

## Partial FCC Test Report (Part 27 – CA mode (LTE Band 7C, 38C, 41C))

**Report No.:** RFCDVB-WTW-P22100073-8

**FCC ID:** QYLLN920V

**Test Model:** LN920A12-WW

**Received Date:** Oct. 11, 2022

**Test Date:** Dec. 30, 2022

**Issued Date:** Jan. 11, 2023

**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  
Lin Kou Laboratories

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

**Test Location (1):** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

**FCC Registration /** 788550 / TW0003  
**Designation Number:**

**Test Location (2):** No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

**FCC Registration /** 281270 / TW0032  
**Designation Number:**



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### Release Control Record

| Issue No.              | Description      | Date Issued   |
|------------------------|------------------|---------------|
| RFCDVB-WTW-P22100073-8 | Original release | Jan. 11, 2023 |

## 1 Certificate of Conformity

**Product:** Radio Module

**Brand:** Getac

**Test Model:** LN920A12-WW

**Sample Status:** Engineering sample

**Applicant:** Getac Technology Corporation.

**Test Date:** Dec. 30, 2022

**Standards:** FCC Part 27, Subpart C, M

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.

**Prepared by :** Celine Chou , **Date:** Jan. 11, 2023  
Celine Chou / Senior Specialist

**Approved by :** Jeremy Lin , **Date:** Jan. 11, 2023  
Jeremy Lin / Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 27 & Part 2 |                                                  |        |                                                                                      |
|----------------------------------------|--------------------------------------------------|--------|--------------------------------------------------------------------------------------|
| FCC Clause                             | Test Item                                        | Result | Remarks                                                                              |
| 2.1046<br>27.50<br>(h)(2)              | Equivalent Isotropically radiated power          | Pass   | Meet the requirement of limit.                                                       |
| 2.1047                                 | Modulation characteristics                       | N/A    | Refer to Note                                                                        |
| 2.1055<br>27.54                        | Frequency Stability                              | N/A    | Refer to Note                                                                        |
| 2.1049                                 | Emission Bandwidth                               | N/A    | Refer to Note                                                                        |
| 2.1051<br>27.53<br>(m)(4)(6)           | Channel Edge / Out of Band Emission Measurements | N/A    | Refer to Note                                                                        |
| --                                     | Peak To Average Ratio                            | N/A    | Refer to Note                                                                        |
| 2.1051<br>27.53<br>(m)(4)(6)           | Conducted Spurious Emissions                     | N/A    | Refer to Note                                                                        |
| 2.1053<br>27.53<br>(m)(4)(6)           | Radiated Spurious Emissions                      | Pass   | Meet the requirement of limit.<br>Minimum passing margin is<br>-10.60dB at 30.00MHz. |

### Note:

1. This report is a Class II change partial report. Therefore, only test item of Radiated Spurious Emissions tests and Effective Radiated Power were performed for this report. Other testing data please refer to SGS Taiwan Ltd. report no.: TERF2206000797ER for module (Brand: Telit, Model: LN920A12-WW).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 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) (±) |
|--------------------------------|------------------|--------------------------------|
| Radiated Emissions up to 1 GHz | 9kHz ~ 30MHz     | 3.00 dB                        |
|                                | 30MHz ~ 200MHz   | 2.91 dB                        |
|                                | 200MHz ~ 1000MHz | 2.93 dB                        |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz     | 1.76 dB                        |
|                                | 18GHz ~ 40GHz    | 1.77 dB                        |

### 2.2 Modification Record

There were no modifications required for compliance.

### 2.3 Test Site and Instruments

| Description & Manufacturer        | Model No.                    | Serial No.    | Cal. Date     | Cal. Due      |
|-----------------------------------|------------------------------|---------------|---------------|---------------|
| Test Receiver<br>R&S              | ESR3+                        | 102782        | Dec. 12, 2022 | Dec. 11, 2023 |
| Spectrum Analyzer<br>R&S          | FSW43                        | 101866        | Jan. 14, 2022 | Jan. 13, 2023 |
| Loop Antenna<br>TESEQ             | HLA 6121                     | 45745         | Jul. 27, 2022 | Jul. 26, 2023 |
| Pre-amplifier<br>EMCI             | EMC001340                    | 980201        | Sep. 23, 2022 | Sep. 22, 2023 |
| RF Coaxial Cable<br>EMCI          | 5D-NM-BM                     | 140903+140902 | Jan. 15, 2022 | Jan. 14, 2023 |
| Preamplifier<br>EMCI              | EMC330N                      | 980782        | Jan. 17, 2022 | Jan. 16, 2023 |
| BILOG Antenna<br>SCHWARZBECK      | VULB9168                     | 9168-1213     | Oct. 20, 2022 | Oct. 19, 2023 |
| RF Coaxial Cable<br>EMCI          | EMCCFD400-NM-N<br>M-500      | 201233        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF Coaxial Cable<br>EMCI          | EMCCFD400-NM-N<br>M-3000     | 201235        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF Coaxial Cable<br>EMCI          | EMCCFD400-NM-N<br>M-9000     | 201236        | Jan. 17, 2022 | Jan. 16, 2023 |
| HORN Antenna<br>RF SPIN           | DRH18-E                      | 210103A18E    | Nov. 13, 2022 | Nov. 12, 2023 |
| Preamplifier<br>EMCI              | EMC118A45SE                  | 980808        | Dec. 29, 2022 | Dec. 28, 2023 |
| RF Coaxial Cable<br>EMCI          | EMC104-SM-SM-1<br>000        | 210102        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF Coaxial Cable<br>EMCI          | EMC104-SM-SM-3<br>000        | 201231        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF Coaxial Cable<br>EMCI          | EMC104-SM-SM-9<br>000        | 201243        | Jan. 17, 2022 | Jan. 16, 2023 |
| Preamplifier<br>EMCI              | EMC184045SE                  | 980788        | Jan. 17, 2022 | Jan. 16, 2023 |
| HORN Antenna<br>SCHWARZBECK       | BBHA 9170                    | 9170-1049     | Nov. 13, 2022 | Nov. 12, 2023 |
| RF signal cable<br>EMCI           | EMC101G-KM-KM-<br>5000       | 201260        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF signal cable<br>EMCI           | EMC101G-KM-KM-<br>3000       | 201257        | Jan. 17, 2022 | Jan. 16, 2023 |
| RF signal cable<br>EMCI           | EMC101G-KM-KM-<br>2000       | 201254        | Jan. 17, 2022 | Jan. 16, 2023 |
| Software<br>BV ADT                | ADT_Radiated_<br>V7.6.15.9.5 | NA            | NA            | NA            |
| Antenna Tower & Turn<br>Max-Full  | MFT-151SS-0.5T               | NA            | NA            | NA            |
| Turn Table<br>Max-Full            | MF-7802BS                    | NA            | NA            | NA            |
| Turn Table Controller<br>Max-Full | MF-7802BS                    | MF780208674   | NA            | NA            |
| Turn Table Controller<br>Max-Full | MF-7802BS                    | MF780208674   | NA            | NA            |

| Description & Manufacturer                 | Model No. | Serial No. | Cal. Date     | Cal. Due      |
|--------------------------------------------|-----------|------------|---------------|---------------|
| Radio Communication<br>Analyzer<br>Anritsu | MT8820C   | 6201300640 | Aug. 26, 2021 | Aug. 22, 2023 |

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 WM - 966 chamber 8.

### 3 General Information

#### 3.1 General Description of EUT

|                     |                              |                         |                         |                         |
|---------------------|------------------------------|-------------------------|-------------------------|-------------------------|
| Product             | Radio Module                 |                         |                         |                         |
| Brand               | Getac                        |                         |                         |                         |
| Test Model          | LN920A12-WW                  |                         |                         |                         |
| Status of EUT       | Engineering sample           |                         |                         |                         |
| Power Supply Rating | 3.3Vdc                       |                         |                         |                         |
| Modulation Type     | QPSK, 16QAM, 64QAM           |                         |                         |                         |
| Operating Frequency | LTE Band 7C                  | 2510.0MHz ~ 2560.0MHz   |                         |                         |
|                     | LTE Band 38C                 | 2580.0MHz ~ 2610.0MHz   |                         |                         |
|                     | LTE Band 41C                 | 2506.0MHz ~ 2680.0MHz   |                         |                         |
| Max. EIRP Power     |                              | QPSK                    | 16QAM                   | 64QAM                   |
|                     | LTE Band 7C (20MHz + 20MHz)  | 174.181mW<br>(22.41dBm) | 130.918mW<br>(21.17dBm) | 117.220mW<br>(20.69dBm) |
|                     | LTE Band 38C (20MHz + 20MHz) | 199.526mW<br>(23.00dBm) | 147.571mW<br>(21.69dBm) | 132.739mW<br>(21.23dBm) |
|                     | LTE Band 41C (20MHz + 20MHz) | 237.137mW<br>(23.75dBm) | 183.231mW<br>(22.63dBm) | 159.588mW<br>(22.03dBm) |
| Antenna Type        | Refer to Note as below       |                         |                         |                         |
| Antenna Connector   | Refer to Note as below       |                         |                         |                         |
| Accessory Device    | NA                           |                         |                         |                         |
| Cable Supplied      | NA                           |                         |                         |                         |

Note:

1. The EUT is authorized for use in specific End-product.

| Product  | Brand | Model                                                                                     | Difference            |
|----------|-------|-------------------------------------------------------------------------------------------|-----------------------|
| Notebook | Getac | V110                                                                                      | For marketing purpose |
|          |       | V110G7                                                                                    |                       |
|          |       | V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "I",<br>"V", "-", " " or blank) |                       |

\* The model of the V110G7 was chosen for final test.

2. The End-product contains following accessory devices.

| Part          | Brand                 | Model         | Specification                                                                                                       |
|---------------|-----------------------|---------------|---------------------------------------------------------------------------------------------------------------------|
| Adapter 1     | FSP                   | FSP065-RBBN3  | I/P: 100-240Vac, 50-60Hz, 1.5A<br>O/P: 19.0Vdc, 3.42A<br>1.5m DC power cable with one core<br>attached on adapter   |
| Adapter 2     | Getac                 | MTA190474W4   | I/P: 100-240Vac, 50-60Hz, 1.6A<br>O/P: 19.0Vdc, 4.74A<br>1.55m DC power cable with two cores<br>attached on adapter |
| Battery       | Getac                 | BP3S1P2100-S  | Rating: 11.1Vdc, 2040mAh, 23Wh<br>Typical name: 2100mAh, 24Wh                                                       |
| Digitizer Pen | EMpen Technology Corp | DIGITIZER PEN | -                                                                                                                   |



3. The End-product has three SKUs for sale, after pre-test. SKU 2 was chosen for final test and presented in the test report.

| Part             | Brand     | Model       | Specification       | Configuration |       |       |
|------------------|-----------|-------------|---------------------|---------------|-------|-------|
|                  |           |             |                     | SKU 1         | SKU 2 | SKU 3 |
| CPU              | Intel     | Alder Lake  | i5-1235U (Non Vpro) | V             |       | V     |
|                  |           |             | i7-1265U (Vpro)     |               | V     |       |
| DDR              | Kingston  | ---         | 16GB (8GB+8GB)      | V             |       |       |
|                  |           | ---         | 32GB (16GB+16GB)    |               | V     |       |
|                  |           | ---         | 64GB (32GB+32GB)    |               |       | V     |
| SSD              | SSSTC     | ---         | 256GB               | V             |       |       |
|                  |           | ---         | 512GB               |               | V     |       |
|                  |           | ---         | 1TB                 |               |       | V     |
| LCD Panel        | AUO       | G116HAN01   | 11.6"               | V             | V     | V     |
| Touchscreen      | Getac     | ---         | ---                 | V             | V     | V     |
| Finger Print     | Egistec   | ---         | ---                 | V             | V     | V     |
| WLAN Module      | Intel     | AX211NGW    | ---                 | V             | V     | V     |
| WWAN Module      | Telit     | LN920A12-WW | ---                 | V             | V     | V     |
| GPS              | GlobalSat | MC1010G     | ---                 | V             | V     | V     |
| RFID Module      | NXP       | PN-7462     | ---                 |               | V     | V     |
| Digitizer Module | Getac     | EMR116-UA00 | ---                 |               | V     | V     |
| Bottom Camera    | FOXLINK   | FN80AF-443H | ---                 | V             | V     | V     |
|                  | Chicony   | CKAM816     | ---                 | V             | V     | V     |
| Camera           | FOXLINK   | FN20FF-679H | ---                 | V             | V     | V     |
| IR Camera        | FOXLINK   | FN23FF-678H | ---                 |               | V     | V     |
| Option Bay       | Honeywell | N6703       | Barcode             | V             |       | V     |
|                  | Getac     | ---         | SD Card reader      |               | V     |       |
|                  | Getac     | ---         | Smart Card          |               | V     |       |

4. The following antennas were provided to the End-product.

| Ant.           | Type | Connector | Gain (dBi) |          |          |         |         |         |         |         |         |
|----------------|------|-----------|------------|----------|----------|---------|---------|---------|---------|---------|---------|
|                |      |           | WCDMA B2   | WCDMA B4 | WCDMA B5 | LTE B2  | LTE B4  | LTE B5  | LTE B7  | LTE B12 | LTE B13 |
| Main (TX / RX) | PIFA | I-PEX     | 2.48       | 2.28     | -0.69    | 2.48    | 2.28    | -0.69   | 1.92    | 3.16    | 0.87    |
|                |      |           | LTE B14    | LTE B25  | LTE B26  | LTE B38 | LTE B41 | LTE B48 | LTE B66 | LTE B71 |         |
|                |      |           | 0.78       | 2.48     | -0.69    | 2.15    | 2.82    | -1.30   | 2.28    | 2.65    |         |
| Ant.           | Type | Connector | Gain (dBi) |          |          |         |         |         |         |         |         |
|                |      |           | WCDMA B2   | WCDMA B4 | WCDMA B5 | LTE B2  | LTE B4  | LTE B5  | LTE B7  | LTE B12 | LTE B13 |
| Aux (RX only)  | PIFA | I-PEX     | 4.17       | 2.69     | -1.49    | 4.17    | 2.69    | -1.49   | -0.11   | -3.06   | 0.60    |
|                |      |           | LTE B14    | LTE B25  | LTE B26  | LTE B38 | LTE B41 | LTE B48 | LTE B66 | LTE B71 |         |
|                |      |           | 0.82       | 4.17     | -1.49    | 0.48    | 1.31    | -0.99   | 2.89    | -4.84   |         |

\* Detail antenna specification please refer to antenna datasheet an antenna gain measurement report.

5. For CA mode configuration, please consult the manufacturer to declare the test mode.

6. The EUT support the following CA Configuration.

| Band Configuration |
|--------------------|
| 5B                 |
| 7C                 |
| 38C                |
| 41C                |

7. E-UTRA CA configuration / Bandwidth combination set.

| E-UTRA CA configuration / Bandwidth combination set |                                                                                                        |                                    |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------|
| E-UTRA CA Configuration                             | Component carriers in order of increasing carrier frequency<br>Channel bandwidth for PCC and SCC [MHz] | Maximum aggregated bandwidth [MHz] |
| CA_5B                                               | 5+10 / 10+5                                                                                            | 15                                 |
|                                                     | 10+10                                                                                                  | 20                                 |
| CA_7C                                               | 10+20 / 20+10 / 15+15                                                                                  | 30                                 |
|                                                     | 15+20 / 20+15                                                                                          | 35                                 |
|                                                     | 20 + 20                                                                                                | 40                                 |
| CA_38C                                              | 15+15                                                                                                  | 30                                 |
|                                                     | 20+20                                                                                                  | 40                                 |
| CA_41C                                              | 5+20 / 20+5                                                                                            | 25                                 |
|                                                     | 10+20 / 20+10 / 15+15                                                                                  | 30                                 |
|                                                     | 15+20 / 20+15                                                                                          | 35                                 |
|                                                     | 20+20                                                                                                  | 40                                 |

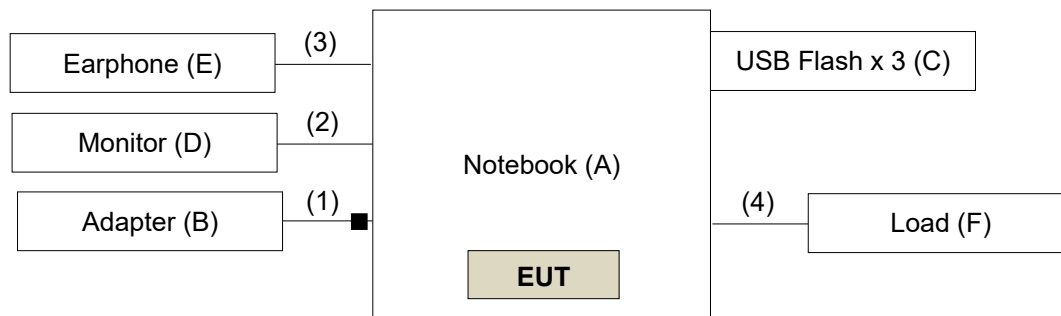
\*5B is continuous CA and maximum combination is 10M+10M.

\*7C is continuous CA and maximum combination is 20M+20M.

\*38C is continuous CA and maximum combination is 20M+20M.

\*41C is continuous CA and maximum combination is 20M+20M.

### 3.2 Configuration of System under Test



Remote site



#### 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.

| ID | Product                      | Brand   | Model No.    | Serial No.   | FCC ID | Remarks                  |
|----|------------------------------|---------|--------------|--------------|--------|--------------------------|
| A. | Notebook                     | Getac   | V110G7       | NA           | NA     | Provided by manufacturer |
| B. | Adapter                      | FSP     | FSP065-RBBN3 | NA           | NA     | Provided by manufacturer |
| C. | USB Flash x 3                | SanDisk | SDDDC3-032G  | NA           | NA     | -                        |
| D. | Monitor                      | ASUS    | VA24EHE      | LCLMTF243824 | NA     | -                        |
| E. | Earphone                     | Apple   | MB77PFEB     | NA           | NA     | -                        |
| F. | Load                         | NA      | NA           | NA           | NA     | -                        |
| G. | Radio Communication Analyzer | Anritsu | MT8820C      | 6201300640   | NA     | -                        |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item G acted as a communication partner to transfer data.

| ID | Descriptions   | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks                                         |
|----|----------------|------|------------|--------------------|--------------|-------------------------------------------------|
| 1. | DC Power Cable | 1    | 1.5        | N                  | 1            | Provided by manufacturer<br>Attached on adapter |
| 2. | HDMI Cable     | 1    | 1.0        | Y                  | 0            | -                                               |
| 3. | Earphone Cable | 1    | 1.5        | N                  | 0            | -                                               |
| 4. | RJ45 Cable     | 1    | 1.5        | N                  | 0            | -                                               |

Note: The core(s) is(are) originally attached to the cable(s).

### 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 on Z-plane. Following channel(s) was (were) selected for the final test as listed below.

#### LTE Band 7C

| EUT Configure Mode | Test item                       | Available channel                | Tested channel                                                                                                                     | Channel Bandwidth | Modulation                 | Mode                                                                                       |
|--------------------|---------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|--------------------------------------------------------------------------------------------|
| -                  | EIRP                            | 20850 to 21152<br>21048 to 21350 | 20850 (2510.0MHz) +<br>21048 (2529.8MHz),<br>21001 (2525.1MHz) +<br>21199 (2544.9MHz),<br>21152 (2540.2MHz) +<br>21350 (2560.0MHz) | 20MHz +<br>20MHz  | QPSK /<br>16QAM /<br>64QAM | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |
| -                  | Radiated Emission<br>Below 1GHz | 20850 to 21152<br>21048 to 21350 | 20850 (2510.0MHz) +<br>21048 (2529.8MHz)                                                                                           | 20MHz +<br>20MHz  | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset                                                |
| -                  | Radiated Emission<br>Above 1GHz | 20850 to 21152<br>21048 to 21350 | 20850 (2510.0MHz) +<br>21048 (2529.8MHz),<br>21001 (2525.1MHz) +<br>21199 (2544.9MHz),<br>21152 (2540.2MHz) +<br>21350 (2560.0MHz) | 20MHz +<br>20MHz  | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.
2. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

#### LTE Band 38C

| EUT Configure Mode | Test item                       | Available channel                | Tested channel                                                                                                                     | Channel Bandwidth | Modulation                 | Mode                                                                                       |
|--------------------|---------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|--------------------------------------------------------------------------------------------|
| -                  | EIRP                            | 37850 to 37952<br>38048 to 38150 | 37850 (2580.0MHz) +<br>38048 (2599.8MHz),<br>37901 (2585.1MHz) +<br>38099 (2604.9MHz),<br>37952 (2590.2MHz) +<br>38150 (2610.0MHz) | 20MHz +<br>20MHz  | QPSK /<br>16QAM /<br>64QAM | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |
| -                  | Radiated Emission<br>Below 1GHz | 37850 to 37952<br>38048 to 38150 | 37850 (2580.0MHz) +<br>38048 (2599.8MHz)                                                                                           | 20MHz +<br>20MHz  | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset                                                |
| -                  | Radiated Emission<br>Above 1GHz | 37850 to 37952<br>38048 to 38150 | 37850 (2580.0MHz) +<br>38048 (2599.8MHz),<br>37901 (2585.1MHz) +<br>38099 (2604.9MHz),<br>37952 (2590.2MHz) +<br>38150 (2610.0MHz) | 20MHz +<br>20MHz  | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |

Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.
2. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

# LTE Band 41C

| EUT<br>Configure<br>Mode | Test item                       | Available channel                | Tested channel                                                                                                                     | Channel<br>Bandwidth | Modulation                 | Mode                                                                                       |
|--------------------------|---------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------|--------------------------------------------------------------------------------------------|
| -                        | EIRP                            | 39750 to 41292<br>39948 to 41490 | 39750 (2506.0MHz) +<br>39948 (2525.8MHz),<br>40529 (2583.9MHz) +<br>40712 (2602.2MHz),<br>41292 (2660.2MHz) +<br>41490 (2680.0MHz) | 20MHz +<br>20MHz     | QPSK /<br>16QAM /<br>64QAM | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |
| -                        | Radiated Emission<br>Below 1GHz | 39750 to 41292<br>39948 to 41490 | 39750 (2506.0MHz) +<br>39948 (2525.8MHz)                                                                                           | 20MHz +<br>20MHz     | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset                                                |
| -                        | Radiated Emission<br>Above 1GHz | 39750 to 41292<br>39948 to 41490 | 39750 (2506.0MHz) +<br>39948 (2525.8MHz),<br>40529 (2583.9MHz) +<br>40712 (2602.2MHz),<br>41292 (2660.2MHz) +<br>41490 (2680.0MHz) | 20MHz +<br>20MHz     | QPSK                       | 1 RB / 0 RB Offset +<br>1 RB / 99 RB Offset<br>1 RB / 99 RB Offset +<br>1 RB / 0 RB Offset |

## Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.
2. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

## Test Condition:

| Test Item         | Environmental Conditions | Input Power           | Tested By   |
|-------------------|--------------------------|-----------------------|-------------|
| EIRP              | 25deg. C, 60%RH          | 120Vac, 60Hz (System) | Willy Cheng |
| Radiated Emission | 19deg. C, 67%RH          | 120Vac, 60Hz (System) | Edison 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 and References**

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

#### **Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**ANSI/TIA/EIA-603-E 2016**

ANSI 63.26-2015

#### **References Test Guidance:**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

All test items have been performed as a reference to the above KDB test guidance.

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

#### 4.1.2 Test Procedures

##### Conducted Power Measurement:

The EUT was set up for the maximum power with 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.

##### Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively  
 (expressed in the same units as  $P_{\text{Meas}}$ , e.g., dBm or dBW)

$P_{\text{Meas}}$  measured transmitter output power or PSD, in dBm or dBW

$G_T$  gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

#### 4.1.3 Test Setup

Conducted Power Measurement:



#### 4.1.4 Test Results

##### Conducted Output Power (dBm)

##### LTE Band 7C

| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | QPSK           | 1          | 0            | 20850       | 2510                 | 7    | 20          | QPSK           | 1          | 99           | 21048       | 2529.8               | 13.83                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.46                                  |
|                                  |                  | 7    | 20          | QPSK           | 1          | 0            | 21001       | 2525.1               | 7    | 20          | QPSK           | 1          | 99           | 21199       | 2544.9               | 13.84                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.29                                  |
|                                  |                  | 7    | 20          | QPSK           | 1          | 0            | 21152       | 2540.2               | 7    | 20          | QPSK           | 1          | 99           | 21350       | 2560                 | 13.98                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.49                                  |
| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | 16QAM          | 1          | 0            | 20850       | 2510                 | 7    | 20          | 16QAM          | 1          | 99           | 21048       | 2529.8               | 12.46                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 19.25                                  |
|                                  |                  | 7    | 20          | 16QAM          | 1          | 0            | 21001       | 2525.1               | 7    | 20          | 16QAM          | 1          | 99           | 21199       | 2544.9               | 12.48                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 18.99                                  |
|                                  |                  | 7    | 20          | 16QAM          | 1          | 0            | 21152       | 2540.2               | 7    | 20          | 16QAM          | 1          | 99           | 21350       | 2560                 | 12.68                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 19.20                                  |
| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | 64QAM          | 1          | 0            | 20850       | 2510                 | 7    | 20          | 64QAM          | 1          | 99           | 21048       | 2529.8               | 11.86                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 18.72                                  |
|                                  |                  | 7    | 20          | 64QAM          | 1          | 0            | 21001       | 2525.1               | 7    | 20          | 64QAM          | 1          | 99           | 21199       | 2544.9               | 11.95                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 18.37                                  |
|                                  |                  | 7    | 20          | 64QAM          | 1          | 0            | 21152       | 2540.2               | 7    | 20          | 64QAM          | 1          | 99           | 21350       | 2560                 | 12.03                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 18.77                                  |



## LTE Band 38C

| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | QPSK            | 1          | 0            | 37850       | 2580                 | 38   | 20          | QPSK            | 1          | 99           | 38048       | 2599.8               | 14.22                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.81                                  |
|                                  |                  | 38   | 20          | QPSK            | 1          | 0            | 37901       | 2585.1               | 38   | 20          | QPSK            | 1          | 99           | 38099       | 2604.9               | 14.26                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.84                                  |
|                                  |                  | 38   | 20          | QPSK            | 1          | 0            | 37952       | 2590.2               | 38   | 20          | QPSK            | 1          | 99           | 38150       | 2610                 | 14.21                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.85                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | 16QAM           | 1          | 0            | 37850       | 2580                 | 38   | 20          | 16QAM           | 1          | 99           | 38048       | 2599.8               | 13.14                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.54                                  |
|                                  |                  | 38   | 20          | 16QAM           | 1          | 0            | 37901       | 2585.1               | 38   | 20          | 16QAM           | 1          | 99           | 38099       | 2604.9               | 12.89                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.42                                  |
|                                  |                  | 38   | 20          | 16QAM           | 1          | 0            | 37952       | 2590.2               | 38   | 20          | 16QAM           | 1          | 99           | 38150       | 2610                 | 12.75                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.53                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | 64QAM           | 1          | 0            | 37850       | 2580                 | 38   | 20          | 64QAM           | 1          | 99           | 38048       | 2599.8               | 12.45                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 18.90                                  |
|                                  |                  | 38   | 20          | 64QAM           | 1          | 0            | 37901       | 2585.1               | 38   | 20          | 64QAM           | 1          | 99           | 38099       | 2604.9               | 12.28                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 18.66                                  |
|                                  |                  | 38   | 20          | 64QAM           | 1          | 0            | 37952       | 2590.2               | 38   | 20          | 64QAM           | 1          | 99           | 38150       | 2610                 | 12.06                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.08                                  |

# LTE Band 41C

| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | QPSK            | 1          | 0            | 39750       | 2506                 | 41   | 20          | QPSK            | 1          | 99           | 39948       | 2525.8               | 17.47                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.93                                  |
|                                  |                  | 41   | 20          | QPSK            | 1          | 0            | 40529       | 2583.9               | 41   | 20          | QPSK            | 1          | 99           | 40712       | 2602.2               | 17.41                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.90                                  |
|                                  |                  | 41   | 20          | QPSK            | 1          | 0            | 41292       | 2660.2               | 41   | 20          | QPSK            | 1          | 99           | 41490       | 2680                 | 17.33                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.81                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | 16QAM           | 1          | 0            | 39750       | 2506                 | 41   | 20          | 16QAM           | 1          | 99           | 39948       | 2525.8               | 16.17                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.81                                  |
|                                  |                  | 41   | 20          | 16QAM           | 1          | 0            | 40529       | 2583.9               | 41   | 20          | 16QAM           | 1          | 99           | 40712       | 2602.2               | 16.09                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.46                                  |
|                                  |                  | 41   | 20          | 16QAM           | 1          | 0            | 41292       | 2660.2               | 41   | 20          | 16QAM           | 1          | 99           | 41490       | 2680                 | 15.77                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.54                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | 64QAM           | 1          | 0            | 39750       | 2506                 | 41   | 20          | 64QAM           | 1          | 99           | 39948       | 2525.8               | 15.42                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 19.21                                  |
|                                  |                  | 41   | 20          | 64QAM           | 1          | 0            | 40529       | 2583.9               | 41   | 20          | 64QAM           | 1          | 99           | 40712       | 2602.2               | 15.34                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 18.57                                  |
|                                  |                  | 41   | 20          | 64QAM           | 1          | 0            | 41292       | 2660.2               | 41   | 20          | 64QAM           | 1          | 99           | 41490       | 2680                 | 15.03                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 18.88                                  |

# EIRP Power (dBm)

## LTE Band 7C

| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | QPSK           | 1          | 0            | 20850       | 2510                 | 7    | 20          | QPSK           | 1          | 99           | 21048       | 2529.8               | 15.75                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.38                                  |
|                                  |                  | 7    | 20          | QPSK           | 1          | 0            | 21001       | 2525.1               | 7    | 20          | QPSK           | 1          | 99           | 21199       | 2544.9               | 15.76                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.21                                  |
|                                  |                  | 7    | 20          | QPSK           | 1          | 0            | 21152       | 2540.2               | 7    | 20          | QPSK           | 1          | 99           | 21350       | 2560                 | 15.90                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.41                                  |
| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | 16QAM          | 1          | 0            | 20850       | 2510                 | 7    | 20          | 16QAM          | 1          | 99           | 21048       | 2529.8               | 14.38                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 21.17                                  |
|                                  |                  | 7    | 20          | 16QAM          | 1          | 0            | 21001       | 2525.1               | 7    | 20          | 16QAM          | 1          | 99           | 21199       | 2544.9               | 14.40                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.91                                  |
|                                  |                  | 7    | 20          | 16QAM          | 1          | 0            | 21152       | 2540.2               | 7    | 20          | 16QAM          | 1          | 99           | 21350       | 2560                 | 14.60                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 21.12                                  |
| Con<br>figure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_7C            | 7    | 20          | 64QAM          | 1          | 0            | 20850       | 2510                 | 7    | 20          | 64QAM          | 1          | 99           | 21048       | 2529.8               | 13.78                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.64                                  |
|                                  |                  | 7    | 20          | 64QAM          | 1          | 0            | 21001       | 2525.1               | 7    | 20          | 64QAM          | 1          | 99           | 21199       | 2544.9               | 13.87                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.29                                  |
|                                  |                  | 7    | 20          | 64QAM          | 1          | 0            | 21152       | 2540.2               | 7    | 20          | 64QAM          | 1          | 99           | 21350       | 2560                 | 13.95                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 20.69                                  |

\*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

## LTE Band 38C

| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|------|-------------|-----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | QPSK            | 1          | 0            | 37850       | 2580                 | 38   | 20          | QPSK            | 1          | 99           | 38048       | 2599.8               | 16.37                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 22.96                                  |
|                                  |                  | 38   | 20          | QPSK            | 1          | 0            | 37901       | 2585.1               | 38   | 20          | QPSK            | 1          | 99           | 38099       | 2604.9               | 16.41                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 22.99                                  |
|                                  |                  | 38   | 20          | QPSK            | 1          | 0            | 37952       | 2590.2               | 38   | 20          | QPSK            | 1          | 99           | 38150       | 2610                 | 16.36                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 23.00                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | 16QAM           | 1          | 0            | 37850       | 2580                 | 38   | 20          | 16QAM           | 1          | 99           | 38048       | 2599.8               | 15.29                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 21.69                                  |
|                                  |                  | 38   | 20          | 16QAM           | 1          | 0            | 37901       | 2585.1               | 38   | 20          | 16QAM           | 1          | 99           | 38099       | 2604.9               | 15.04                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 21.57                                  |
|                                  |                  | 38   | 20          | 16QAM           | 1          | 0            | 37952       | 2590.2               | 38   | 20          | 16QAM           | 1          | 99           | 38150       | 2610                 | 14.90                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 21.68                                  |
| Con-<br>figure                   | Com-<br>bination | PCC  |             |                 |            |              |             |                      | SCC  |             |                 |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu-<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                 |            |              |             |                      |      |             |                 |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>38C       | 38   | 20          | 64QAM           | 1          | 0            | 37850       | 2580                 | 38   | 20          | 64QAM           | 1          | 99           | 38048       | 2599.8               | 14.60                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 21.05                                  |
|                                  |                  | 38   | 20          | 64QAM           | 1          | 0            | 37901       | 2585.1               | 38   | 20          | 64QAM           | 1          | 99           | 38099       | 2604.9               | 14.43                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 20.81                                  |
|                                  |                  | 38   | 20          | 64QAM           | 1          | 0            | 37952       | 2590.2               | 38   | 20          | 64QAM           | 1          | 99           | 38150       | 2610                 | 14.21                                  |
|                                  |                  |      |             |                 | 1          | 99           |             |                      |      |             |                 | 1          | 0            |             |                      | 21.23                                  |

\*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

# LTE Band 41C

| Con<br>fugure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|----------------------------------|------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|------|-------------|----------------|------------|--------------|-------------|----------------------|----------------------------------------|
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | QPSK           | 1          | 0            | 39750       | 2506                 | 41   | 20          | QPSK           | 1          | 99           | 39948       | 2525.8               | 20.29                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 23.75                                  |
|                                  |                  | 41   | 20          | QPSK           | 1          | 0            | 40529       | 2583.9               | 41   | 20          | QPSK           | 1          | 99           | 40712       | 2602.2               | 20.23                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 23.72                                  |
|                                  |                  | 41   | 20          | QPSK           | 1          | 0            | 41292       | 2660.2               | 41   | 20          | QPSK           | 1          | 99           | 41490       | 2680                 | 20.15                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 23.63                                  |
| Con<br>fugure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | 16QAM          | 1          | 0            | 39750       | 2506                 | 41   | 20          | 16QAM          | 1          | 99           | 39948       | 2525.8               | 18.99                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.63                                  |
|                                  |                  | 41   | 20          | 16QAM          | 1          | 0            | 40529       | 2583.9               | 41   | 20          | 16QAM          | 1          | 99           | 40712       | 2602.2               | 18.91                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.28                                  |
|                                  |                  | 41   | 20          | 16QAM          | 1          | 0            | 41292       | 2660.2               | 41   | 20          | 16QAM          | 1          | 99           | 41490       | 2680                 | 18.59                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.36                                  |
| Con<br>fugure                    | Com-<br>bination | PCC  |             |                |            |              |             |                      | SCC  |             |                |            |              |             |                      | Measurement Power                      |
|                                  |                  | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Band | BW<br>(MHz) | Modu<br>lation | RB<br>Size | RB<br>Offset | UL<br>Chan. | UL<br>Freq.<br>(MHz) | Tx Power<br>with UL-CA<br>Active (dBm) |
|                                  |                  |      |             |                |            |              |             |                      |      |             |                |            |              |             |                      | Total                                  |
| Intra<br>Band<br>Conti-<br>guous | CA_<br>41C       | 41   | 20          | 64QAM          | 1          | 0            | 39750       | 2506                 | 41   | 20          | 64QAM          | 1          | 99           | 39948       | 2525.8               | 18.24                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 22.03                                  |
|                                  |                  | 41   | 20          | 64QAM          | 1          | 0            | 40529       | 2583.9               | 41   | 20          | 64QAM          | 1          | 99           | 40712       | 2602.2               | 18.16                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 21.39                                  |
|                                  |                  | 41   | 20          | 64QAM          | 1          | 0            | 41292       | 2660.2               | 41   | 20          | 64QAM          | 1          | 99           | 41490       | 2680                 | 17.85                                  |
|                                  |                  |      |             |                | 1          | 99           |             |                      |      |             |                | 1          | 0            |             |                      | 21.70                                  |

\*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

## 4.2 Radiated Emission Measurement

### 4.2.1 Limits of Radiated Emission Measurement

In the FCC 27.53(m) (4)(6), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least  $55 + 10 \log (P)$  dB. The emission limit equal to  $-25\text{dBm}$ .

### 4.2.2 Test Procedure

- a. 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 height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- d. Following C63.26 section 5.5 and 5.2.7.  
 $\text{EIRP (dBm)} = E (\text{dB}\mu\text{V/m}) + 20\log (D) - 104.8$ ; where D is the measurement distance (in the far field region) in m.  
 $\text{ERP (dBm)} = E (\text{dB}\mu\text{V/m}) + 20\log (D) - 104.8 - 2.15$ ; where D is the measurement distance (in the far field region) in m.

Note:

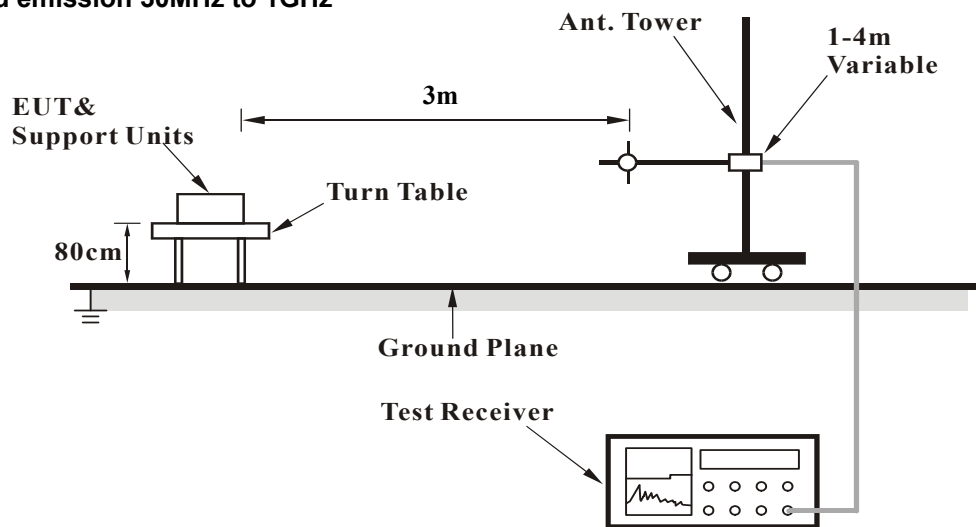
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:  
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

### 4.2.3 Deviation from Test Standard

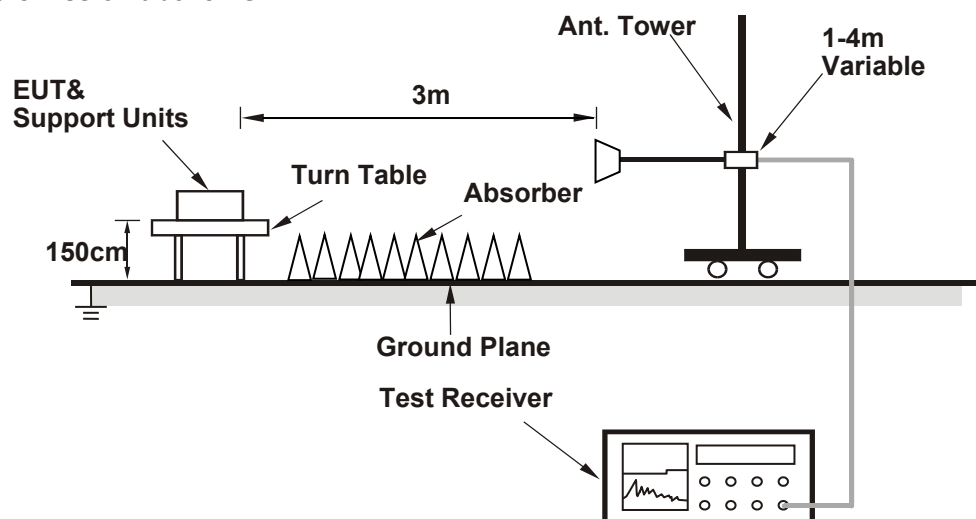
No deviation.

#### 4.2.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

#### 4.2.5 Test Results

Below 1GHz

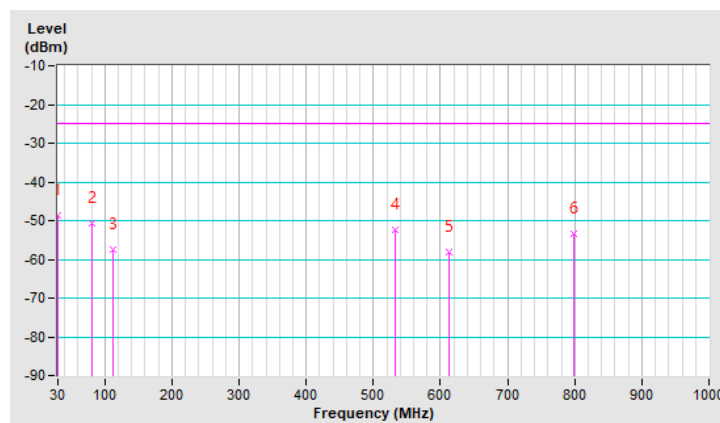
LTE Band 7C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>20850 (2510.0MHz) +<br>21048 (2529.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.00           | -48.80     | -25.00      | -23.80      | 1.50 H             | 18                   | 60.95            | -109.75                  |
| 2                                                    | 80.44           | -50.70     | -25.00      | -25.70      | 1.25 H             | 205                  | 62.85            | -113.55                  |
| 3                                                    | 111.48          | -57.54     | -25.00      | -32.54      | 1.25 H             | 120                  | 53.81            | -111.35                  |
| 4                                                    | 533.43          | -52.24     | -25.00      | -27.24      | 1.50 H             | 281                  | 50.22            | -102.46                  |
| 5                                                    | 612.97          | -58.05     | -25.00      | -33.05      | 1.00 H             | 18                   | 42.32            | -100.37                  |
| 6                                                    | 799.21          | -53.26     | -25.00      | -28.26      | 1.50 H             | 167                  | 44.45            | -97.71                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



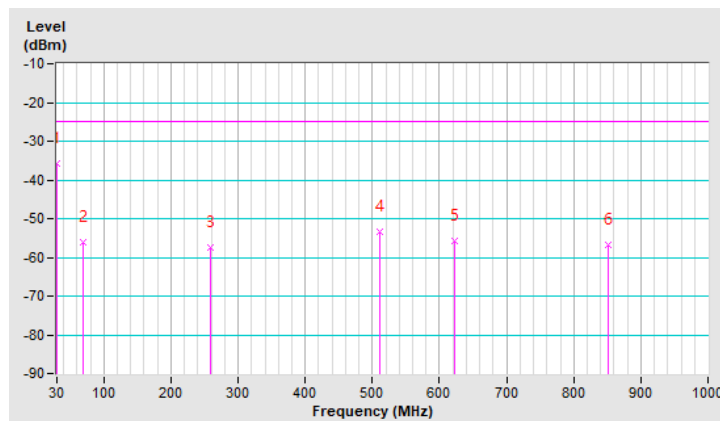


|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>20850 (2510.0MHz) +<br>21048 (2529.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |            |             |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 30.00           | -35.60     | -25.00      | -10.60      | 1.25 V             | 54                   | 74.15            | -109.75                  |
| 2                                                  | 69.77           | -55.95     | -25.00      | -30.95      | 1.00 V             | 324                  | 55.00            | -110.95                  |
| 3                                                  | 258.92          | -57.43     | -25.00      | -32.43      | 1.50 V             | 113                  | 51.94            | -109.37                  |
| 4                                                  | 510.15          | -53.38     | -25.00      | -28.38      | 1.00 V             | 268                  | 49.46            | -102.84                  |
| 5                                                  | 621.70          | -55.67     | -25.00      | -30.67      | 1.50 V             | 230                  | 44.68            | -100.35                  |
| 6                                                  | 851.59          | -56.68     | -25.00      | -31.68      | 1.50 V             | 270                  | 40.17            | -96.85                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



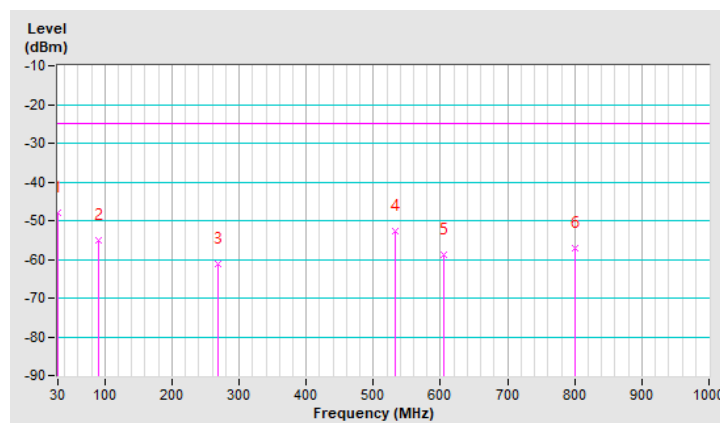
LTE Band 38C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37850 (2580.0MHz) +<br>38048 (2599.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.00           | -48.07     | -25.00      | -23.07      | 1.50 H             | 79                   | 61.68            | -109.75                  |
| 2                                                    | 90.14           | -54.96     | -25.00      | -29.96      | 1.25 H             | 72                   | 59.32            | -114.28                  |
| 3                                                    | 268.62          | -61.12     | -25.00      | -36.12      | 1.50 H             | 316                  | 47.74            | -108.86                  |
| 4                                                    | 532.46          | -52.80     | -25.00      | -27.80      | 1.25 H             | 284                  | 49.67            | -102.47                  |
| 5                                                    | 604.24          | -58.68     | -25.00      | -33.68      | 1.50 H             | 38                   | 41.83            | -100.51                  |
| 6                                                    | 800.18          | -57.16     | -25.00      | -32.16      | 1.00 H             | 148                  | 40.50            | -97.66                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

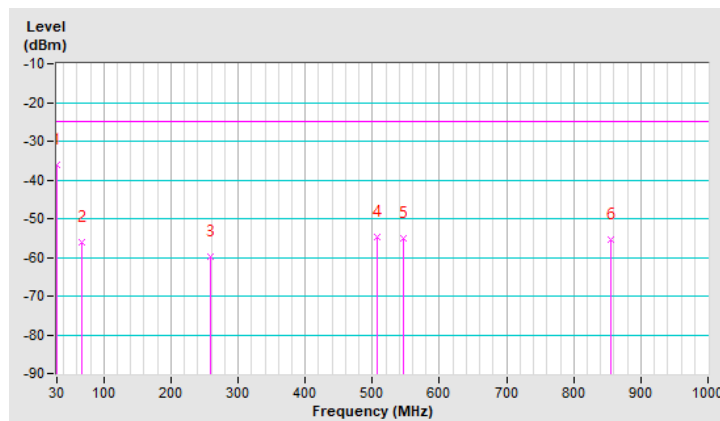


|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37850 (2580.0MHz) +<br>38048 (2599.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |            |             |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 30.00           | -36.12     | -25.00      | -11.12      | 1.25 V             | 217                  | 73.63            | -109.75                  |
| 2                                                  | 67.83           | -56.14     | -25.00      | -31.14      | 1.50 V             | 332                  | 54.37            | -110.51                  |
| 3                                                  | 257.95          | -59.80     | -25.00      | -34.80      | 1.50 V             | 332                  | 49.61            | -109.41                  |
| 4                                                  | 506.27          | -54.87     | -25.00      | -29.87      | 1.25 V             | 165                  | 48.10            | -102.97                  |
| 5                                                  | 547.01          | -55.22     | -25.00      | -30.22      | 1.00 V             | 98                   | 47.02            | -102.24                  |
| 6                                                  | 854.50          | -55.57     | -25.00      | -30.57      | 1.50 V             | 339                  | 41.28            | -96.85                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



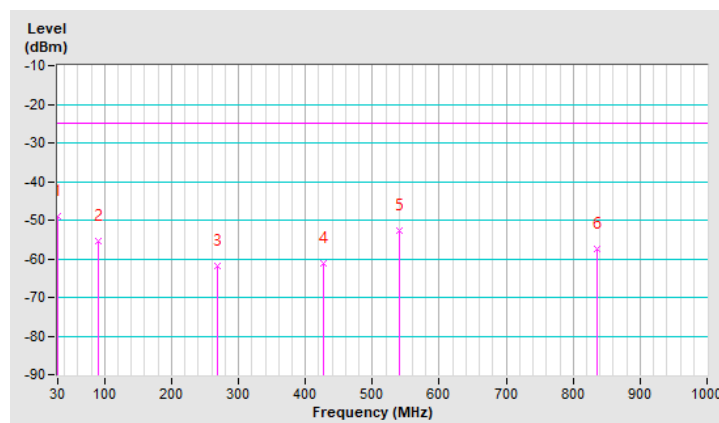
LTE Band 41C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>39750 (2506.0MHz) +<br>39948 (2525.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 30.00           | -49.04     | -25.00      | -24.04      | 1.50 H             | 97                   | 60.71            | -109.75                  |
| 2                                                    | 90.14           | -55.33     | -25.00      | -30.33      | 1.25 H             | 42                   | 58.95            | -114.28                  |
| 3                                                    | 268.62          | -61.97     | -25.00      | -36.97      | 1.00 H             | 276                  | 46.89            | -108.86                  |
| 4                                                    | 427.70          | -61.03     | -25.00      | -36.03      | 1.50 H             | 279                  | 43.57            | -104.60                  |
| 5                                                    | 540.22          | -52.64     | -25.00      | -27.64      | 1.00 H             | 268                  | 49.74            | -102.38                  |
| 6                                                    | 835.10          | -57.56     | -25.00      | -32.56      | 1.50 H             | 290                  | 39.50            | -97.06                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

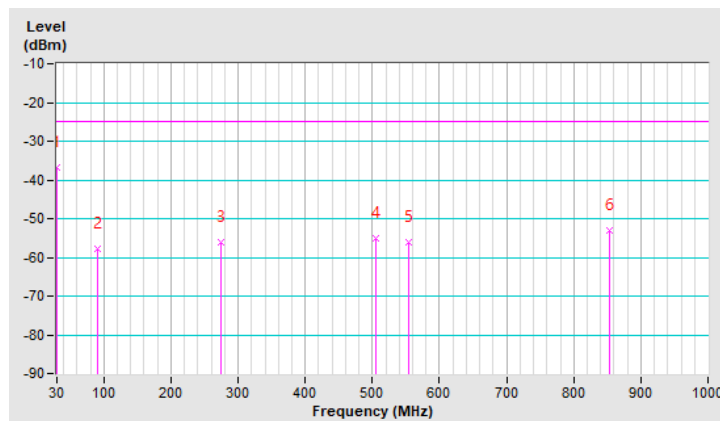


|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>39750 (2506.0MHz) +<br>39948 (2525.8MHz) | Frequency Range | Below 1000 MHz        |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Vertical at 3 m |                 |            |             |             |                    |                      |                  |                          |
|----------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                 | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                  | 30.00           | -36.93     | -25.00      | -11.93      | 1.50 V             | 166                  | 72.82            | -109.75                  |
| 2                                                  | 90.14           | -57.65     | -25.00      | -32.65      | 1.25 V             | 244                  | 56.63            | -114.28                  |
| 3                                                  | 275.41          | -55.96     | -25.00      | -30.96      | 1.50 V             | 19                   | 52.53            | -108.49                  |
| 4                                                  | 505.30          | -55.08     | -25.00      | -30.08      | 1.25 V             | 273                  | 47.91            | -102.99                  |
| 5                                                  | 553.80          | -56.27     | -25.00      | -31.27      | 1.50 V             | 98                   | 45.79            | -102.06                  |
| 6                                                  | 853.53          | -52.93     | -25.00      | -27.93      | 1.00 V             | 345                  | 43.93            | -96.86                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



Above 1GHz

LTE Band 7C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>20850 (2510.0MHz) +<br>21048 (2529.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5020.00         | -47.71     | -25.00      | -22.71      | 1.00 H             | 115                  | 45.20            | -92.91                   |
| 2                                                    | 5059.60         | -49.61     | -25.00      | -24.61      | 2.13 H             | 82                   | 43.20            | -92.81                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5020.00         | -45.31     | -25.00      | -20.31      | 1.52 V             | 330                  | 47.60            | -92.91                   |
| 2                                                    | 5059.60         | -48.41     | -25.00      | -23.41      | 1.69 V             | 126                  | 44.40            | -92.81                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>21001 (2525.1MHz) +<br>21199 (2544.9MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5050.20         | -47.90     | -25.00      | -22.90      | 1.02 H             | 115                  | 45.00            | -92.90                   |
| 2                                                    | 5089.80         | -49.70     | -25.00      | -24.70      | 2.15 H             | 86                   | 43.10            | -92.80                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5050.20         | -45.40     | -25.00      | -20.40      | 1.55 V             | 328                  | 47.50            | -92.90                   |
| 2                                                    | 5089.80         | -48.60     | -25.00      | -23.60      | 1.68 V             | 124                  | 44.20            | -92.80                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>21152 (2540.2MHz) +<br>21350 (2560.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5080.40         | -47.99     | -25.00      | -22.99      | 1.05 H             | 114                  | 44.77            | -92.76                   |
| 2                                                    | 5120.00         | -49.77     | -25.00      | -24.77      | 1.14 H             | 81                   | 42.92            | -92.69                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5080.40         | -45.39     | -25.00      | -20.39      | 1.47 V             | 330                  | 47.37            | -92.76                   |
| 2                                                    | 5120.00         | -48.76     | -25.00      | -23.76      | 1.64 V             | 126                  | 43.93            | -92.69                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



LTE Band 38C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37850 (2580.0MHz) +<br>38048 (2599.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5160.00         | -46.61     | -25.00      | -21.61      | 1.02 H             | 109                  | 46.12            | -92.73                   |
| 2                                                    | 5199.60         | -49.46     | -25.00      | -24.46      | 2.00 H             | 196                  | 43.38            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5160.00         | -39.81     | -25.00      | -14.81      | 1.34 V             | 336                  | 52.92            | -92.73                   |
| 2                                                    | 5199.60         | -47.12     | -25.00      | -22.12      | 1.66 V             | 139                  | 45.72            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37901 (2585.1MHz) +<br>38099 (2604.9MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5170.20         | -46.80     | -25.00      | -21.80      | 1.00 H             | 106                  | 46.00            | -92.80                   |
| 2                                                    | 5209.80         | -49.90     | -25.00      | -24.90      | 1.97 H             | 195                  | 43.00            | -92.90                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5170.20         | -40.20     | -25.00      | -15.20      | 1.30 V             | 333                  | 52.60            | -92.80                   |
| 2                                                    | 5209.80         | -47.40     | -25.00      | -22.40      | 1.63 V             | 143                  | 45.50            | -92.90                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37952 (2590.2MHz) +<br>38150 (2610.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5180.40         | -46.84     | -25.00      | -21.84      | 1.03 H             | 117                  | 45.94            | -92.78                   |
| 2                                                    | 5220.00         | -49.96     | -25.00      | -24.96      | 2.00 H             | 199                  | 42.93            | -92.89                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5180.40         | -40.25     | -25.00      | -15.25      | 1.35 V             | 337                  | 52.53            | -92.78                   |
| 2                                                    | 5220.00         | -47.43     | -25.00      | -22.43      | 1.62 V             | 136                  | 45.46            | -92.89                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

LTE Band 41C, Channel Bandwidth 20MHz + 20MHz (1 RB / 0 RB Offset + 1 RB / 99 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>39750 (2506.0MHz) +<br>39948 (2525.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5012.00         | -47.39     | -25.00      | -22.39      | 1.36 H             | 123                  | 45.55            | -92.94                   |
| 2                                                    | 5051.60         | -49.87     | -25.00      | -24.87      | 2.38 H             | 159                  | 42.97            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5012.00         | -44.57     | -25.00      | -19.57      | 1.87 V             | 336                  | 48.37            | -92.94                   |
| 2                                                    | 5051.60         | -47.99     | -25.00      | -22.99      | 1.72 V             | 153                  | 44.85            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>40529 (2583.9MHz) +<br>40712 (2602.2MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5167.80         | -47.40     | -25.00      | -22.40      | 1.41 H             | 127                  | 45.34            | -92.74                   |
| 2                                                    | 5204.40         | -50.10     | -25.00      | -25.10      | 2.35 H             | 163                  | 42.74            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5167.80         | -44.61     | -25.00      | -19.61      | 1.88 V             | 333                  | 48.13            | -92.74                   |
| 2                                                    | 5204.40         | -48.18     | -25.00      | -23.18      | 1.75 V             | 160                  | 44.66            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>41292 (2660.2MHz) +<br>41490 (2680.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5320.40         | -47.92     | -25.00      | -22.92      | 1.31 H             | 121                  | 45.11            | -93.03                   |
| 2                                                    | 5360.00         | -50.21     | -25.00      | -25.21      | 2.35 H             | 157                  | 42.75            | -92.96                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5320.40         | -45.09     | -25.00      | -20.09      | 1.82 V             | 339                  | 47.94            | -93.03                   |
| 2                                                    | 5360.00         | -48.45     | -25.00      | -23.45      | 1.71 V             | 151                  | 44.51            | -92.96                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

LTE Band 7C, Channel Bandwidth 20MHz + 20MHz (1 RB / 99 RB Offset + 1 RB / 0 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>20850 (2510.0MHz) +<br>21048 (2529.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5020.00         | -47.95     | -25.00      | -22.95      | 1.01 H             | 113                  | 44.96            | -92.91                   |
| 2                                                    | 5059.60         | -49.93     | -25.00      | -24.93      | 2.08 H             | 80                   | 42.88            | -92.81                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5020.00         | -45.54     | -25.00      | -20.54      | 1.49 V             | 332                  | 47.37            | -92.91                   |
| 2                                                    | 5059.60         | -48.79     | -25.00      | -23.79      | 1.65 V             | 127                  | 44.02            | -92.81                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>21001 (2525.1MHz) +<br>21199 (2544.9MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5050.20         | -48.20     | -25.00      | -23.20      | 1.01 H             | 119                  | 44.70            | -92.90                   |
| 2                                                    | 5089.80         | -49.80     | -25.00      | -24.80      | 2.08 H             | 80                   | 43.00            | -92.80                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5050.20         | -45.70     | -25.00      | -20.70      | 1.52 V             | 322                  | 47.20            | -92.90                   |
| 2                                                    | 5089.80         | -48.80     | -25.00      | -23.80      | 1.67 V             | 130                  | 44.00            | -92.80                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.



|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>21152 (2540.2MHz) +<br>21350 (2560.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5080.40         | -47.81     | -25.00      | -22.81      | 1.11 H             | 117                  | 44.95            | -92.76                   |
| 2                                                    | 5120.00         | -49.93     | -25.00      | -24.93      | 2.22 H             | 83                   | 42.76            | -92.69                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5080.40         | -45.39     | -25.00      | -20.39      | 1.57 V             | 330                  | 47.37            | -92.76                   |
| 2                                                    | 5120.00         | -48.70     | -25.00      | -23.70      | 1.64 V             | 128                  | 43.99            | -92.69                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

LTE Band 38C, Channel Bandwidth 20MHz + 20MHz (1 RB / 99 RB Offset + 1 RB / 0 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37850 (2580.0MHz) +<br>38048 (2599.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5160.00         | -46.94     | -25.00      | -21.94      | 1.03 H             | 108                  | 45.79            | -92.73                   |
| 2                                                    | 5199.60         | -49.72     | -25.00      | -24.72      | 2.05 H             | 197                  | 43.12            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5160.00         | -40.06     | -25.00      | -15.06      | 1.37 V             | 333                  | 52.67            | -92.73                   |
| 2                                                    | 5199.60         | -47.55     | -25.00      | -22.55      | 1.70 V             | 137                  | 45.29            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37901 (2585.1MHz) +<br>38099 (2604.9MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5170.20         | -47.10     | -25.00      | -22.10      | 1.01 H             | 107                  | 45.70            | -92.80                   |
| 2                                                    | 5209.80         | -49.70     | -25.00      | -24.70      | 1.98 H             | 197                  | 43.20            | -92.90                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5170.20         | -40.30     | -25.00      | -15.30      | 1.36 V             | 336                  | 52.50            | -92.80                   |
| 2                                                    | 5209.80         | -47.40     | -25.00      | -22.40      | 1.69 V             | 138                  | 45.50            | -92.90                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>37952 (2590.2MHz) +<br>38150 (2610.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5180.40         | -46.79     | -25.00      | -21.79      | 1.02 H             | 114                  | 45.99            | -92.78                   |
| 2                                                    | 5220.00         | -50.00     | -25.00      | -25.00      | 2.01 H             | 195                  | 42.89            | -92.89                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5180.40         | -40.25     | -25.00      | -15.25      | 1.35 V             | 337                  | 52.53            | -92.78                   |
| 2                                                    | 5220.00         | -47.43     | -25.00      | -22.43      | 1.62 V             | 136                  | 45.46            | -92.89                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

LTE Band 41C, Channel Bandwidth 20MHz + 20MHz (1 RB / 99 RB Offset + 1 RB / 0 RB Offset)

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>39750 (2506.0MHz) +<br>39948 (2525.8MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5012.00         | -47.73     | -25.00      | -22.73      | 1.38 H             | 122                  | 45.21            | -92.94                   |
| 2                                                    | 5051.60         | -50.16     | -25.00      | -25.16      | 2.33 H             | 155                  | 42.68            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5012.00         | -44.79     | -25.00      | -19.79      | 1.89 V             | 335                  | 48.15            | -92.94                   |
| 2                                                    | 5051.60         | -48.39     | -25.00      | -23.39      | 1.73 V             | 153                  | 44.45            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>40529 (2583.9MHz) +<br>40712 (2602.2MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5167.80         | -47.44     | -25.00      | -22.44      | 1.32 H             | 122                  | 45.30            | -92.74                   |
| 2                                                    | 5204.40         | -50.27     | -25.00      | -25.27      | 2.39 H             | 158                  | 42.57            | -92.84                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5167.80         | -44.74     | -25.00      | -19.74      | 1.82 V             | 336                  | 48.00            | -92.74                   |
| 2                                                    | 5204.40         | -48.50     | -25.00      | -23.50      | 1.74 V             | 150                  | 44.34            | -92.84                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

|                          |                                                        |                 |                       |
|--------------------------|--------------------------------------------------------|-----------------|-----------------------|
| Mode                     | TX channel<br>41292 (2660.2MHz) +<br>41490 (2680.0MHz) | Frequency Range | 1GHz ~ 27GHz          |
| Environmental Conditions | 19deg. C, 67%RH                                        | Input Power     | 120Vac, 60Hz (System) |
| Tested By                | Edison Lee                                             |                 |                       |

| Antenna Polarity & Test Distance : Horizontal at 3 m |                 |            |             |             |                    |                      |                  |                          |
|------------------------------------------------------|-----------------|------------|-------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5320.40         | -47.83     | -25.00      | -22.83      | 1.35 H             | 120                  | 45.20            | -93.03                   |
| 2                                                    | 5360.00         | -50.22     | -25.00      | -25.22      | 2.38 H             | 162                  | 42.74            | -92.96                   |
| Antenna Polarity & Test Distance : Vertical at 3 m   |                 |            |             |             |                    |                      |                  |                          |
| No                                                   | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1                                                    | 5320.40         | -45.15     | -25.00      | -20.15      | 1.85 V             | 338                  | 47.88            | -93.03                   |
| 2                                                    | 5360.00         | -48.31     | -25.00      | -23.31      | 1.68 V             | 157                  | 44.65            | -92.96                   |

Remarks:

1.  $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3.  $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit.

## 5 Pictures of Test Arrangements

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



## Appendix – Information of 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 and approved according to ISO/IEC 17025.

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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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