Level Limit Factor |







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH19175

Tested by: Harry Hsueh

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

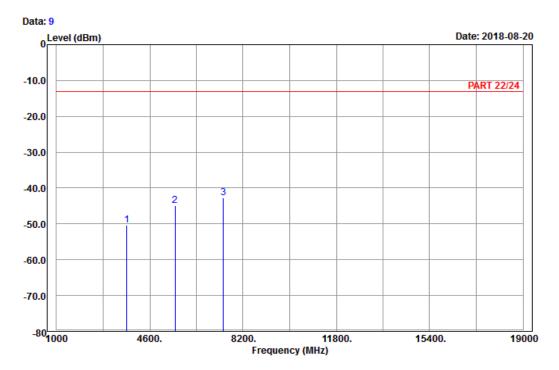
1 pp 3815.00 -46.80 -63.21 -13.00 -33.80 16.41 Peak



# Channel Bandwidth: 20 MHz / QPSK Low Channel



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18700

Tested by: Harry Hsueh

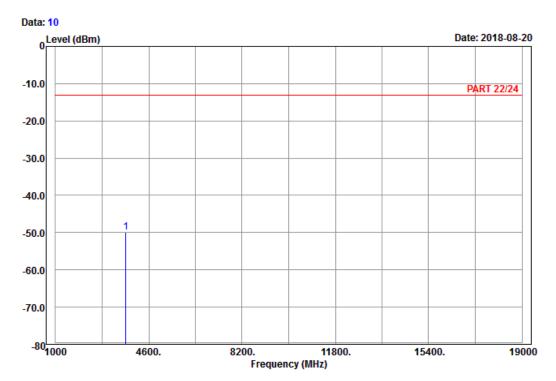
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB dB

1 3720.00 -50.31 -66.28 -13.00 -37.31 15.97 Peak 2 5580.00 -44.96 -65.33 -13.00 -31.96 20.37 Peak 3 pp 7440.00 -42.67 -64.92 -13.00 -29.67 22.25 Peak







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH18700

Tested by: Harry Hsueh

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

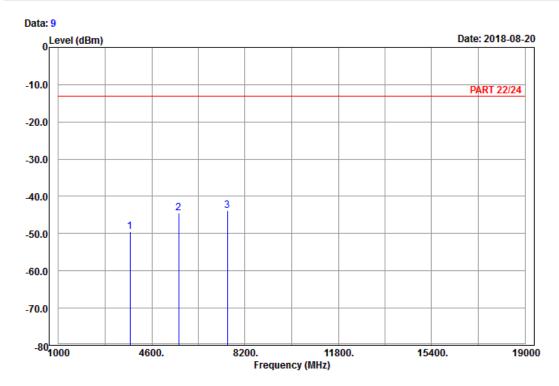
1 pp 3720.00 -49.87 -65.84 -13.00 -36.87 15.97 Peak



#### **Middle Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Harry Hsueh

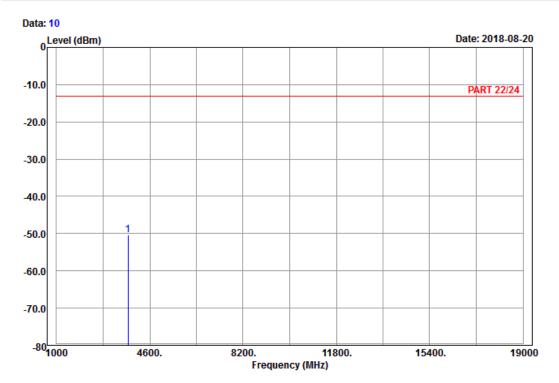
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 3760.00 -49.42 -65.56 -13.00 -36.42 16.14 Peak 2 5640.00 -44.54 -65.01 -13.00 -31.54 20.47 Peak 3 pp 7520.00 -43.77 -66.45 -13.00 -30.77 22.68 Peak







Site : 966 chamber 1 Condition: PART 22/24 Vertical

Remark : LTE\_Band 2\_Link\_CH18900

Tested by: Harry Hsueh

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

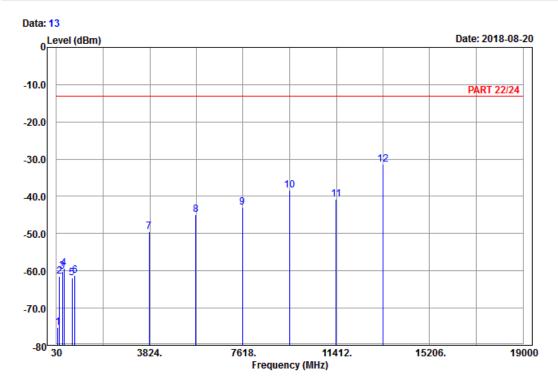
1 pp 3760.00 -50.29 -66.43 -13.00 -37.29 16.14 Peak



## **High Channel**



## Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 chamber 1

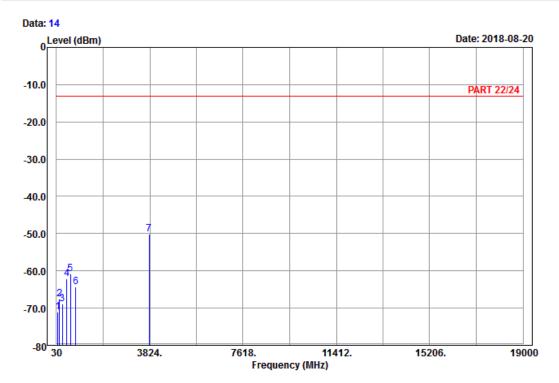
Condition: PART 22/24 Horizontal Remark : LTE\_Band 2\_Link\_CH19100

Tested by: Harry Hsueh

|    |    | ,        | . ,    |        |        |        |        |        |
|----|----|----------|--------|--------|--------|--------|--------|--------|
|    |    |          |        | Read   | Limit  | 0ver   |        |        |
|    |    | Freq     | Level  | Level  | Line   | Limit  | Factor | Remark |
|    | _  |          |        |        |        |        |        |        |
|    |    | MHz      | dBm    | dBm    | dBm    | dB     | dB     |        |
|    |    |          |        |        |        |        |        | _      |
| 1  |    | 85.62    | -75.20 | -63.98 | -13.00 | -62.20 | -11.22 | Peak   |
| 2  |    | 158.79   | -61.57 | -53.87 | -13.00 | -48.57 | -7.70  | Peak   |
| 3  |    | 261.39   | -60.26 | -54.65 | -13.00 | -47.26 | -5.61  | Peak   |
| 4  |    | 343.40   | -59.20 | -53.74 | -13.00 | -46.20 | -5.46  | Peak   |
| 5  |    | 667.50   | -61.95 | -61.73 | -13.00 | -48.95 | -0.22  | Peak   |
| 6  |    | 784.40   | -61.15 | -62.14 | -13.00 | -48.15 | 0.99   | Peak   |
| 7  |    | 3800.00  | -49.41 | -65.82 | -13.00 | -36.41 | 16.41  | Peak   |
| 8  |    | 5700.00  | -44.86 | -65.07 | -13.00 | -31.86 | 20.21  | Peak   |
| 9  |    | 7600.00  | -42.88 | -65.87 | -13.00 | -29.88 | 22.99  | Peak   |
| 10 |    | 9500.00  | -38.37 | -64.39 | -13.00 | -25.37 | 26.02  | Peak   |
| 11 |    | 11400.00 | -40.66 | -68.48 | -13.00 | -27.66 | 27.82  | Peak   |
| 12 | pp | 13300.00 | -31.30 | -62.48 | -13.00 | -18.30 | 31.18  | Peak   |







Site : 966 chamber 1 Condition: PART 22/24 Vertical Remark : LTE\_Band 2\_Link\_CH19100

Tested by: Harry Hsueh

|      | Freq    | Level  |        | Limit<br>Line |        | Factor | Remark |
|------|---------|--------|--------|---------------|--------|--------|--------|
| -    | MHz     | ——dBm  | ——dBm  | ——dBm         | dB     | dB     |        |
|      | МП      | ubili  | ubili  | ubili         | ub     | ub     |        |
| 1    | 84.54   | -71.01 | -59.68 | -13.00        | -58.01 | -11.33 | Peak   |
| 2    | 159.87  | -67.58 | -59.91 | -13.00        | -54.58 | -7.67  | Peak   |
| 3    | 262.47  | -68.97 | -63.35 | -13.00        | -55.97 | -5.62  | Peak   |
| 4    | 454.70  | -62.12 | -58.14 | -13.00        | -49.12 | -3.98  | Peak   |
| 5    | 593.30  | -60.89 | -61.04 | -13.00        | -47.89 | 0.15   | Peak   |
| 6    | 806.10  | -64.38 | -66.32 | -13.00        | -51.38 | 1.94   | Peak   |
| 7 pp | 3800.00 | -50.15 | -66.56 | -13.00        | -37.15 | 16.41  | Peak   |



| 5 Pictures of Test Arrangements                       |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| Please refer to the attached file (Test Setup Photo). |  |  |  |  |  |  |  |
| Please refer to the attached file (Test Setup Photo). |  |  |  |  |  |  |  |
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#### 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

Hsin Chu EMC/RF/Telecom Lab

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

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Tel: 886-3-3183232 Fax: 886-3-3270892

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Web Site: <a href="mailto:www.bureauveritas-adt.com">www.bureauveritas-adt.com</a>

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

--- END ---