

## FCC Test Report (PART 27)

**Report No.:** RF200518E05-7

**FCC ID:** MQT-AT150R3

**Test Model:** xCL\_AT-150-R3-18U

**Received Date:** May 18, 2020

**Test Date:** June 08 to 29, 2020

**Issued Date:** Sep. 18, 2020

**Applicant:** XAC AUTOMATION CORP.

**Address:** 4F, No. 30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL  
PARK,HSINCHU,TAIWAN

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

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Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**FCC Registration /  
Designation Number:** 723255 / TW2022



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### Release Control Record

| Issue No.     | Description       | Date Issued   |
|---------------|-------------------|---------------|
| RF200518E05-7 | Original release. | Sep. 18, 2020 |

## 1 Certificate of Conformity

**Product:** Terminal

**Brand:** XAC

**Test Model:** xCL\_AT-150-R3-18U

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** XAC AUTOMATION CORP.

**Test Date:** June 08 to 29, 2020

**Standards:** FCC Part 27, Subpart H / L  
FCC Part 2

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

**Prepared by :**



**Date:**

Sep. 18, 2020

Claire Kuan / Specialist

**Approved by :**



**Date:**

Sep. 18, 2020

Clark Lin / Technical Manager

## 2 Summary of Test Results

| Applied Standard: FCC Part 27 & Part 2 |                                                                    |        |                                                                                     |
|----------------------------------------|--------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------|
| FCC Clause                             | Test Item                                                          | Result | Remarks                                                                             |
| 2.1046<br>27.50                        | Radiated Power                                                     | PASS   | Meet the requirement of limit.                                                      |
| 2.1047                                 | Modulation characteristics                                         | PASS   | Meet the requirement                                                                |
| 2.1055<br>27.54                        | Frequency Stability<br>Stay with the authorized bands of operation | PASS   | Meet the requirement of limit.                                                      |
| 2.1049<br>27.53                        | Occupied Bandwidth                                                 | PASS   | Meet the requirement of limit.                                                      |
| 27.53                                  | Band Edge Measurements                                             | PASS   | Meet the requirement of limit.                                                      |
| ---                                    | Peak To Average Ratio                                              | PASS   | Meet the requirement of limit.                                                      |
| 2.1051<br>27.53                        | Conducted Spurious Emissions                                       | PASS   | Meet the requirement of limit.                                                      |
| 2.1053<br>27.53                        | Radiated Spurious Emissions                                        | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -32.26dB at 8562.5 MHz. |

Note:

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<br>(k=2) (±) |
|--------------------------------|---------------|-----------------------------------|
| Radiated Emissions up to 1 GHz | 9kHz ~ 30MHz  | 3.1 dB                            |
|                                | 30MHz ~ 1GHz  | 5.4 dB                            |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz  | 5.0 dB                            |
|                                | 18GHz ~ 40GHz | 5.3 dB                            |

## 2.2 Test Site and Instruments

For radiated spurious emissions test:

| DESCRIPTION & MANUFACTURER                 | MODEL NO.            | SERIAL NO.  | CALIBRATED DATE | CALIBRATED UNTIL |
|--------------------------------------------|----------------------|-------------|-----------------|------------------|
| Test Receiver<br>Keysight                  | N9038A               | MY54450088  | July 03, 2019   | July 02, 2020    |
| Pre-Amplifier<br>EMCI                      | EMC001340            | 980142      | May 25, 2020    | May 24, 2021     |
| Loop Antenna<br>Electro-Metrics            | EM-6879              | 264         | Feb. 18, 2020   | Feb. 17, 2021    |
| RF Cable                                   | NA                   | LOOPCAB-001 | Jan. 08, 2020   | Jan. 07, 2021    |
| RF Cable                                   | NA                   | LOOPCAB-002 | Jan. 08, 2020   | Jan. 07, 2021    |
| Pre-Amplifier<br>Mini-Circuits             | ZFL-1000VH2B         | AMP-ZFL-05  | Apr. 28, 2020   | Apr. 27, 2021    |
| Trilog Broadband<br>Antenna<br>SCHWARZBECK | VULB 9168            | 9168-361    | Nov. 11, 2019   | Nov. 10, 2020    |
| RF Cable                                   | 8D                   | 966-3-1     | Mar. 17, 2020   | Mar. 16, 2021    |
| RF Cable                                   | 8D                   | 966-3-2     | Mar. 17, 2020   | Mar. 16, 2021    |
| RF Cable                                   | 8D                   | 966-3-3     | Mar. 17, 2020   | Mar. 16, 2021    |
| Fixed attenuator<br>Mini-Circuits          | UNAT-5+              | PAD-3m-3-01 | Sep. 26, 2019   | Sep. 25, 2020    |
| Horn_Antenna<br>SCHWARZBECK                | BBHA9120-D           | 9120D-406   | Nov. 24, 2019   | Nov. 23, 2020    |
| Pre-Amplifier<br>EMCI                      | EMC12630SE           | 980384      | Jan. 15, 2020   | Jan. 14, 2021    |
| RF Cable                                   | EMC104-SM-SM-1200    | 160922      | Jan. 15, 2020   | Jan. 14, 2021    |
| RF Cable                                   | EMC104-SM-SM-2000    | 180601      | June 10, 2019   | June 09, 2020    |
| RF Cable                                   | EMC104-SM-SM-6000    | 180602      | June 10, 2019   | June 09, 2020    |
| Spectrum Analyzer<br>Keysight              | N9030A               | MY54490679  | July 17, 2019   | July 16, 2020    |
| Pre-Amplifier<br>EMCI                      | EMC184045SE          | 980387      | Jan. 15, 2020   | Jan. 14, 2021    |
| Horn_Antenna<br>SCHWARZBECK                | BBHA 9170            | BBHA9170519 | Nov. 24, 2019   | Nov. 23, 2020    |
| RF Cable                                   | EMC102-KM-KM-1200    | 160924      | Jan. 15, 2020   | Jan. 14, 2021    |
| RF Cable                                   | EMC-KM-KM-4000       | 200214      | Mar. 11, 2020   | Mar. 10, 2021    |
| Software                                   | ADT_Radiated_V8.7.08 | NA          | NA              | NA               |
| Antenna Tower & Turn<br>Table<br>Max-Full  | MF-7802              | MF780208406 | NA              | NA               |
| Boresight Antenna<br>Fixture               | FBA-01               | FBA-SIP01   | NA              | NA               |

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: June 08, 2020

**For other test items:**

| DESCRIPTION & MANUFACTURER                   | MODEL NO.                     | SERIAL NO.    | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------------------------|-------------------------------|---------------|-----------------|------------------|
| Spectrum Analyzer R&S                        | FSV40                         | 100964        | May 29, 2020    | May 28, 2021     |
| Spectrum Analyzer Keysight                   | N9030A                        | MY54490679    | July 17, 2019   | July 16, 2020    |
| Power meter Anritsu                          | ML2495A                       | 1529002       | July 26, 2019   | July 25, 2020    |
| Power sensor Anritsu                         | MA2411B                       | 1339443       | July 26, 2019   | July 25, 2020    |
| Fixed Attenuator Mini-Circuits               | MDCS18N-10                    | MDCS18N-10-01 | Apr. 14, 2020   | Apr. 13, 2021    |
| AC Power Source Extech Electronics           | 6205                          | 1440452       | NA              | NA               |
| DC Power Supply Topward                      | 6603D                         | 795558        | NA              | NA               |
| Temperature & Humidity Chamber Giant Force   | GTH-150-40-SP-AR              | MAA0812-008   | Jan. 16, 2020   | Jan. 15, 2021    |
| Voltage Meter FLUKE                          | 179                           | 89610322      | Sep. 25, 2019   | Sep. 24, 2020    |
| Mech Switch Absorptive Mini-Circuits         | MSP4TA-18+                    | 0140          | Feb. 10, 2020   | Feb. 09, 2021    |
| FXD ATTEN Mini-Circuits                      | BW-S3W2+                      | MN71981       | Feb. 10, 2020   | Feb. 09, 2021    |
| Software                                     | ADT_RF Test Software V6.6.5.4 | NA            | NA              | NA               |
| Universal Radio Communication Tester R&S     | CMU200                        | 121040        | Apr. 17, 2020   | Apr. 16, 2021    |
| LTE Wireless Communication Test Set Keysight | E7515A                        | MY56030229    | July 31, 2019   | July 30, 2020    |

- Note:**
1. The test was performed in Oven room 2.
  2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. Tested Date: June 29, 2020



### 3 General Information

#### 3.1 General Description of EUT

|                     |                                           |                     |
|---------------------|-------------------------------------------|---------------------|
| Product             | Terminal                                  |                     |
| Brand               | XAC                                       |                     |
| Test Model          | xCL AT-150-R3-18U                         |                     |
| Status of EUT       | ENGINEERING SAMPLE                        |                     |
| Power Supply Rating | Refer to note 3                           |                     |
| Modulation Type     | LTE                                       | QPSK, 16QAM         |
| Operating Frequency | LTE Band 4 (Channel Bandwidth: 1.4 MHz)   | 1710.7 ~ 1754.3 MHz |
|                     | LTE Band 4 (Channel Bandwidth: 3 MHz)     | 1711.5 ~ 1753.5 MHz |
|                     | LTE Band 4 (Channel Bandwidth: 5 MHz)     | 1712.5 ~ 1752.5 MHz |
|                     | LTE Band 4 (Channel Bandwidth: 10 MHz)    | 17115 ~ 17550 MHz   |
|                     | LTE Band 4 (Channel Bandwidth: 15 MHz)    | 1717.5 ~ 1747.5 MHz |
|                     | LTE Band 4 (Channel Bandwidth: 20 MHz)    | 1720 ~ 1745 MHz     |
|                     | LTE Band 12 (Channel Bandwidth: 1.4 MHz)  | 699.7 ~ 715.3 MHz   |
|                     | LTE Band 12 (Channel Bandwidth: 3 MHz)    | 700.5 ~ 714.5 MHz   |
|                     | LTE Band 12 (Channel Bandwidth: 5 MHz)    | 701.5 ~ 713.5 MHz   |
|                     | LTE Band 12 (Channel Bandwidth: 10 MHz)   | 704 ~ 711 MHz       |
| Max. EIRP Power     | LTE Band 4<br>(Channel Bandwidth 1.4MHz)  | 24.34dBm            |
|                     | LTE Band 4<br>(Channel Bandwidth 3MHz)    | 24.39dBm            |
|                     | LTE Band 4<br>(Channel Bandwidth 5MHz)    | 24.17dBm            |
|                     | LTE Band 4<br>(Channel Bandwidth 10MHz)   | 24.39dBm            |
|                     | LTE Band 4<br>(Channel Bandwidth 15MHz)   | 24.42dBm            |
|                     | LTE Band 4<br>(Channel Bandwidth 20MHz)   | 24.47dBm            |
| Max. ERP Power      | LTE Band 12<br>(Channel Bandwidth 1.4MHz) | 24.02dBm            |
|                     | LTE Band 12<br>(Channel Bandwidth 3MHz)   | 23.99dBm            |
|                     | LTE Band 12<br>(Channel Bandwidth 5MHz)   | 24.09dBm            |
|                     | LTE Band 12<br>(Channel Bandwidth 10MHz)  | 24.12dBm            |

|                     |                                           |                                 |
|---------------------|-------------------------------------------|---------------------------------|
| Emission Designator | LTE Band 4<br>(Channel Bandwidth 1.4MHz)  | QPSK: 1M09G7D<br>16QAM: 1M10D7W |
|                     | LTE Band 4<br>(Channel Bandwidth 3MHz)    | QPSK: 2M70G7D<br>16QAM: 2M68D7W |
|                     | LTE Band 4<br>(Channel Bandwidth 5MHz)    | QPSK: 4M51G7D<br>16QAM: 4M52D7W |
|                     | LTE Band 4<br>(Channel Bandwidth 10MHz)   | QPSK: 9M02G7D<br>16QAM: 9M00D7W |
|                     | LTE Band 4<br>(Channel Bandwidth 15MHz)   | QPSK: 13M5G7D<br>16QAM: 13M5D7W |
|                     | LTE Band 4<br>(Channel Bandwidth 20MHz)   | QPSK: 18M0G7D<br>16QAM: 18M0D7W |
|                     | LTE Band 12<br>(Channel Bandwidth 1.4MHz) | QPSK: 1M09G7D<br>16QAM: 1M10D7W |
|                     | LTE Band 12<br>(Channel Bandwidth 3MHz)   | QPSK: 2M71G7D<br>16QAM: 2M69D7W |
|                     | LTE Band 12<br>(Channel Bandwidth 5MHz)   | QPSK: 4M52G7D<br>16QAM: 4M52D7W |
|                     | LTE Band 12<br>(Channel Bandwidth 10MHz)  | QPSK: 9M02G7D<br>16QAM: 9M00D7W |
|                     | Antenna Type                              | Refer to Note                   |
|                     | Antenna Connector                         | Refer to Note                   |
| Accessory Device    |                                           | NA                              |
| Data Cable Supplied |                                           | NA                              |

Note:

1. The EUT has three radios as following table:

| Radio 1                         | Radio 2           | Radio 3 |
|---------------------------------|-------------------|---------|
| WLAN(2.4GHz + 5GHz) + Bluetooth | WWAN(LTE + WCDMA) | NFC     |

2. Simultaneously transmission condition.

| Condition | Technology  |           |
|-----------|-------------|-----------|
| 1         | WWAN        | NFC       |
| 2         | WWAN        | Bluetooth |
| 3         | WLAN 2.4GHz | NFC       |
| 4         | WLAN 5GHz   | NFC       |
| 5         | Bluetooth   | NFC       |

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. The EUT must be supplied power adapter and battery as following table:

| Adapter (Only test not for sale)                     |                 |                                                            |
|------------------------------------------------------|-----------------|------------------------------------------------------------|
| Brand                                                | Model           | Specification                                              |
| MASS POWER                                           | NBS10B050200VUU | AC Input: 100-240Vac, 0.3A, 50-60Hz<br>DC Output: 5Vdc, 2A |
| Battery (Option)                                     |                 |                                                            |
| Brand                                                | Model           | Specification                                              |
| Shenzhen Rishengzhi Electronics Technology Co., Ltd. | J625            | 3.7V, 3000mAh, 11.1Wh                                      |

4. The antennas provided to the EUT, please refer to the following table:

| Antenna No. | RF Chain No. | Brand | Model        | Antenna Net Gain(dBi) | Frequency range      | Antenna Type | Connector Type |
|-------------|--------------|-------|--------------|-----------------------|----------------------|--------------|----------------|
| NFC         | Main         | XAC   | RTOS         | 13                    | 13.56MHz             | wire         | None           |
| Wi-Fi BT    | Main         | AWAN  | AYF6P-100002 | -2.7                  | 2.4~2.4835GHz        | PIFA         | i-pex(MHF)     |
|             |              |       |              | 2.19                  | 5.15~5.85GHz         |              |                |
|             |              |       |              | -2.7                  | 2.4~2.4835GHz        |              |                |
| LTE         | Main(B2) TX  | AWAN  | AXF6P-100004 | 1.55                  | 1850 MHz to 1910 MHz | PIFA         | i-pex(MHF)     |
|             | Main(B4) TX  |       |              | 1.48                  | 1710 MHz to 1755 MHz |              |                |
|             | Main(B12) TX |       |              | 2.87                  | 699 MHz to 716 MHz   |              |                |
|             | Aux(B2) RX   | AWAN  | AXF6P-100005 | 2.36                  | 1930 MHz to 1990 MHz | PIFA         | i-pex(MHF)     |
|             | Aux(B4) RX   |       |              | 2.91                  | 2110 MHz to 2155 MHz |              |                |
|             | Aux(B12) RX  |       |              | 2.8                   | 729 MHz to 746 MHz   |              |                |
| WCDMA       | Main(B2) TX  | AWAN  | AXF6P-100004 | 1.55                  | 1850 MHz to 1910 MHz | PIFA         | i-pex(MHF)     |
|             | Main(B5) TX  |       |              | 1.23                  | 824 MHz to 849 MHz   |              |                |
|             | Aux(B2) RX   | AWAN  | AXF6P-100005 | 2.36                  | 1930 MHz to 1990 MHz | PIFA         | i-pex(MHF)     |
|             | Aux(B5) RX   |       |              | 2.84                  | 869 MHz to 894 MHz   |              |                |

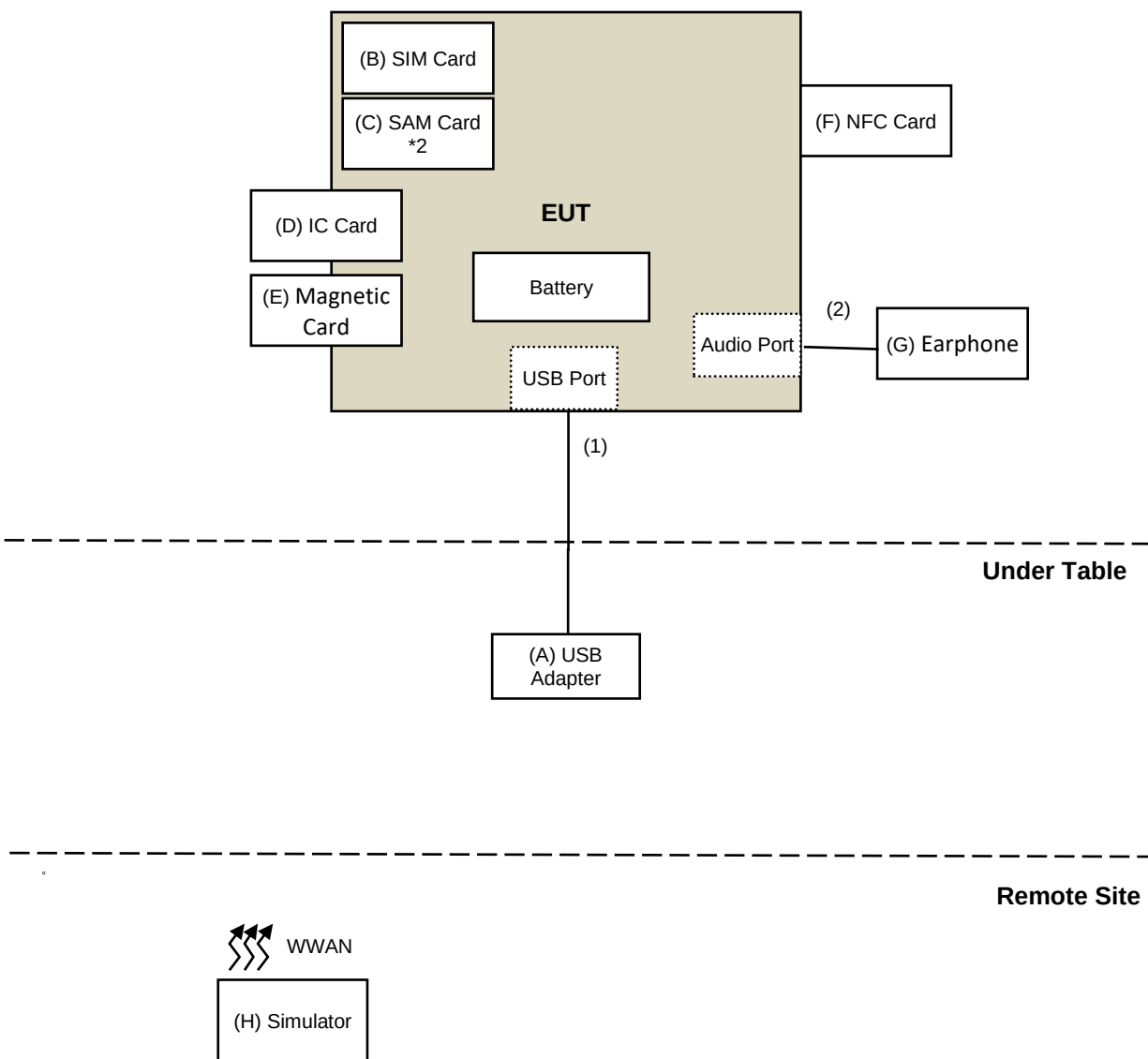
5. The EUT was pre-tested for radiated test under following test modes:

| Pre-test Mode                                                              | Power                     |
|----------------------------------------------------------------------------|---------------------------|
| <b>Mode A</b>                                                              | <b>Power from Adapter</b> |
| Mode B                                                                     | Power from Laptop         |
| From the above modes, the worst radiated test was found in <b>Mode A</b> . |                           |

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

7. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

### 3.2 Configuration of System under Test



### 3.2.1 Description of Support Units

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

| ID | Product       | Brand      | Model No.       | Serial No. | FCC ID | Remarks            |
|----|---------------|------------|-----------------|------------|--------|--------------------|
| A. | USB Adapter   | MASS POWER | NBS10B050200VUU | NA         | NA     | Supplied by client |
| B. | SIM Card      | Keysight   | NA              | NA         | NA     | Provided by Lab    |
| C. | SAM Card *2   | XAC        | NA              | NA         | NA     | Supplied by client |
| D. | IC Card       | XAC        | NA              | NA         | NA     | Supplied by client |
| E. | Magnetic Card | XAC        | NA              | NA         | NA     | Supplied by client |
| F. | NFC Card      | XAC        | NA              | NA         | NA     | Supplied by client |
| G. | Earphone      | Infinix    | NA              | NA         | NA     | Provided by Lab    |
| H. | Simulator     | Anritsu    | MT8820C         | 6201127458 | NA     | Provided by Lab    |

Note:

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

| ID | Descriptions            | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks            |
|----|-------------------------|------|------------|--------------------|--------------|--------------------|
| 1. | USB Type C to USB Cable | 1    | 1.2        | Yes                | 0            | Supplied by client |
| 2. | Audio                   | 1    | 1.1        | Yes                | 0            | Provided by Lab    |

### 3.3 Test Mode Applicability and Tested Channel Detail

#### LTE Band 4

| TEST ITEM             | AVAILABLE CHANNEL | TESTED CHANNEL      | CHANNEL BANDWIDTH | MODULATION | MODE                 |
|-----------------------|-------------------|---------------------|-------------------|------------|----------------------|
| EIRP                  | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK/16QAM | 1RB / 0 RB offset    |
|                       | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK/16QAM | 1RB / 0 RB offset    |
|                       | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK/16QAM | 1RB / 0 RB offset    |
|                       | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK/16QAM | 1RB / 0 RB offset    |
|                       | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK/16QAM | 1RB / 0 RB offset    |
|                       | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK/16QAM | 1RB / 0 RB offset    |
| Frequency Stability   | 19957 to 20393    | 20175               | 1.4MHz            | QPSK       | -                    |
|                       | 19965 to 20385    | 20175               | 3MHz              | QPSK       | -                    |
|                       | 19975 to 20375    | 20175               | 5MHz              | QPSK       | -                    |
|                       | 20000 to 20350    | 20175               | 10MHz             | QPSK       | -                    |
|                       | 20025 to 20325    | 20175               | 15MHz             | QPSK       | -                    |
|                       | 20050 to 20300    | 20175               | 20MHz             | QPSK       | -                    |
| Occupied Bandwidth    | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK/16QAM | Full RB              |
|                       | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK/16QAM | Full RB              |
|                       | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK/16QAM | Full RB              |
|                       | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK/16QAM | Full RB              |
|                       | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK/16QAM | Full RB              |
|                       | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK/16QAM | Full RB              |
| Peak to Average Ratio | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK/16QAM | Full RB              |
|                       | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK/16QAM | Full RB              |
|                       | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK/16QAM | Full RB              |
|                       | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK/16QAM | Full RB              |
|                       | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK/16QAM | Full RB              |
|                       | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK/16QAM | Full RB              |
| Band Edge             | 19957 to 20393    | 19957               | 1.4MHz            | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20393               |                   |            | 1 RB / 5 RB Offset   |
|                       |                   | 19957, 20393        |                   |            | 6 RB / 0 RB Offset   |
|                       | 19965 to 20385    | 19965               | 3MHz              | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20385               |                   |            | 1 RB / 14 RB Offset  |
|                       |                   | 19965 , 20385       |                   |            | 15 RB / 0 RB Offset  |
|                       | 19975 to 20375    | 19975               | 5MHz              | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20375               |                   |            | 1 RB / 24 RB Offset  |
|                       |                   | 19975, 20375        |                   |            | 25 RB / 0 RB Offset  |
|                       | 20000 to 20350    | 20000               | 10MHz             | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20350               |                   |            | 1 RB / 49 RB Offset  |
|                       |                   | 20000, 20350        |                   |            | 50 RB / 0 RB Offset  |
|                       | 20025 to 20325    | 20025               | 15MHz             | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20325               |                   |            | 1 RB / 74 RB Offset  |
|                       |                   | 20025, 20325        |                   |            | 75 RB / 0 RB Offset  |
|                       | 20050 to 20300    | 20050               | 20MHz             | QPSK       | 1 RB / 0 RB Offset   |
|                       |                   | 20300               |                   |            | 1 RB / 99 RB Offset  |
|                       |                   | 20050, 20300        |                   |            | 100 RB / 0 RB Offset |

|                    |                |                     |        |      |                    |
|--------------------|----------------|---------------------|--------|------|--------------------|
| Conducted Emission | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
|                    | 19965 to 20385 | 19965, 20175, 20385 | 3MHz   | QPSK | 1 RB / 0 RB Offset |
|                    | 19975 to 20375 | 19975, 20175, 20375 | 5MHz   | QPSK | 1 RB / 0 RB Offset |
|                    | 20000 to 20350 | 20000, 20175, 20350 | 10MHz  | QPSK | 1 RB / 0 RB Offset |
|                    | 20025 to 20325 | 20025, 20175, 20325 | 15MHz  | QPSK | 1 RB / 0 RB Offset |
|                    | 20050 to 20300 | 20050, 20175, 20300 | 20MHz  | QPSK | 1 RB / 0 RB Offset |
| Radiated Emission  | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
|                    | 19965 to 20385 | 19965, 20175, 20385 | 3MHz   | QPSK | 1 RB / 0 RB Offset |
|                    | 19975 to 20375 | 19975, 20175, 20375 | 5MHz   | QPSK | 1 RB / 0 RB Offset |
|                    | 20000 to 20350 | 20000, 20175, 20350 | 10MHz  | QPSK | 1 RB / 0 RB Offset |
|                    | 20025 to 20325 | 20025, 20175, 20325 | 15MHz  | QPSK | 1 RB / 0 RB Offset |
|                    | 20050 to 20300 | 20050, 20175, 20300 | 20MHz  | QPSK | 1 RB / 0 RB Offset |

**NOTE:**

All supported modulation types were evaluated. The Worst case of QPSK was selected. Therefore, the Frequency Stability, Band Edge, Condcudeted Emission and Radiated Emission were presented under QPSK mode only.

**Test Condition:**

| Test Item                       | Environmental Conditions | Input Power (System) | Tested By    |
|---------------------------------|--------------------------|----------------------|--------------|
| EIRP                            | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Frequency Stability             | 25deg. C, 60%RH          | 5Vdc                 | Jynuchun Lin |
| Occupied Bandwidth              | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Band Edge                       | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Peak to Average Ratio           | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Condcudeted Emission            | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Radiated Emission<br>Below 1GHz | 25deg. C, 75%RH          | 120Vac, 60Hz         | Kevin Ko     |
| Radiated Emission<br>Above 1GHz | 25deg. C, 75%RH          | 120Vac, 60Hz         | Kevin Ko     |

## LTE Band 12

| TEST ITEM             | AVAILABLE CHANNEL | TESTED CHANNEL      | CHANNEL BANDWIDTH | MODULATION | MODE                |
|-----------------------|-------------------|---------------------|-------------------|------------|---------------------|
| ERP                   | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK/16QAM | 1RB / 0 RB offset   |
|                       | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK/16QAM | 1RB / 0 RB offset   |
|                       | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK/16QAM | 1RB / 0 RB offset   |
|                       | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK/16QAM | 1RB / 0 RB offset   |
| Frequency Stability   | 23017 to 23173    | 23095               | 1.4MHz            | QPSK       | -                   |
|                       | 23025 to 23165    | 23095               | 3MHz              | QPSK       | -                   |
|                       | 23035 to 23155    | 23095               | 5MHz              | QPSK       | -                   |
|                       | 23060 to 23130    | 23095               | 10MHz             | QPSK       | -                   |
| Occupied Bandwidth    | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK/16QAM | Full RB             |
|                       | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK/16QAM | Full RB             |
|                       | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK/16QAM | Full RB             |
|                       | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK/16QAM | Full RB             |
| Peak to Average Ratio | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK/16QAM | Full RB             |
|                       | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK/16QAM | Full RB             |
|                       | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK/16QAM | Full RB             |
|                       | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK/16QAM | Full RB             |
| Band Edge             | 23017 to 23173    | 23017               | 1.4MHz            | QPSK       | 1 RB / 0 RB Offset  |
|                       |                   | 23173               |                   |            | 1 RB / 5 RB Offset  |
|                       |                   | 23017, 23173        |                   |            | 6 RB / 0 RB Offset  |
|                       | 23025 to 23165    | 23025               | 3MHz              | QPSK       | 1 RB / 0 RB Offset  |
|                       |                   | 23165               |                   |            | 1 RB / 14 RB Offset |
|                       |                   | 23025, 23165        |                   |            | 15 RB / 0 RB Offset |
|                       | 23035 to 23155    | 23035               | 5MHz              | QPSK       | 1 RB / 0 RB Offset  |
|                       |                   | 23155               |                   |            | 1 RB / 24 RB Offset |
|                       |                   | 23035, 23155        |                   |            | 25 RB / 0 RB Offset |
|                       | 23060 to 23130    | 23060               | 10MHz             | QPSK       | 1 RB / 0 RB Offset  |
|                       |                   | 23130               |                   |            | 1 RB / 49 RB Offset |
|                       |                   | 23060, 23130        |                   |            | 50 RB / 0 RB Offset |
| Conducted Emission    | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK       | 1RB / 0 RB offset   |
|                       | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK       | 1RB / 0 RB offset   |
|                       | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK       | 1RB / 0 RB offset   |
|                       | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK       | 1RB / 0 RB offset   |
| Radiated Emission     | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK       | 1RB / 0 RB offset   |
|                       | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK       | 1RB / 0 RB offset   |
|                       | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK       | 1RB / 0 RB offset   |
|                       | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK       | 1RB / 0 RB offset   |

### NOTE:

All supported modulation types were evaluated. The Worst case of QPSK was selected. Therefore, the Frequency Stability, Band Edge, Condcudeted Emission and Radiated Emission were presented under QPSK mode only.



**Test Condition:**

| Test Item                       | Environmental Conditions | Input Power (System) | Tested By    |
|---------------------------------|--------------------------|----------------------|--------------|
| ERP                             | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Frequency Stability             | 25deg. C, 60%RH          | 5Vdc                 | Jynuchun Lin |
| Occupied Bandwidth              | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Band Edge                       | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Peak to Average Ratio           | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Conducuted Emission             | 25deg. C, 60%RH          | 120Vac, 60Hz         | Jynuchun Lin |
| Radiated Emission<br>Below 1GHz | 25deg. C, 75%RH          | 120Vac, 60Hz         | Kevin Ko     |
| Radiated Emission<br>Above 1GHz | 25deg. C, 75%RH          | 120Vac, 60Hz         | Kevin Ko     |

### **3.4 EUT Operating Conditions**

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, Subpart H / L**

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

**ANSI 63.26-2015**

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

**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

For section 27.50(d)(4): Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

For section 27.50(b)(10): Portable stations (hand-held devices) operating in the 698-787 MHz band are limited to 3 watts ERP.

#### 4.1.2 Test Procedures

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

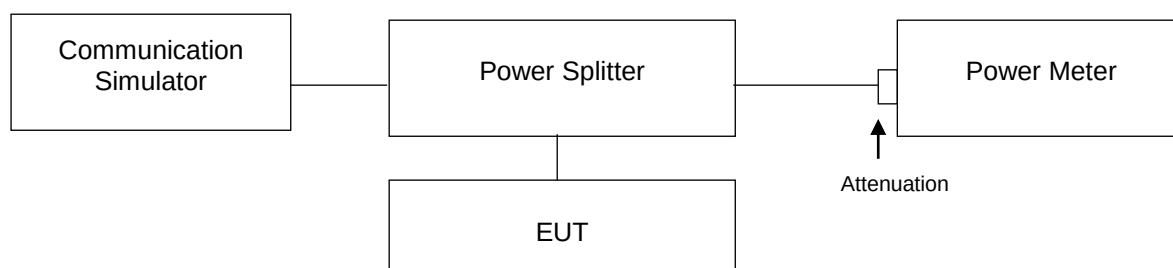
The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and difference RB size/ RB offset for difference bandwidth record the power level shown on power meter.

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

- a.  $EIRP = \text{Conducted Output power level} + \text{Antenna gain}$ .
- b. ERP power can be calculated from EIRP power by subtracting the gain of dipole,  $ERP \text{ power} = EIRP \text{ power} - 2.15\text{dBi}$ .
- c.  $ERP = \text{Conducted Output power level} + \text{Antenna gain (dBi)} - \text{Isotropically Factor (2.15dB)}$

#### 4.1.3 Test Setup

##### Conducted Power Measurement:



#### 4.1.4 Test Results

#### CONDUCTED OUTPUT POWER (dBm)

##### LTE Band 4

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 19957  | 20175  | 20393   |               | 19957  | 20175  | 20393   |               |
|           |         |           | 1710.7 | 1732.5 | 1754.3  |               | 1710.7 | 1732.5 | 1754.3  |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 1.4M  | 1       | 0         | 22.49  | 22.58  | 22.86   | 0             | 21.72  | 21.72  | 21.83   | 1             |
|           | 1       | 2         | 22.21  | 22.48  | 22.60   | 0             | 21.13  | 21.32  | 21.58   | 1             |
|           | 1       | 5         | 22.11  | 22.22  | 22.38   | 0             | 20.94  | 21.11  | 21.44   | 1             |
|           | 3       | 0         | 22.49  | 22.68  | 22.79   | 0             | 21.43  | 21.65  | 21.92   | 1             |
|           | 3       | 1         | 22.44  | 22.51  | 22.56   | 0             | 21.33  | 21.44  | 21.61   | 1             |
|           | 3       | 3         | 22.18  | 22.29  | 22.46   | 0             | 21.23  | 21.32  | 21.47   | 1             |
|           | 6       | 0         | 21.33  | 21.58  | 21.73   | 1             | 20.33  | 20.56  | 20.82   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 19965  | 20175  | 20385   |               | 19965  | 20175  | 20385   |               |
|           |         |           | 1711.5 | 1732.5 | 1753.5  |               | 1711.5 | 1732.5 | 1753.5  |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 3M    | 1       | 0         | 22.57  | 22.63  | 22.91   | 0             | 21.66  | 21.82  | 21.88   | 1             |
|           | 1       | 7         | 22.25  | 22.53  | 22.61   | 0             | 21.12  | 21.36  | 21.57   | 1             |
|           | 1       | 14        | 22.09  | 22.26  | 22.56   | 0             | 21.03  | 21.29  | 21.37   | 1             |
|           | 8       | 0         | 21.61  | 21.75  | 21.80   | 1             | 20.54  | 20.59  | 20.94   | 2             |
|           | 8       | 3         | 21.31  | 21.58  | 21.66   | 1             | 20.30  | 20.43  | 20.68   | 2             |
|           | 8       | 7         | 21.23  | 21.31  | 21.49   | 1             | 20.15  | 20.38  | 20.56   | 2             |
|           | 15      | 0         | 21.41  | 21.61  | 21.89   | 1             | 20.35  | 20.55  | 20.74   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 19975  | 20175  | 20375   |               | 19975  | 20175  | 20375   |               |
|           |         |           | 1712.5 | 1732.5 | 1752.5  |               | 1712.5 | 1732.5 | 1752.5  |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 5M    | 1       | 0         | 22.56  | 22.69  | 22.68   | 0             | 21.71  | 21.81  | 21.71   | 1             |
|           | 1       | 12        | 22.38  | 22.43  | 22.61   | 0             | 21.15  | 21.25  | 21.48   | 1             |
|           | 1       | 24        | 22.12  | 22.23  | 22.36   | 0             | 20.95  | 21.14  | 21.31   | 1             |
|           | 12      | 0         | 21.50  | 21.70  | 21.79   | 1             | 20.61  | 20.65  | 20.82   | 2             |
|           | 12      | 6         | 21.28  | 21.60  | 21.51   | 1             | 20.30  | 20.55  | 20.65   | 2             |
|           | 12      | 13        | 21.15  | 21.25  | 21.48   | 1             | 20.29  | 20.44  | 20.57   | 2             |
|           | 25      | 0         | 21.41  | 21.62  | 21.70   | 1             | 20.46  | 20.51  | 20.70   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 20000  | 20175  | 20350   |               | 20000  | 20175  | 20350   |               |
|           |         |           | 1715   | 1732.5 | 1750    |               | 1715   | 1732.5 | 1750    |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 10M   | 1       | 0         | 22.40  | 22.70  | 22.91   | 0             | 21.62  | 21.79  | 21.83   | 1             |
|           | 1       | 24        | 22.16  | 22.42  | 22.74   | 0             | 21.13  | 21.39  | 21.51   | 1             |
|           | 1       | 49        | 22.16  | 22.41  | 22.50   | 0             | 20.98  | 21.28  | 21.27   | 1             |
|           | 25      | 0         | 21.37  | 21.61  | 21.96   | 1             | 20.50  | 20.59  | 20.95   | 2             |
|           | 25      | 12        | 21.33  | 21.39  | 21.65   | 1             | 20.27  | 20.53  | 20.65   | 2             |
|           | 25      | 25        | 21.22  | 21.35  | 21.47   | 1             | 20.19  | 20.42  | 20.64   | 2             |
|           | 50      | 0         | 21.37  | 21.47  | 21.82   | 1             | 20.47  | 20.49  | 20.79   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 20025  | 20175  | 20325   |               | 20025  | 20175  | 20325   |               |
|           |         |           | 1717.5 | 1732.5 | 1747.5  |               | 1717.5 | 1732.5 | 1747.5  |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 15M   | 1       | 0         | 22.63  | 22.79  | 22.94   | 0             | 21.71  | 21.95  | 21.92   | 1             |
|           | 1       | 37        | 22.31  | 22.47  | 22.72   | 0             | 21.18  | 21.33  | 21.57   | 1             |
|           | 1       | 74        | 22.14  | 22.31  | 22.59   | 0             | 21.04  | 21.29  | 21.43   | 1             |
|           | 36      | 0         | 21.55  | 21.70  | 21.94   | 1             | 20.56  | 20.83  | 20.91   | 2             |
|           | 36      | 19        | 21.37  | 21.61  | 21.71   | 1             | 20.36  | 20.51  | 20.76   | 2             |
|           | 36      | 39        | 21.18  | 21.44  | 21.60   | 1             | 20.35  | 20.43  | 20.69   | 2             |
|           | 75      | 0         | 21.44  | 21.60  | 21.79   | 1             | 20.44  | 20.64  | 20.80   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 20050  | 20175  | 20300   |               | 20050  | 20175  | 20300   |               |
|           |         |           | 1720   | 1732.5 | 1745    |               | 1720   | 1732.5 | 1745    |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 20M   | 1       | 0         | 22.63  | 22.80  | 22.99   | 0             | 21.78  | 21.95  | 21.94   | 1             |
|           | 1       | 50        | 22.38  | 22.55  | 22.74   | 0             | 21.25  | 21.42  | 21.61   | 1             |
|           | 1       | 99        | 22.24  | 22.41  | 22.60   | 0             | 21.13  | 21.30  | 21.49   | 1             |
|           | 50      | 0         | 21.62  | 21.79  | 21.98   | 1             | 20.66  | 20.83  | 20.99   | 2             |
|           | 50      | 25        | 21.45  | 21.62  | 21.81   | 1             | 20.42  | 20.59  | 20.78   | 2             |
|           | 50      | 50        | 21.28  | 21.45  | 21.64   | 1             | 20.35  | 20.52  | 20.71   | 2             |
|           | 100     | 0         | 21.53  | 21.70  | 21.89   | 1             | 20.49  | 20.66  | 20.85   | 2             |

## LTE Band 12

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 23017  | 23095  | 23173   |               | 23017  | 23095  | 23173   |               |
|           |         |           | 699.7  | 707.5  | 715.3   |               | 699.7  | 707.5  | 715.3   |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 12 / 1.4M | 1       | 0         | 23.03  | 23.30  | 23.29   | 0             | 21.90  | 22.11  | 22.08   | 1             |
|           | 1       | 2         | 22.80  | 23.09  | 22.97   | 0             | 21.49  | 21.53  | 21.62   | 1             |
|           | 1       | 5         | 22.87  | 23.07  | 23.00   | 0             | 21.65  | 21.89  | 21.94   | 1             |
|           | 3       | 0         | 21.75  | 21.90  | 21.91   | 0             | 20.64  | 20.86  | 20.90   | 1             |
|           | 3       | 1         | 21.75  | 21.94  | 21.96   | 0             | 20.89  | 21.11  | 21.07   | 1             |
|           | 3       | 3         | 21.78  | 21.97  | 21.84   | 0             | 20.83  | 21.12  | 21.04   | 1             |
|           | 6       | 0         | 21.62  | 21.96  | 21.89   | 1             | 20.69  | 20.90  | 20.92   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 23025  | 23095  | 23165   |               | 23025  | 23095  | 23165   |               |
|           |         |           | 700.5  | 707.5  | 714.5   |               | 700.5  | 707.5  | 714.5   |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 12 / 3M   | 1       | 0         | 23.09  | 23.25  | 23.27   | 0             | 21.84  | 22.02  | 22.14   | 1             |
|           | 1       | 7         | 22.74  | 23.00  | 22.98   | 0             | 21.32  | 21.58  | 21.54   | 1             |
|           | 1       | 14        | 23.00  | 23.21  | 23.13   | 0             | 21.71  | 21.88  | 22.01   | 1             |
|           | 8       | 0         | 21.83  | 21.92  | 22.05   | 1             | 20.59  | 20.84  | 20.94   | 2             |
|           | 8       | 3         | 21.64  | 21.85  | 21.93   | 1             | 21.02  | 21.07  | 21.07   | 2             |
|           | 8       | 7         | 21.70  | 21.79  | 21.91   | 1             | 20.77  | 21.05  | 21.20   | 2             |
|           | 15      | 0         | 21.71  | 21.83  | 21.89   | 1             | 20.62  | 20.93  | 20.96   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 23035  | 23095  | 23155   |               | 23035  | 23095  | 23155   |               |
|           |         |           | 701.5  | 707.5  | 713.5   |               | 701.5  | 707.5  | 713.5   |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 12 / 5M   | 1       | 0         | 23.17  | 23.37  | 23.31   | 0             | 21.95  | 22.11  | 22.10   | 1             |
|           | 1       | 12        | 22.85  | 23.05  | 23.17   | 0             | 21.49  | 21.72  | 21.75   | 1             |
|           | 1       | 24        | 23.05  | 23.24  | 23.26   | 0             | 21.79  | 21.95  | 21.99   | 1             |
|           | 12      | 0         | 21.85  | 22.03  | 22.04   | 1             | 20.73  | 20.95  | 20.92   | 2             |
|           | 12      | 6         | 21.84  | 22.04  | 21.97   | 1             | 20.94  | 21.23  | 21.19   | 2             |
|           | 12      | 13        | 21.74  | 21.94  | 21.99   | 1             | 20.95  | 21.13  | 21.18   | 2             |
|           | 25      | 0         | 21.72  | 21.99  | 22.03   | 1             | 20.75  | 20.95  | 21.06   | 2             |

| Band / BW | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|-----------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|           |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|           |         |           | 23060  | 23095  | 23130   |               | 23060  | 23095  | 23130   |               |
|           |         |           | 704    | 707.5  | 711     |               | 704    | 707.5  | 711     |               |
|           |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 12 / 10M  | 1       | 0         | 23.17  | 23.37  | 23.40   | 0             | 21.97  | 22.17  | 22.20   | 1             |
|           | 1       | 24        | 22.95  | 23.15  | 23.18   | 0             | 21.54  | 21.74  | 21.77   | 1             |
|           | 1       | 49        | 23.05  | 23.25  | 23.28   | 0             | 21.84  | 22.04  | 22.07   | 1             |
|           | 25      | 0         | 21.87  | 22.07  | 22.10   | 1             | 20.75  | 20.95  | 20.98   | 2             |
|           | 25      | 12        | 21.84  | 22.04  | 22.07   | 1             | 21.03  | 21.23  | 21.26   | 2             |
|           | 25      | 25        | 21.83  | 22.03  | 22.06   | 1             | 20.98  | 21.18  | 21.21   | 2             |
|           | 50      | 0         | 21.80  | 22.00  | 22.03   | 1             | 20.83  | 21.03  | 21.06   | 2             |



## EIRP / ERP POWER

### LTE Band 4

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 19957  | 20175  | 20393   |               | 19957  | 20175  | 20393   |               |
|                      |         |           | 1710.7 | 1732.5 | 1754.3  |               | 1710.7 | 1732.5 | 1754.3  |               |
| 4 / 1.4M             | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)           |         |           | 22.49  | 22.58  | 22.86   |               | 21.72  | 21.72  | 21.83   |               |
| Max EIRP Power (dBm) |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
|                      |         |           | 23.97  | 24.06  | 24.34   |               | 23.20  | 23.20  | 23.31   |               |

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 19965  | 20175  | 20385   |               | 19965  | 20175  | 20385   |               |
|                      |         |           | 1711.5 | 1732.5 | 1753.5  |               | 1711.5 | 1732.5 | 1753.5  |               |
| 4 / 3M               | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)           |         |           | 22.57  | 22.63  | 22.91   |               | 21.66  | 21.82  | 21.88   |               |
| Max EIRP Power (dBm) |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
|                      |         |           | 24.05  | 24.11  | 24.39   |               | 23.14  | 23.30  | 23.36   |               |

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 19975  | 20175  | 20375   |               | 19975  | 20175  | 20375   |               |
|                      |         |           | 1712.5 | 1732.5 | 1752.5  |               | 1712.5 | 1732.5 | 1752.5  |               |
| 4 / 5M               | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)           |         |           | 22.56  | 22.69  | 22.68   |               | 21.71  | 21.81  | 21.71   |               |
| Max EIRP Power (dBm) |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
|                      |         |           | 24.04  | 24.17  | 24.16   |               | 23.19  | 23.29  | 23.19   |               |

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 20000  | 20175  | 20350   |               | 20000  | 20175  | 20350   |               |
|                      |         |           | 1715   | 1732.5 | 1750    |               | 1715   | 1732.5 | 1750    |               |
| 4 / 10M              | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)           |         |           | 22.40  | 22.70  | 22.91   |               | 21.62  | 21.79  | 21.83   |               |
| Max EIRP Power (dBm) |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
|                      |         |           | 23.88  | 24.18  | 24.39   |               | 23.10  | 23.27  | 23.31   |               |

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 20025  | 20175  | 20325   |               | 20025  | 20175  | 20325   |               |
|                      |         |           | 1717.5 | 1732.5 | 1747.5  |               | 1717.5 | 1732.5 | 1747.5  |               |
|                      |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 15M              | 1       | 0         | 22.63  | 22.79  | 22.94   | 0             | 21.71  | 21.95  | 21.92   | 1             |
| Gain (dBi)           |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
| Max EIRP Power (dBm) |         |           | 24.11  | 24.27  | 24.42   |               | 23.19  | 23.43  | 23.40   |               |

| Band / BW            | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                      |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                      |         |           | 20050  | 20175  | 20300   |               | 20050  | 20175  | 20300   |               |
|                      |         |           | 1720   | 1732.5 | 1745    |               | 1720   | 1732.5 | 1745    |               |
|                      |         |           | MHz    | MHz    | MHz     |               | MHz    | MHz    | MHz     |               |
| 4 / 20M              | 1       | 0         | 22.63  | 22.80  | 22.99   | 0             | 21.78  | 21.95  | 21.94   | 1             |
| Gain (dBi)           |         |           | 1.48   | 1.48   | 1.48    |               | 1.48   | 1.48   | 1.48    |               |
| Max EIRP Power (dBm) |         |           | 24.11  | 24.28  | 24.47   |               | 23.26  | 23.43  | 23.42   |               |

## LTE Band 12

| Band / BW                  | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                            |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                            |         |           | 23017  | 23095  | 23173   |               | 23017  | 23095  | 23173   |               |
|                            |         |           | 699.7  | 707.5  | 715.3   |               | 699.7  | 707.5  | 715.3   |               |
| 12 / 1.4M                  | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)                 |         |           | 23.03  | 23.30  | 23.29   |               | 21.90  | 22.11  | 22.08   |               |
| Isotropically Factor (dBc) |         |           | 2.87   | 2.87   | 2.87    |               | 2.87   | 2.87   | 2.87    |               |
| Max ERP Power (dBm)        |         |           | 2.15   | 2.15   | 2.15    |               | 2.15   | 2.15   | 2.15    |               |
|                            |         |           | 23.75  | 24.02  | 24.01   |               | 22.62  | 22.83  | 22.80   |               |

| Band / BW                  | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                            |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                            |         |           | 23025  | 23095  | 23165   |               | 23025  | 23095  | 23165   |               |
|                            |         |           | 700.5  | 707.5  | 714.5   |               | 700.5  | 707.5  | 714.5   |               |
| 12 / 3M                    | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)                 |         |           | 23.09  | 23.25  | 23.27   |               | 21.84  | 22.02  | 22.14   |               |
| Isotropically Factor (dBc) |         |           | 2.87   | 2.87   | 2.87    |               | 2.87   | 2.87   | 2.87    |               |
| Max ERP Power (dBm)        |         |           | 2.15   | 2.15   | 2.15    |               | 2.15   | 2.15   | 2.15    |               |
|                            |         |           | 23.81  | 23.97  | 23.99   |               | 22.56  | 22.74  | 22.86   |               |

| Band / BW                  | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                            |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                            |         |           | 23035  | 23095  | 23155   |               | 23035  | 23095  | 23155   |               |
|                            |         |           | 701.5  | 707.5  | 713.5   |               | 701.5  | 707.5  | 713.5   |               |
| 12 / 5M                    | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)                 |         |           | 23.17  | 23.37  | 23.31   |               | 21.95  | 22.11  | 22.10   |               |
| Isotropically Factor (dBc) |         |           | 2.87   | 2.87   | 2.87    |               | 2.87   | 2.87   | 2.87    |               |
| Max ERP Power (dBm)        |         |           | 2.15   | 2.15   | 2.15    |               | 2.15   | 2.15   | 2.15    |               |
|                            |         |           | 23.89  | 24.09  | 24.03   |               | 22.67  | 22.83  | 22.82   |               |

| Band / BW                  | RB Size | RB Offset | QPSK   |        |         | 3GPP MPR (dB) | 16QAM  |        |         | 3GPP MPR (dB) |
|----------------------------|---------|-----------|--------|--------|---------|---------------|--------|--------|---------|---------------|
|                            |         |           | Low CH | Mid CH | High CH |               | Low CH | Mid CH | High CH |               |
|                            |         |           | 23060  | 23095  | 23130   |               | 23060  | 23095  | 23130   |               |
|                            |         |           | 704    | 707.5  | 711     |               | 704    | 707.5  | 711     |               |
| 12 / 10M                   | 1       | 0         | MHz    | MHz    | MHz     | 0             | MHz    | MHz    | MHz     | 1             |
| Gain (dBi)                 |         |           | 23.17  | 23.37  | 23.40   |               | 21.97  | 22.17  | 22.20   |               |
| Isotropically Factor (dBc) |         |           | 2.87   | 2.87   | 2.87    |               | 2.87   | 2.87   | 2.87    |               |
| Max ERP Power (dBm)        |         |           | 2.15   | 2.15   | 2.15    |               | 2.15   | 2.15   | 2.15    |               |
|                            |         |           | 23.89  | 24.09  | 24.12   |               | 22.69  | 22.89  | 22.92   |               |

## 4.2 Modulation characteristics Measurement

### 4.2.1 Limits of Modulation characteristics

N/A

### 4.2.2 Test Procedure

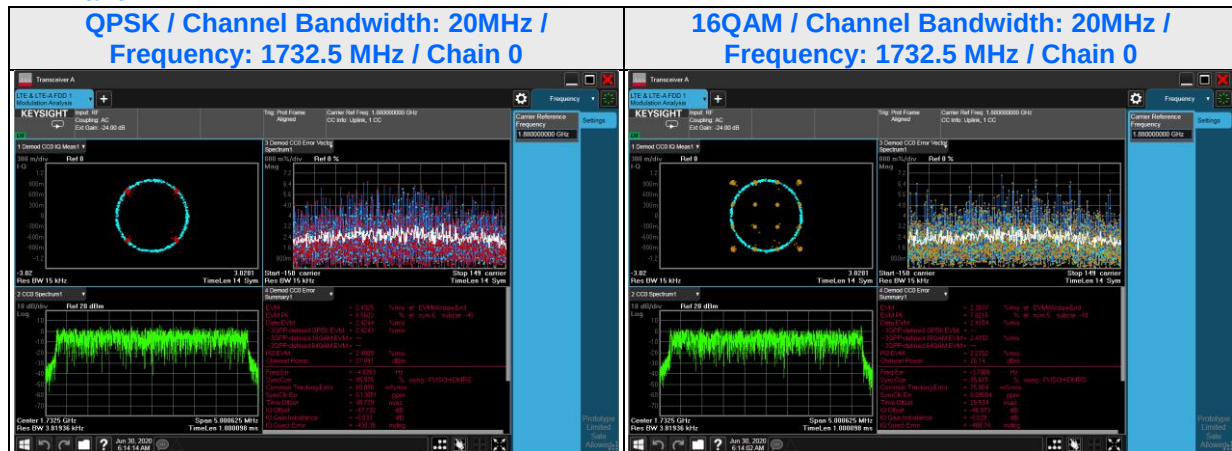
Connect the EUT to Communication Simulator via the antenna connector. The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

### 4.2.3 Test Setup

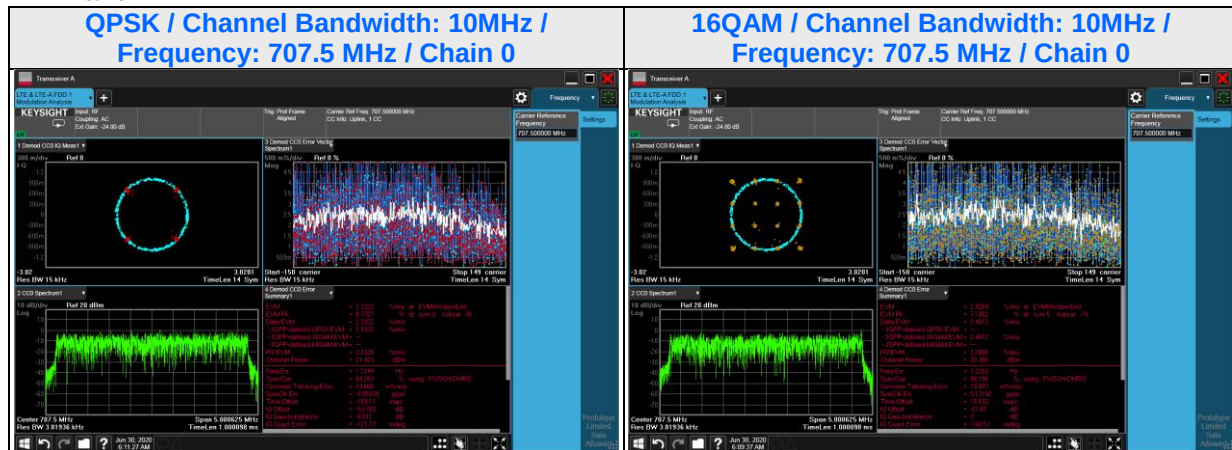


## 4.2.4 Test Results

### LTE Band 4



### LTE Band 12



### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

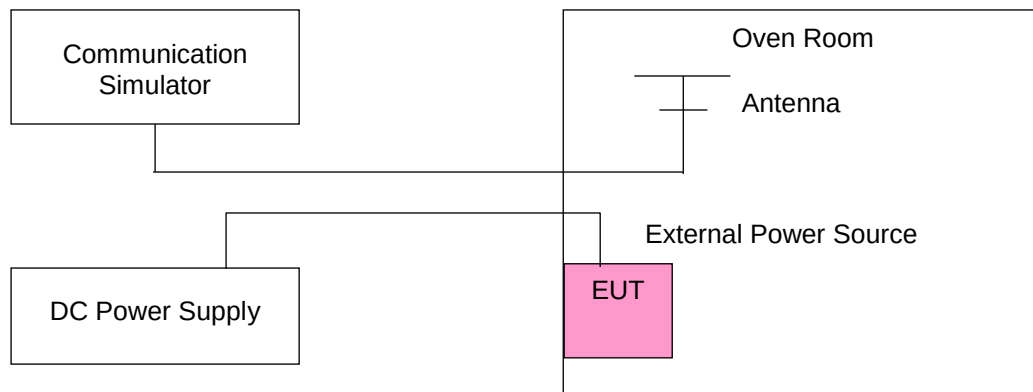
According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT  $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$ .

#### 4.3.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

#### 4.3.3 Test Setup



#### 4.3.4 Test Results

##### LTE Band 4

| Voltage<br>(Volts) | Frequency Error (ppm) |       |       |       |       |       | Limit (ppm) |
|--------------------|-----------------------|-------|-------|-------|-------|-------|-------------|
|                    | 1.4MHz                | 3MHz  | 5MHz  | 10MHz | 15MHz | 20MHz |             |
| 2.805              | 0.026                 | 0.028 | 0.021 | 0.023 | 0.020 | 0.013 | 2.5         |
| 3.795              | 0.023                 | 0.014 | 0.013 | 0.025 | 0.013 | 0.018 | 2.5         |

| Temp.<br>(°C) | Frequency Error (ppm) |       |       |       |       |       | Limit (ppm) |
|---------------|-----------------------|-------|-------|-------|-------|-------|-------------|
|               | 1.4MHz                | 3MHz  | 5MHz  | 10MHz | 15MHz | 20MHz |             |
| 50            | 0.018                 | 0.021 | 0.026 | 0.026 | 0.014 | 0.018 | 2.5         |
| 40            | 0.022                 | 0.018 | 0.013 | 0.020 | 0.028 | 0.016 | 2.5         |
| 30            | 0.018                 | 0.013 | 0.012 | 0.023 | 0.024 | 0.025 | 2.5         |
| 20            | 0.017                 | 0.019 | 0.015 | 0.018 | 0.023 | 0.020 | 2.5         |
| 10            | 0.016                 | 0.023 | 0.018 | 0.012 | 0.025 | 0.017 | 2.5         |
| 0             | 0.020                 | 0.025 | 0.022 | 0.016 | 0.028 | 0.019 | 2.5         |
| -10           | 0.013                 | 0.022 | 0.014 | 0.026 | 0.025 | 0.014 | 2.5         |
| -20           | 0.012                 | 0.018 | 0.023 | 0.028 | 0.012 | 0.012 | 2.5         |
| -30           | 0.017                 | 0.017 | 0.018 | 0.019 | 0.018 | 0.026 | 2.5         |

### LTE Band 12

| Voltage<br>(Volts) | Frequency Error (ppm) |       |       |       | Limit (ppm) |
|--------------------|-----------------------|-------|-------|-------|-------------|
|                    | 1.4MHz                | 3MHz  | 5MHz  | 10MHz |             |
| 2.805              | 0.068                 | 0.038 | 0.038 | 0.068 | 2.5         |
| 3.795              | 0.040                 | 0.035 | 0.047 | 0.052 | 2.5         |

| Temp. (°C) | Frequency Error (ppm) |       |       |       | Limit (ppm) |
|------------|-----------------------|-------|-------|-------|-------------|
|            | 1.4MHz                | 3MHz  | 5MHz  | 10MHz |             |
| 50         | 0.037                 | 0.028 | 0.037 | 0.037 | 2.5         |
| 40         | 0.069                 | 0.034 | 0.051 | 0.069 | 2.5         |
| 30         | 0.052                 | 0.062 | 0.052 | 0.044 | 2.5         |
| 20         | 0.044                 | 0.066 | 0.031 | 0.035 | 2.5         |
| 10         | 0.055                 | 0.068 | 0.040 | 0.037 | 2.5         |
| 0          | 0.047                 | 0.054 | 0.066 | 0.041 | 2.5         |
| -10        | 0.031                 | 0.041 | 0.042 | 0.055 | 2.5         |
| -20        | 0.047                 | 0.035 | 0.047 | 0.033 | 2.5         |
| -30        | 0.055                 | 0.037 | 0.051 | 0.059 | 2.5         |



## 4.4 Emission Bandwidth Measurement

### 4.4.1 Limits of Emission Bandwidth Measurement

#### -26dB Bandwidth

According to FCC 27.53 specified that emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

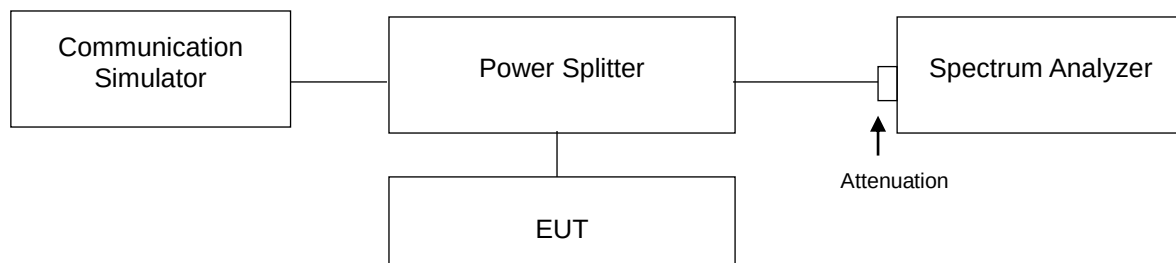
#### Occupied Bandwidth

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 4.4.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with  $RBW \geq 1\% \times OBW$  and  $VBW \geq 3 \times VBW$ .

### 4.4.3 Test Setup

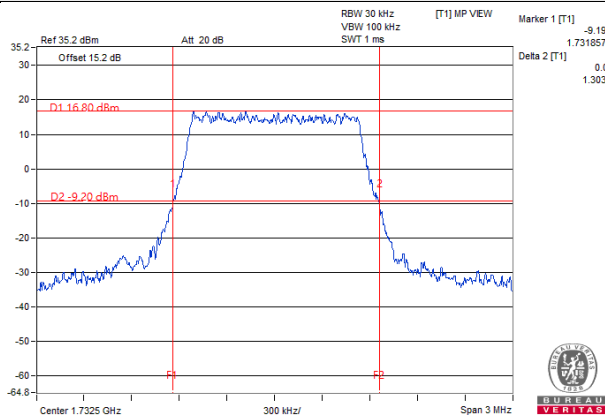


#### 4.4.4 Test Results (-26dB Bandwidth)

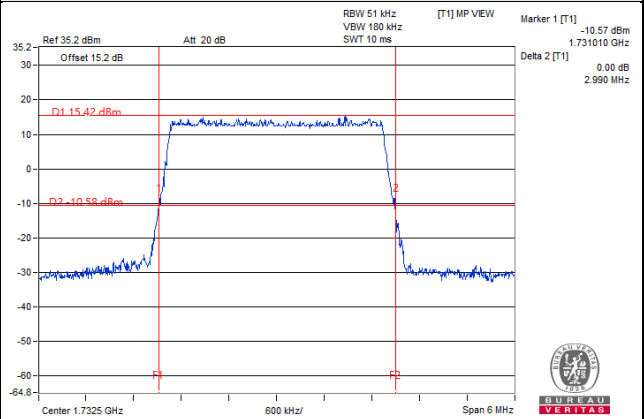
| LTE Band 4               |                 |                       |       |                         |                 |                       |       |
|--------------------------|-----------------|-----------------------|-------|-------------------------|-----------------|-----------------------|-------|
| Channel Bandwidth 1.4MHz |                 |                       |       | Channel Bandwidth 3MHz  |                 |                       |       |
| Channel                  | Frequency (MHz) | -26dB Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | -26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                  | 16QAM |                         |                 | QPSK                  | 16QAM |
| 19957                    | 1710.7          | 1.29                  | 1.29  | 19965                   | 1711.5          | 2.97                  | 2.95  |
| 20175                    | 1732.5          | 1.30                  | 1.28  | 20175                   | 1732.5          | 2.99                  | 2.97  |
| 20393                    | 1754.3          | 1.29                  | 1.30  | 20385                   | 1753.5          | 2.97                  | 2.98  |
| Channel Bandwidth 5MHz   |                 |                       |       | Channel Bandwidth 10MHz |                 |                       |       |
| Channel                  | Frequency (MHz) | -26dB Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | -26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                  | 16QAM |                         |                 | QPSK                  | 16QAM |
| 19975                    | 1712.5          | 5.01                  | 5.00  | 20000                   | 1715            | 9.85                  | 9.89  |
| 20175                    | 1732.5          | 5.03                  | 4.99  | 20175                   | 1732.5          | 9.89                  | 9.93  |
| 20375                    | 1752.5          | 5.04                  | 5.01  | 20350                   | 1750            | 9.89                  | 9.91  |
| Channel Bandwidth 15MHz  |                 |                       |       | Channel Bandwidth 20MHz |                 |                       |       |
| Channel                  | Frequency (MHz) | -26dB Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | -26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                  | 16QAM |                         |                 | QPSK                  | 16QAM |
| 20025                    | 1717.5          | 14.73                 | 14.75 | 20050                   | 1720            | 19.42                 | 19.45 |
| 20175                    | 1732.5          | 14.74                 | 14.74 | 20175                   | 1732.5          | 19.51                 | 19.55 |
| 20325                    | 1747.5          | 14.70                 | 14.74 | 20300                   | 1745            | 19.45                 | 19.54 |

## Spectrum Plot of Worst Value

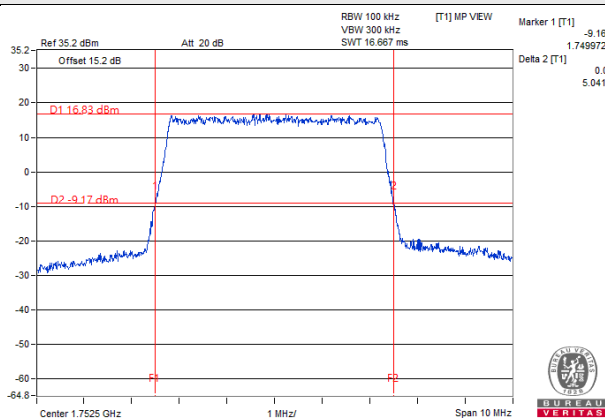
### 1.4MHz / QPSK



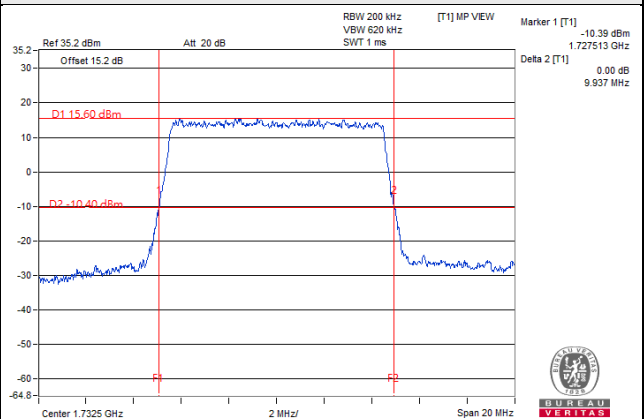
### 3MHz / QPSK



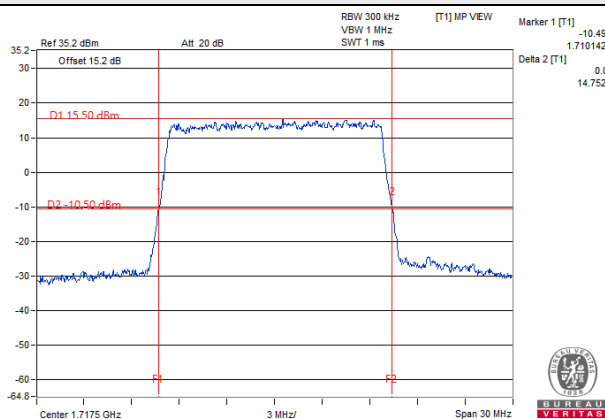
### 5MHz / QPSK



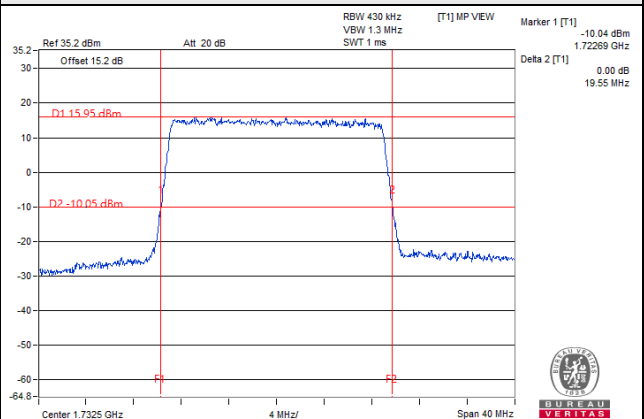
### 10MHz / 16QAM



### 15MHz / 16QAM



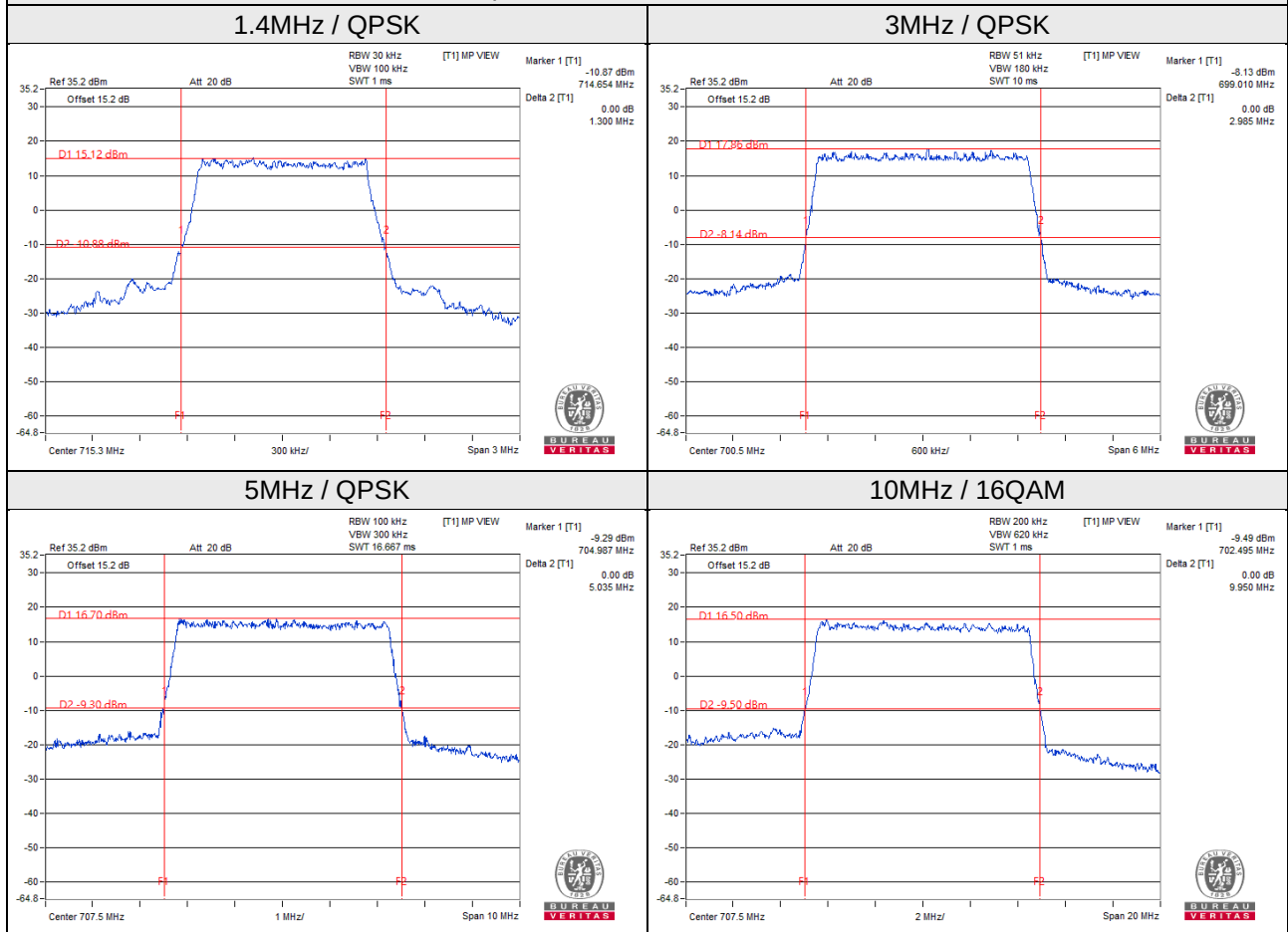
### 20MHz / QPSK



### LTE Band 12

| Channel Bandwidth 1.4MHz |                 |                       |       | Channel Bandwidth 3MHz  |                 |                       |       |
|--------------------------|-----------------|-----------------------|-------|-------------------------|-----------------|-----------------------|-------|
| Channel                  | Frequency (MHz) | -26dB Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | -26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                  | 16QAM |                         |                 | QPSK                  | 16QAM |
| 23017                    | 699.7           | 1.29                  | 1.28  | 23025                   | 700.5           | 2.98                  | 2.96  |
| 23095                    | 707.5           | 1.29                  | 1.28  | 23095                   | 707.5           | 2.98                  | 2.97  |
| 23173                    | 715.3           | 1.30                  | 1.29  | 23165                   | 714.5           | 2.97                  | 2.96  |
| Channel Bandwidth 5MHz   |                 |                       |       | Channel Bandwidth 10MHz |                 |                       |       |
| Channel                  | Frequency (MHz) | -26dB Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | -26dB Bandwidth (MHz) |       |
|                          |                 | QPSK                  | 16QAM |                         |                 | QPSK                  | 16QAM |
| 23035                    | 701.5           | 5.02                  | 4.99  | 23060                   | 704             | 9.86                  | 9.91  |
| 23095                    | 707.5           | 5.03                  | 4.99  | 23095                   | 707.5           | 9.91                  | 9.95  |
| 23155                    | 713.5           | 5.02                  | 4.99  | 23130                   | 711             | 9.85                  | 9.90  |

### Spectrum Plot of Worst Value

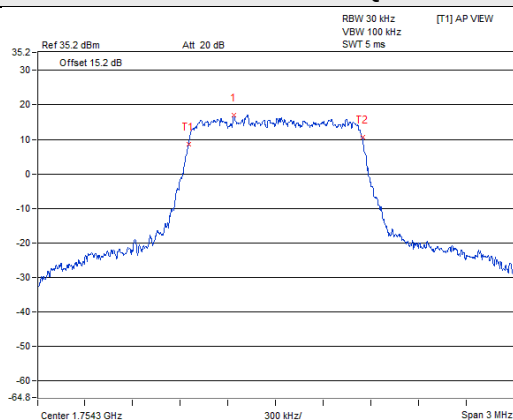


#### 4.4.5 Test Results (Occupied Bandwidth)

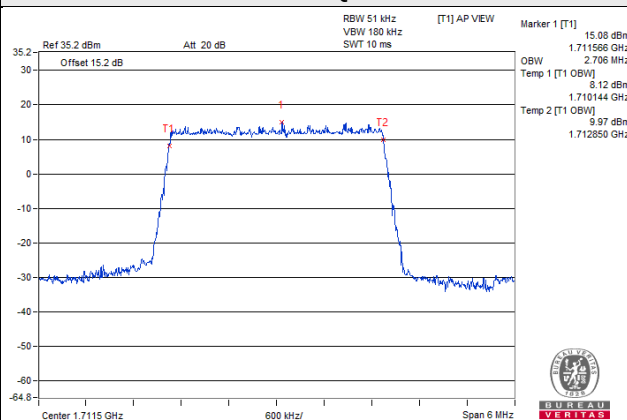
| LTE Band 4               |                 |                          |       |                         |                 |                          |       |
|--------------------------|-----------------|--------------------------|-------|-------------------------|-----------------|--------------------------|-------|
| Channel Bandwidth 1.4MHz |                 |                          |       | Channel Bandwidth 3MHz  |                 |                          |       |
| Channel                  | Frequency (MHz) | Occupied Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | Occupied Bandwidth (MHz) |       |
|                          |                 | QPSK                     | 16QAM |                         |                 | QPSK                     | 16QAM |
| 19957                    | 1710.7          | 1.08                     | 1.09  | 19965                   | 1711.5          | 2.70                     | 2.68  |
| 20175                    | 1732.5          | 1.08                     | 1.09  | 20175                   | 1732.5          | 2.69                     | 2.68  |
| 20393                    | 1754.3          | 1.09                     | 1.10  | 20385                   | 1753.5          | 2.70                     | 2.68  |
| Channel Bandwidth 5MHz   |                 |                          |       | Channel Bandwidth 10MHz |                 |                          |       |
| Channel                  | Frequency (MHz) | Occupied Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | Occupied Bandwidth (MHz) |       |
|                          |                 | QPSK                     | 16QAM |                         |                 | QPSK                     | 16QAM |
| 19975                    | 1712.5          | 4.51                     | 4.51  | 20000                   | 1715            | 8.98                     | 8.98  |
| 20175                    | 1732.5          | 4.51                     | 4.52  | 20175                   | 1732.5          | 9.02                     | 9.00  |
| 20375                    | 1752.5          | 4.51                     | 4.52  | 20350                   | 1750            | 9.00                     | 9.00  |
| Channel Bandwidth 15MHz  |                 |                          |       | Channel Bandwidth 20MHz |                 |                          |       |
| Channel                  | Frequency (MHz) | Occupied Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | Occupied Bandwidth (MHz) |       |
|                          |                 | QPSK                     | 16QAM |                         |                 | QPSK                     | 16QAM |
| 20025                    | 1717.5          | 13.47                    | 13.44 | 20050                   | 1720            | 17.96                    | 17.88 |
| 20175                    | 1732.5          | 13.50                    | 13.50 | 20175                   | 1732.5          | 18.04                    | 17.92 |
| 20325                    | 1747.5          | 13.50                    | 13.47 | 20300                   | 1745            | 18.04                    | 17.96 |

## Spectrum Plot of Worst Value

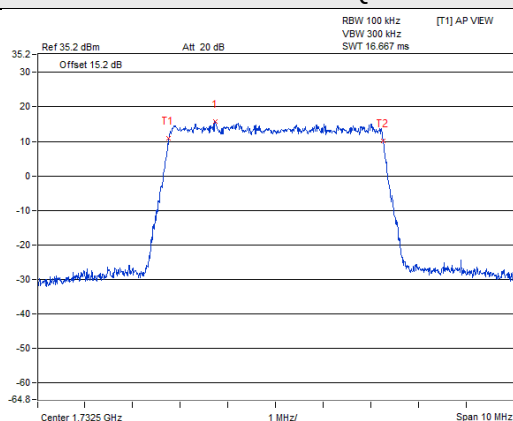
### 1.4MHz / 16QAM



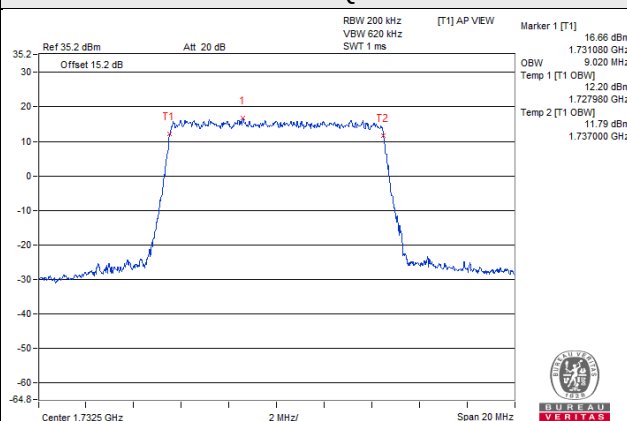
### 3MHz / QPSK



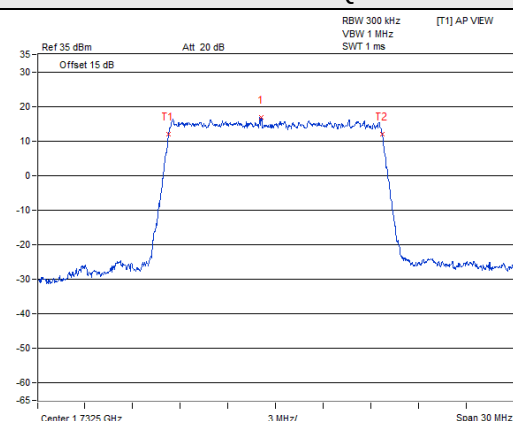
### 5MHz / 16QAM



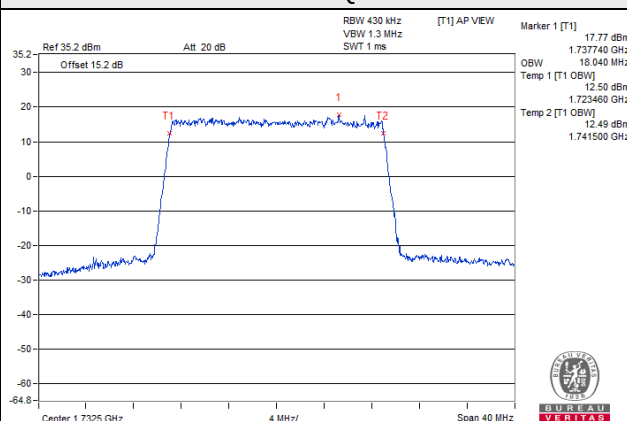
### 10MHz / QPSK



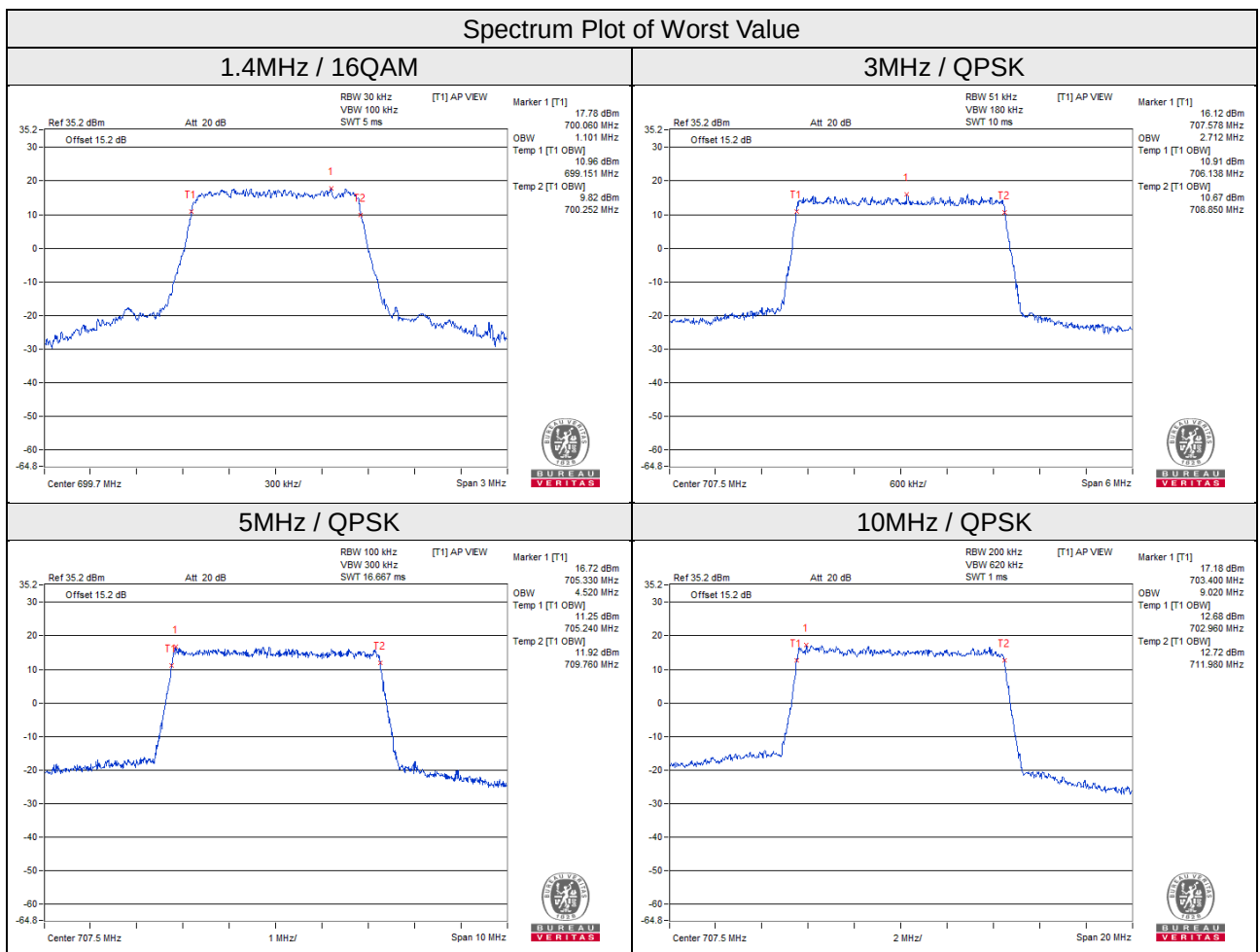
### 15MHz / QPSK



### 20MHz / QPSK



| LTE Band 12              |                 |                          |       |                         |                 |                          |       |
|--------------------------|-----------------|--------------------------|-------|-------------------------|-----------------|--------------------------|-------|
| Channel Bandwidth 1.4MHz |                 |                          |       | Channel Bandwidth 3MHz  |                 |                          |       |
| Channel                  | Frequency (MHz) | Occupied Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | Occupied Bandwidth (MHz) |       |
|                          |                 | QPSK                     | 16QAM |                         |                 | QPSK                     | 16QAM |
| 23017                    | 699.7           | 1.09                     | 1.10  | 23025                   | 700.5           | 2.70                     | 2.68  |
| 23095                    | 707.5           | 1.09                     | 1.10  | 23095                   | 707.5           | 2.71                     | 2.68  |
| 23173                    | 715.3           | 1.09                     | 1.10  | 23165                   | 714.5           | 2.70                     | 2.69  |
| Channel Bandwidth 5MHz   |                 |                          |       | Channel Bandwidth 10MHz |                 |                          |       |
| Channel                  | Frequency (MHz) | Occupied Bandwidth (MHz) |       | Channel                 | Frequency (MHz) | Occupied Bandwidth (MHz) |       |
|                          |                 | QPSK                     | 16QAM |                         |                 | QPSK                     | 16QAM |
| 23035                    | 701.5           | 4.50                     | 4.52  | 23060                   | 704             | 9.00                     | 9.00  |
| 23095                    | 707.5           | 4.52                     | 4.51  | 23095                   | 707.5           | 9.02                     | 9.00  |
| 23155                    | 713.5           | 4.51                     | 4.52  | 23130                   | 711             | 8.98                     | 8.98  |



## **4.5 Channel Edge Measurement**

### **4.5.1 Limits of Channel Edge Measurement**

#### **For Subpart L : LTE Band 4**

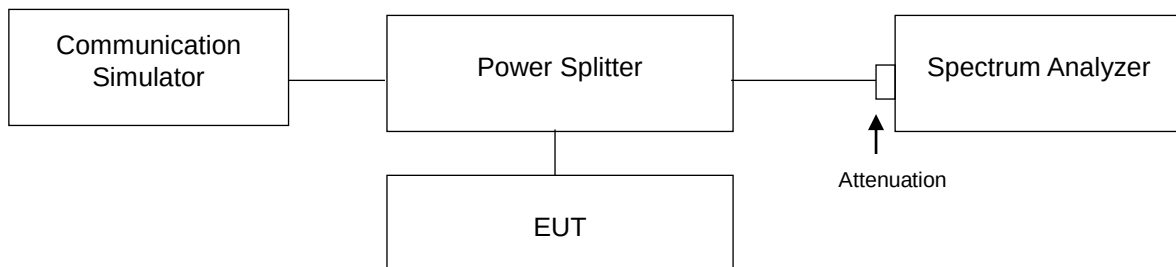
According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

#### **For Subpart H : LTE Band 12**

According to FCC 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.



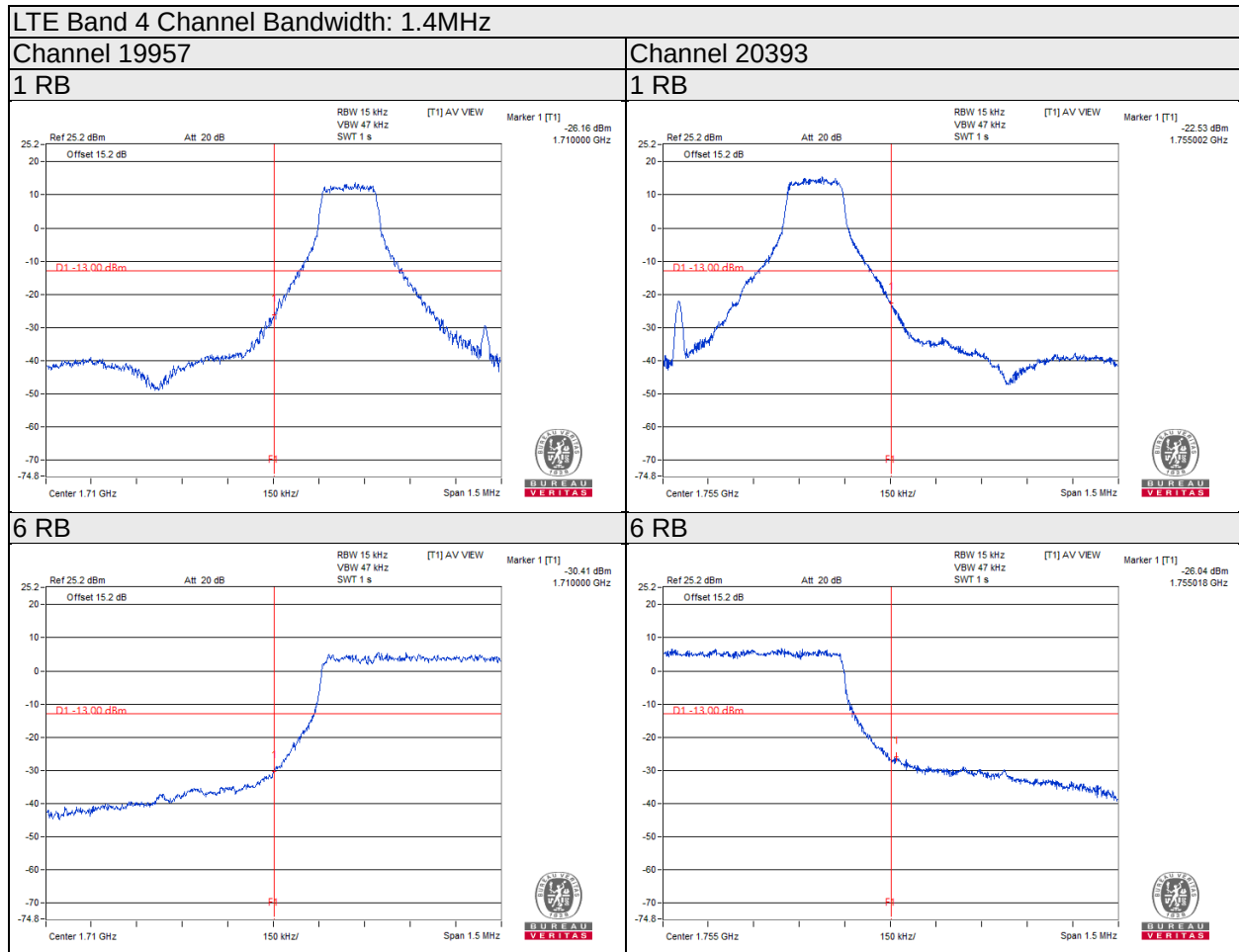
#### 4.5.2 Test Setup



#### 4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% emission bandwidth and VB of the spectrum is  $\geq 3 \times \text{RB}$ .
- Record the max trace plot into the test report.

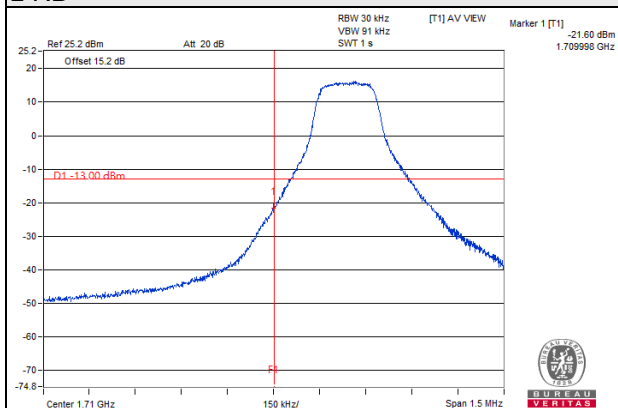
#### 4.5.4 Test Results



# LTE Band 4 Channel Bandwidth: 3MHz

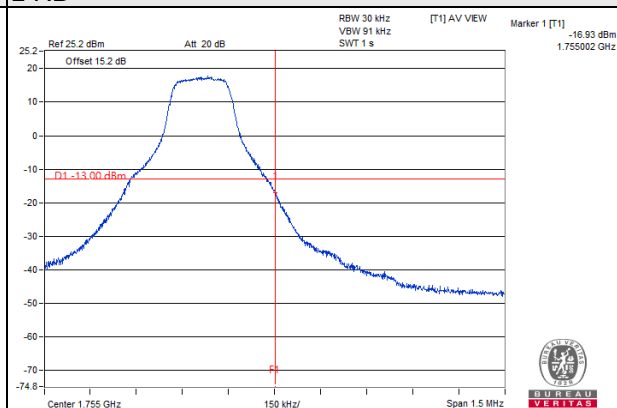
## Channel 19965

### 1 RB

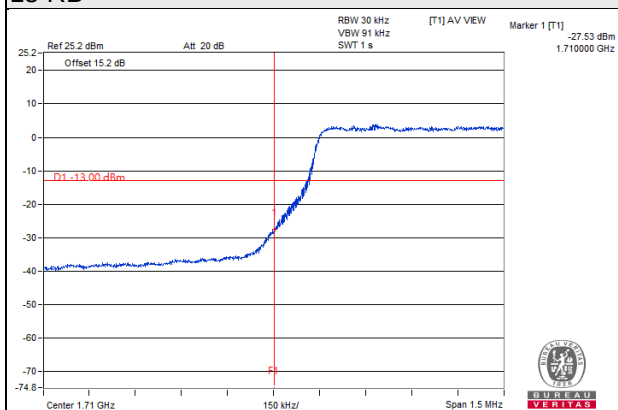


## Channel 20385

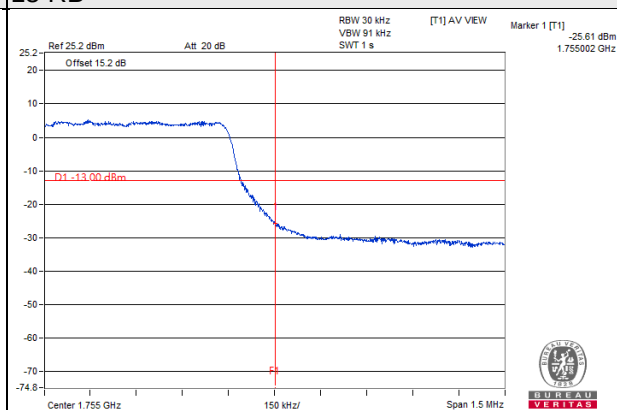
### 1 RB



### 15 RB



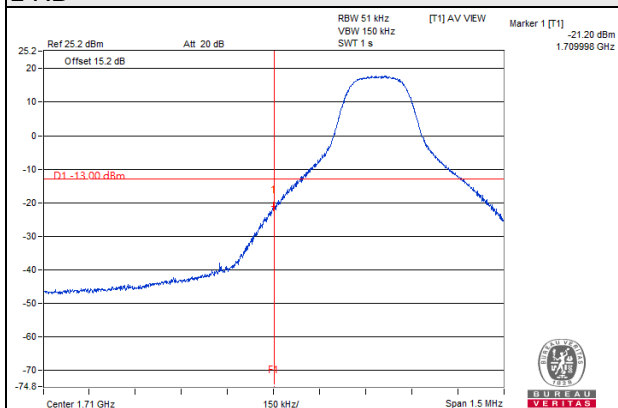
### 15 RB



# LTE Band 4 Channel Bandwidth: 5MHz

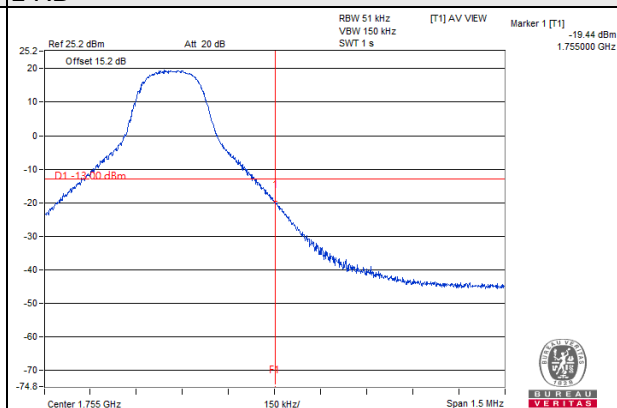
## Channel 19975

### 1 RB

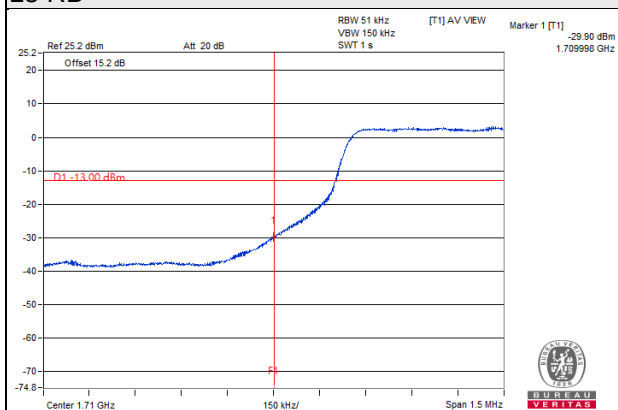


## Channel 20375

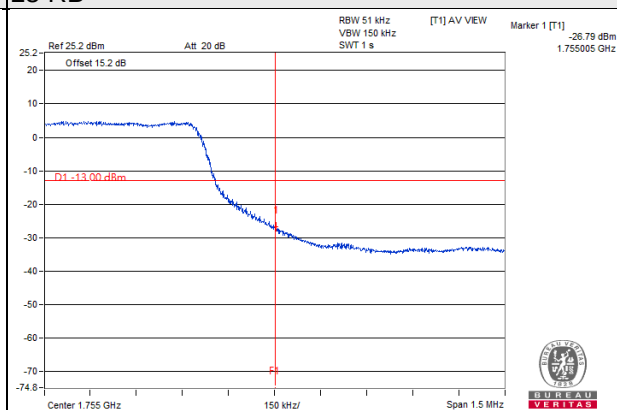
### 1 RB



### 25 RB



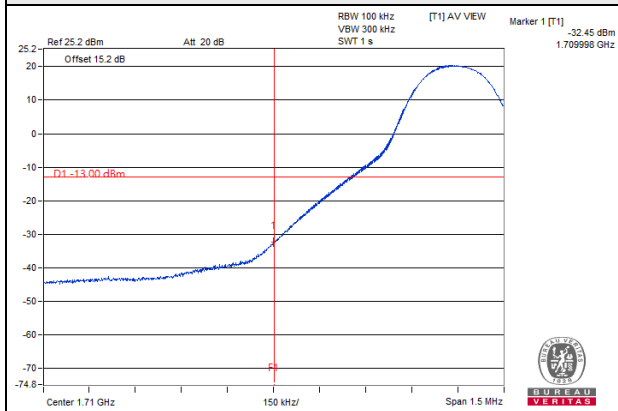
### 25 RB



# LTE Band 4 Channel Bandwidth: 10MHz

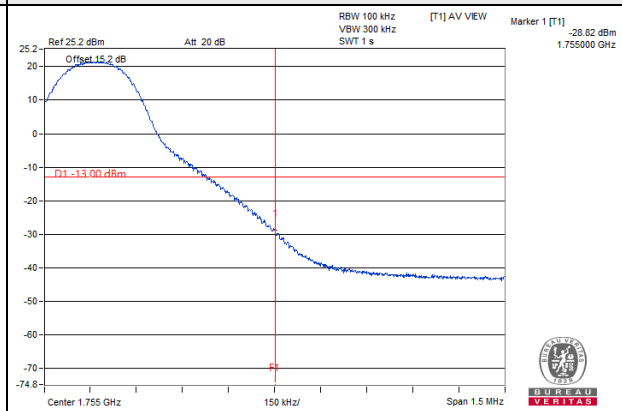
## Channel 20000

### 1 RB

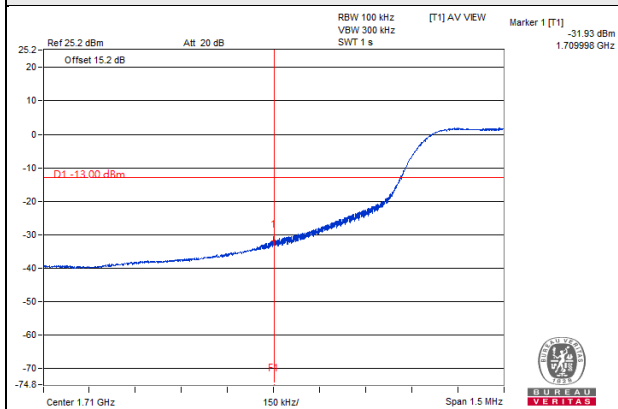


## Channel 20350

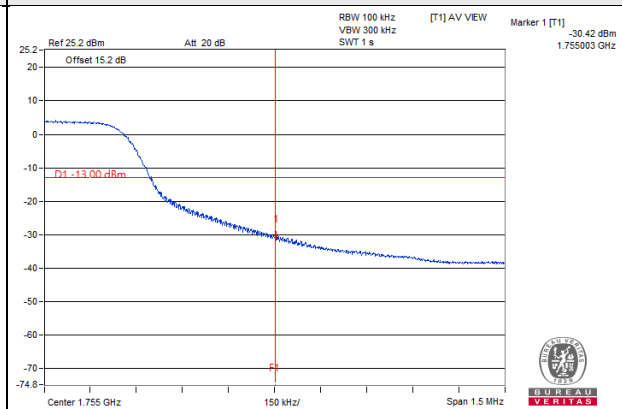
### 1 RB



### 50 RB



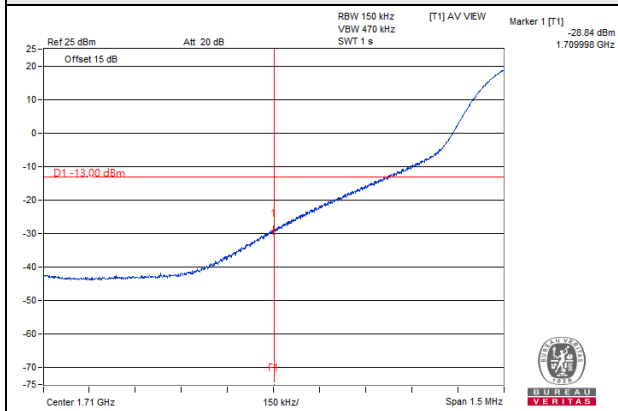
### 50 RB



# LTE Band 4 Channel Bandwidth: 15MHz

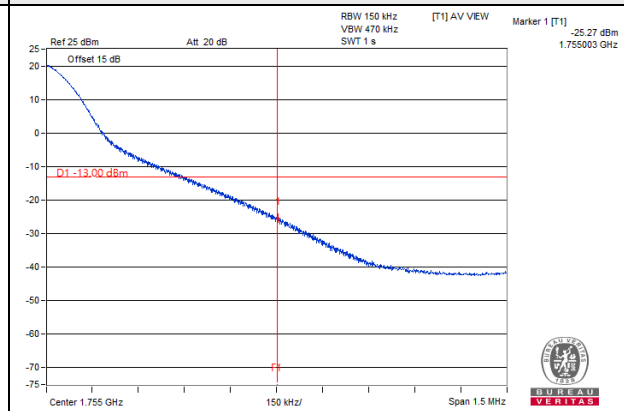
## Channel 20025

### 1 RB

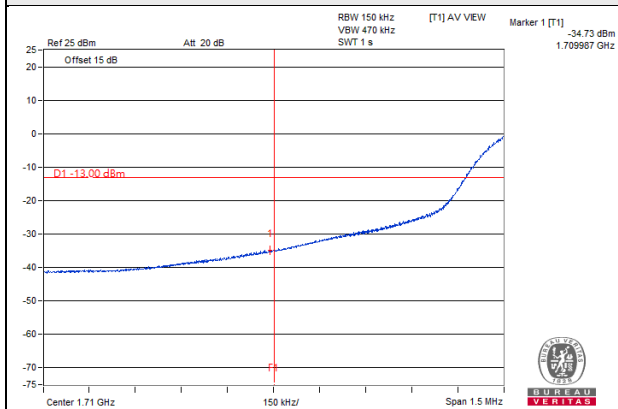


## Channel 20325

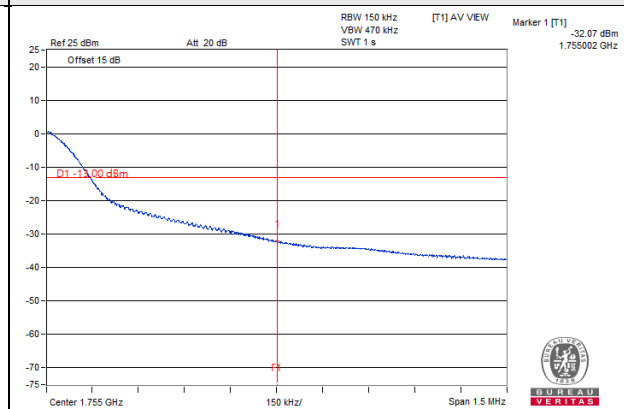
### 1 RB



### 75 RB



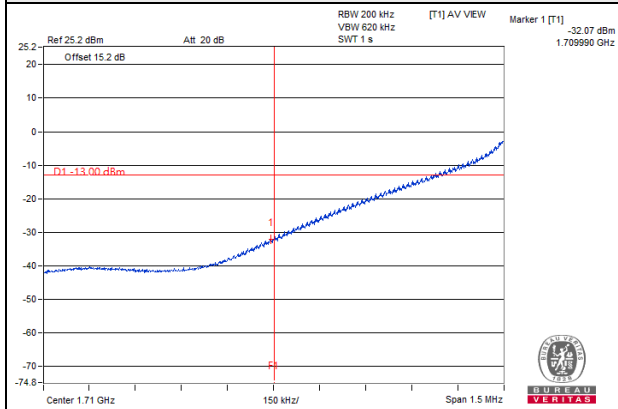
### 75 RB



# LTE Band 4 Channel Bandwidth: 20MHz

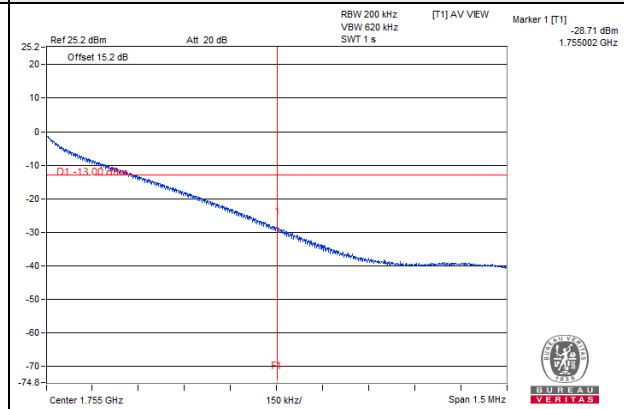
## Channel 20050

### 1 RB

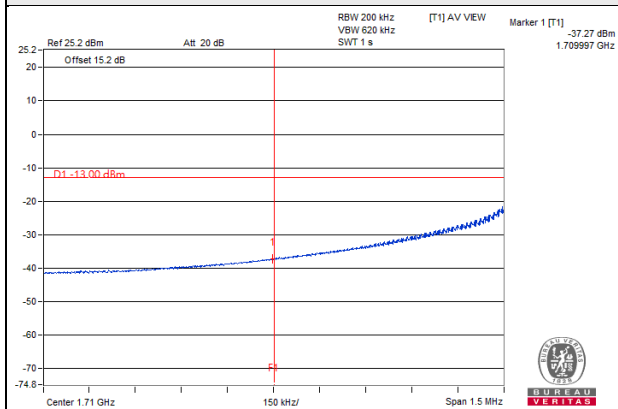


## Channel 20300

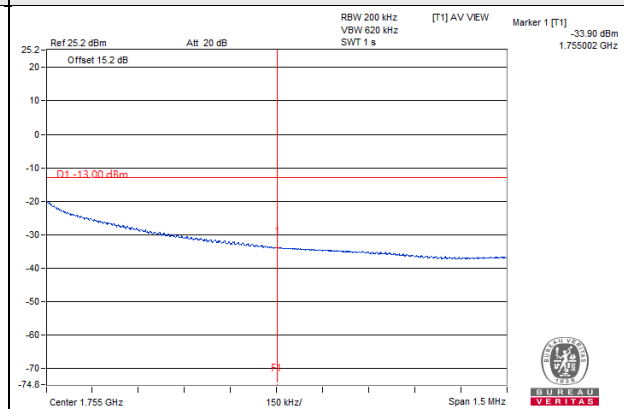
### 1 RB



### 100 RB



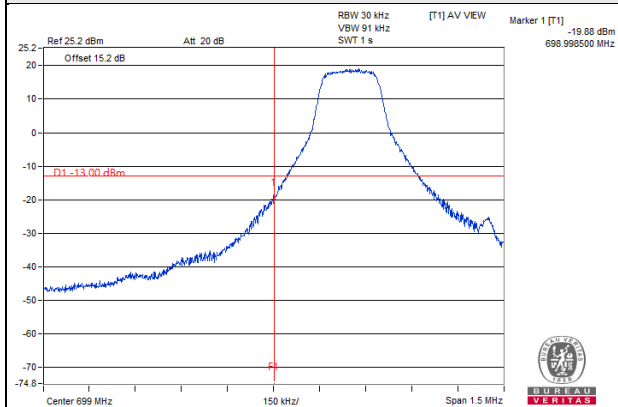
### 100 RB



# LTE Band 12 Channel Bandwidth: 1.4MHz

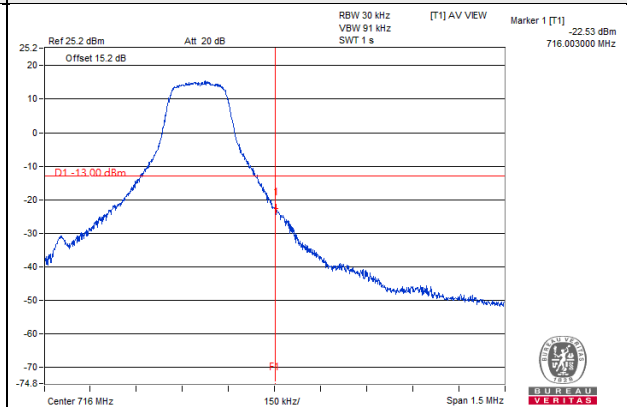
## Channel 23017

### 1 RB

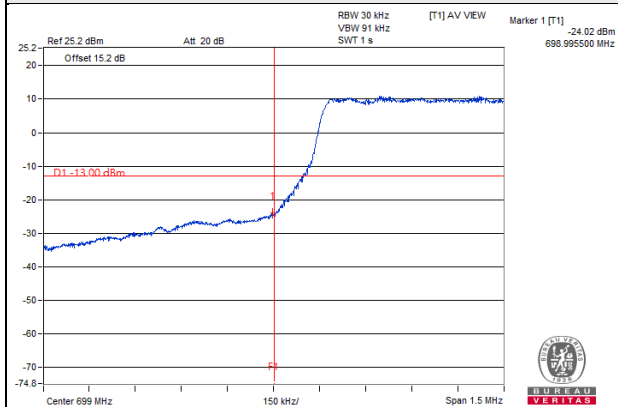


## Channel 23173

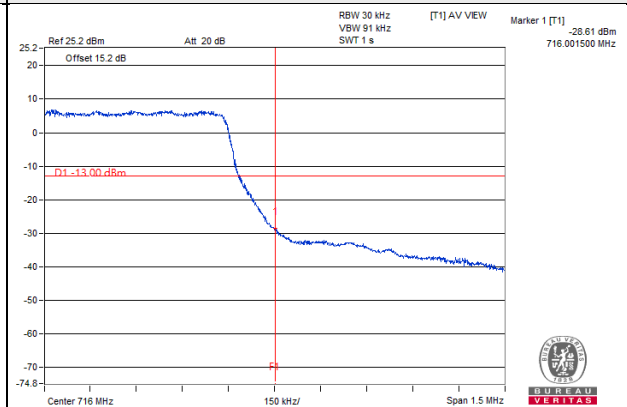
### 1 RB



### 6 RB



### 6 RB

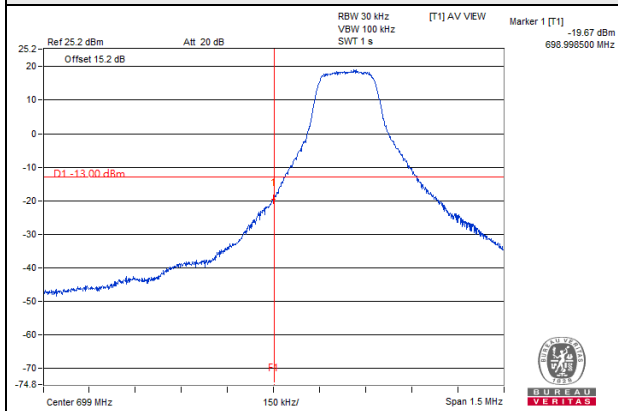




# LTE Band 12 Channel Bandwidth: 3MHz

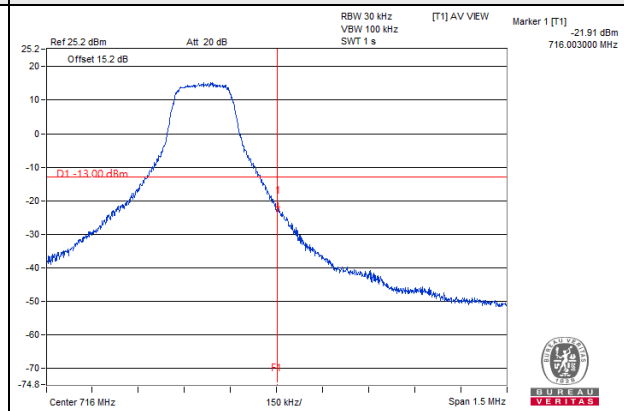
## Channel 23025

### 1 RB

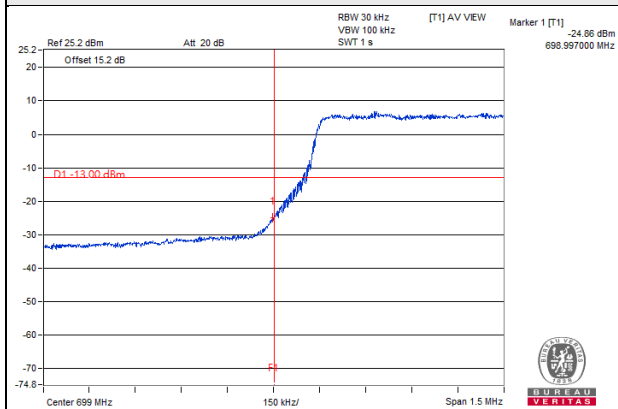


## Channel 23165

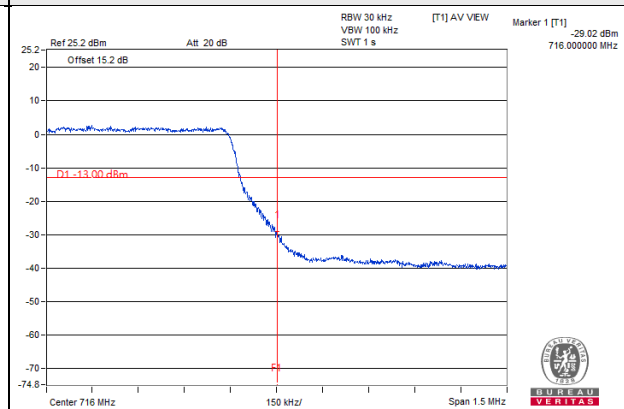
### 1 RB



### 15 RB



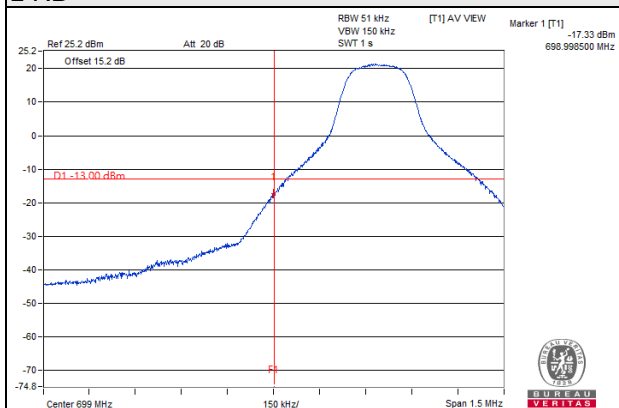
### 15 RB



# LTE Band 12 Channel Bandwidth: 5MHz

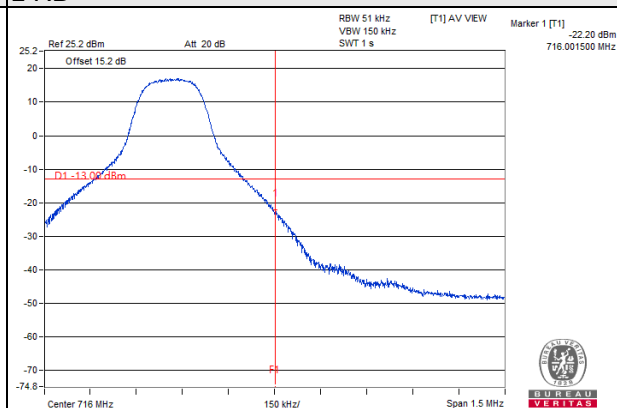
## Channel 23035

### 1 RB

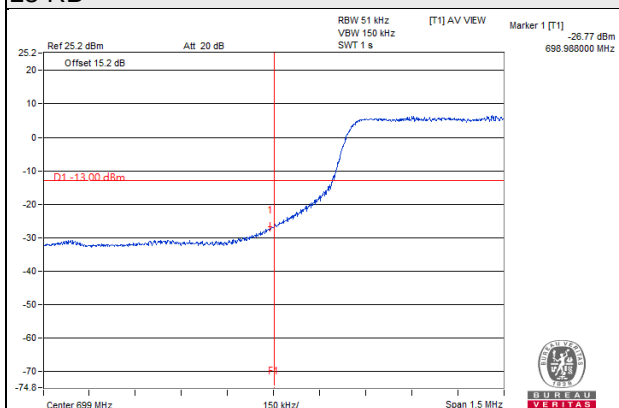


## Channel 23155

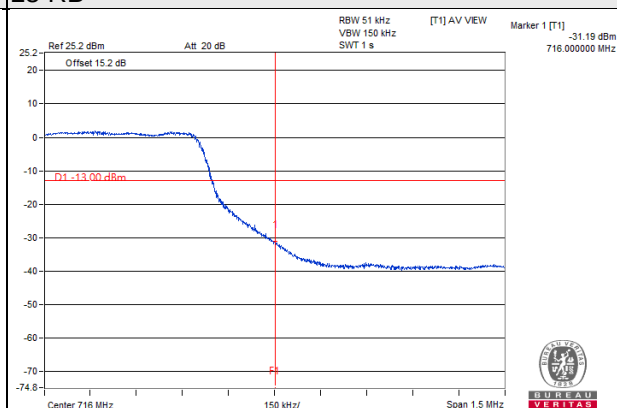
### 1 RB



### 25 RB



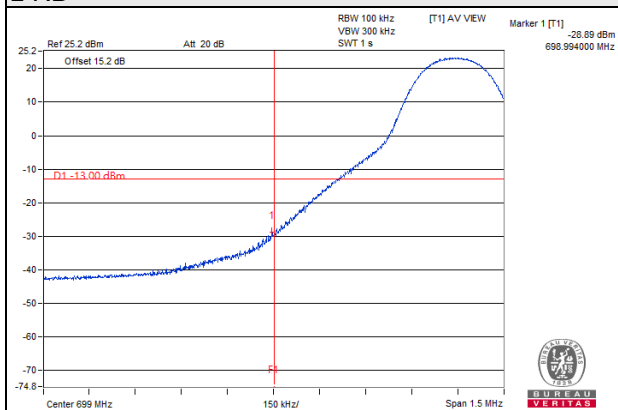
### 25 RB



# LTE Band 12 Channel Bandwidth: 10MHz

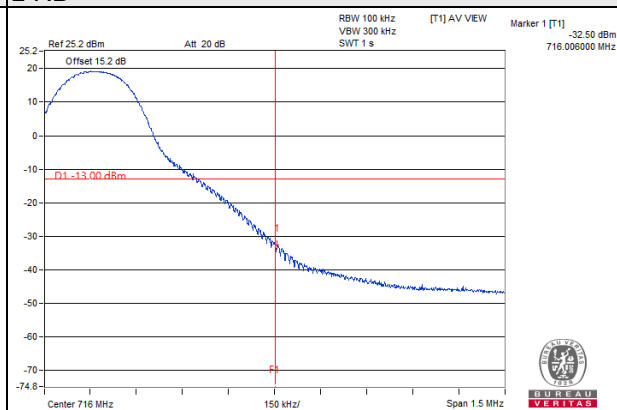
## Channel 23060

### 1 RB

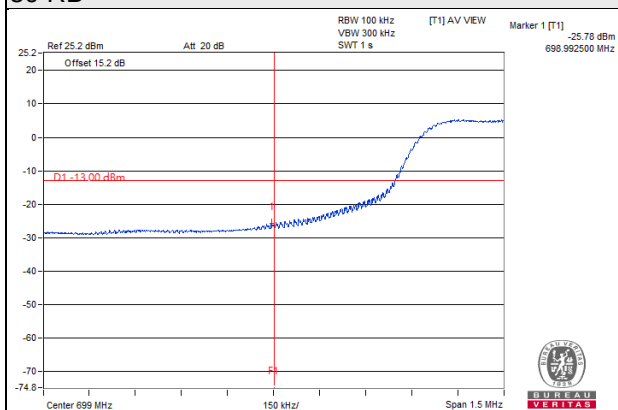


## Channel 23130

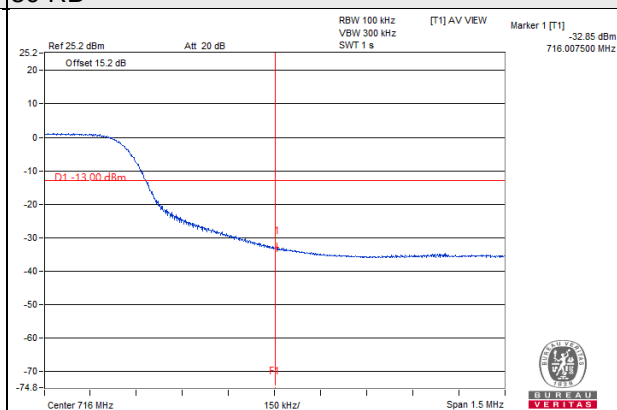
### 1 RB



### 50 RB



### 50 RB

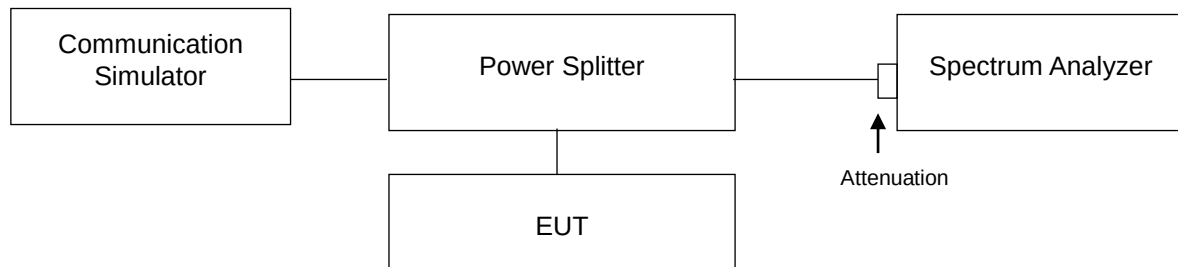


## 4.6 Peak to Average Ratio

### 4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

### 4.6.2 Test Setup



### 4.6.3 Test Procedures

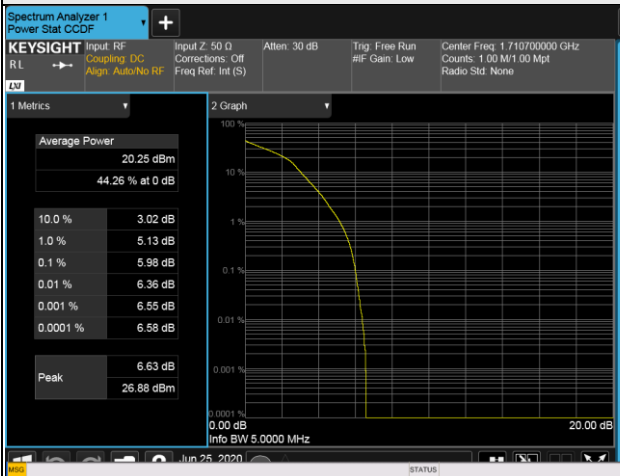
1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.6.4 Test Results

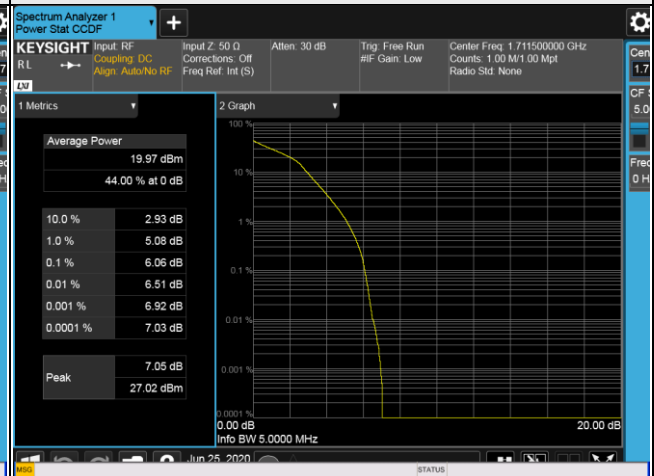
| LTE Band 4               |                 |                            |       |                         |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth 1.4MHz |                 |                            |       | Channel Bandwidth 3MHz  |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak To Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak To Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 19957                    | 1710.7          | 5.25                       | 5.98  | 19965                   | 1711.5          | 5.21                       | 6.06  |
| 20175                    | 1732.5          | 5.02                       | 5.82  | 20175                   | 1732.5          | 4.99                       | 5.85  |
| 20393                    | 1754.3          | 4.62                       | 5.21  | 20385                   | 1753.5          | 4.56                       | 5.45  |
| Channel Bandwidth 5MHz   |                 |                            |       | Channel Bandwidth 10MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak To Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak To Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 19975                    | 1712.5          | 5.24                       | 6.09  | 20000                   | 1715            | 5.18                       | 6.01  |
| 20175                    | 1732.5          | 5.12                       | 5.96  | 20175                   | 1732.5          | 5.1                        | 5.93  |
| 20375                    | 1752.5          | 4.92                       | 5.79  | 20350                   | 1750            | 5.03                       | 5.91  |
| Channel Bandwidth 15MHz  |                 |                            |       | Channel Bandwidth 20MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak To Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak To Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 20025                    | 1717.5          | 5.35                       | 6.00  | 20050                   | 1720            | 5.07                       | 5.86  |
| 20175                    | 1732.5          | 5.3                        | 5.97  | 20175                   | 1732.5          | 5.11                       | 5.87  |
| 20325                    | 1747.5          | 5.31                       | 5.99  | 20300                   | 1745            | 5.19                       | 5.96  |

## Spectrum Plot of Worst Value

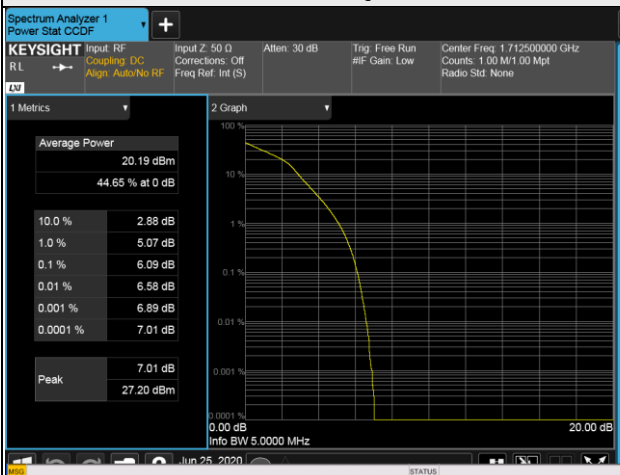
### 1.4MHz / 16QAM



### 3MHz / 16QAM



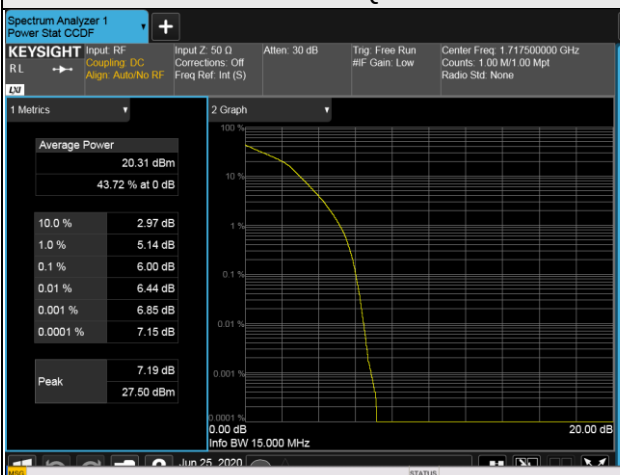
### 5MHz / 16QAM



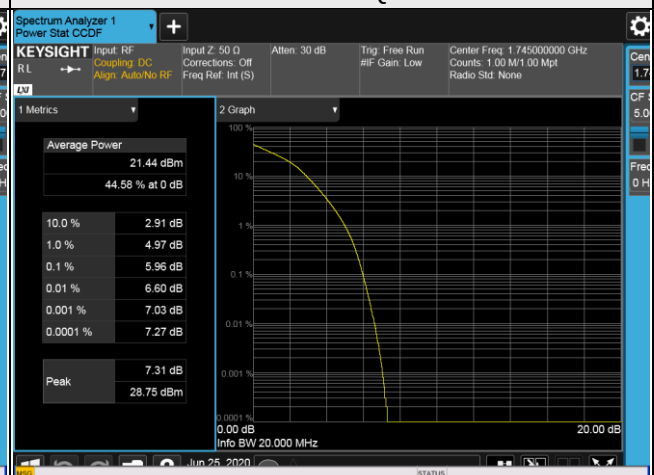
### 10MHz / 16QAM



### 15MHz / 16QAM



### 20MHz / 16QAM



| LTE Band 12              |                 |                            |       |                         |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth 1.4MHz |                 |                            |       | Channel Bandwidth 3MHz  |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak To Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak To Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 23017                    | 699.7           | 5.77                       | 6.36  | 23025                   | 700.5           | 5.55                       | 6.43  |
| 23095                    | 707.5           | 5.75                       | 6.54  | 23095                   | 707.5           | 5.77                       | 6.64  |
| 23173                    | 715.3           | 5.35                       | 6.21  | 23165                   | 714.5           | 5.41                       | 6.27  |
| Channel Bandwidth 5MHz   |                 |                            |       | Channel Bandwidth 10MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak To Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak To Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 23035                    | 701.5           | 5.52                       | 6.37  | 23060                   | 704             | 5.58                       | 6.42  |
| 23095                    | 707.5           | 5.68                       | 6.53  | 23095                   | 707.5           | 5.59                       | 6.45  |
| 23155                    | 713.5           | 5.4                        | 6.28  | 23130                   | 711             | 5.41                       | 6.32  |



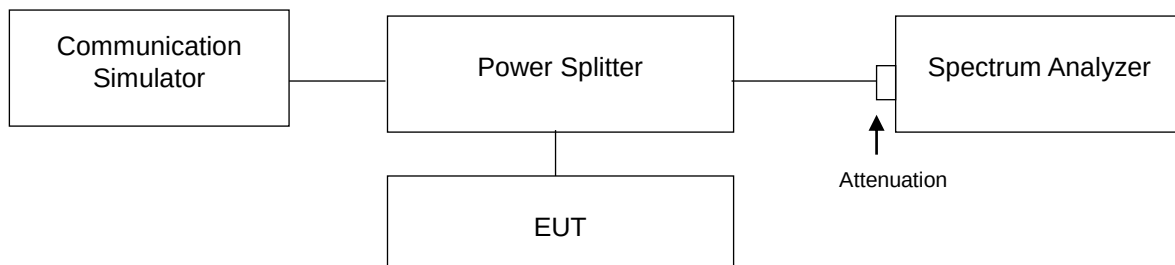
## 4.7 Conducted Spurious Emissions

### 4.7.1 Limits of Conducted Spurious Emissions Measurement

According to FCC 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

### 4.7.2 Test Setup



### 4.7.3 Test Procedure

- All measurements were done at 3 channels: low, middle and high operational frequency range.
- When the spectrum scanned from 9 kHz to the tenth harmonic of the highest fundamental frequency, it shall be connected to the 20dB pad attenuated the carried frequency.

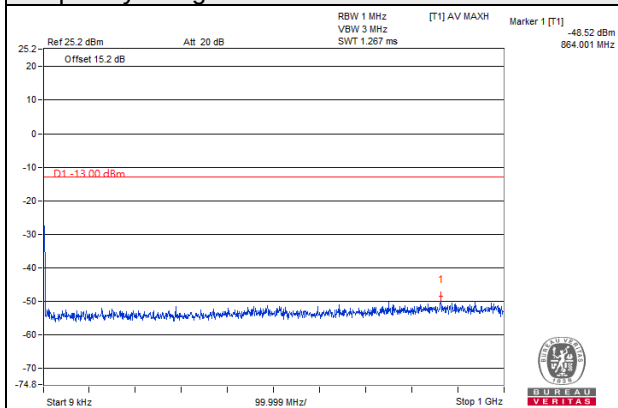


#### 4.7.4 Test Results

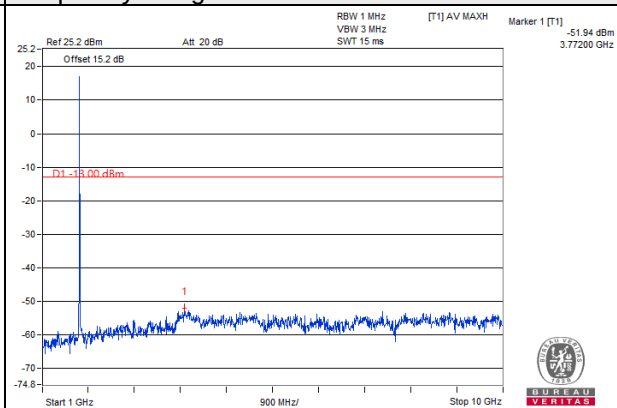
LTE Band 4 Channel Bandwidth: 1.4MHz

Channel 19957

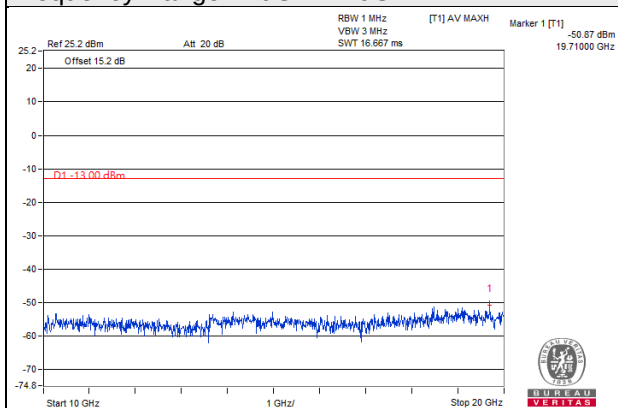
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~20GHz

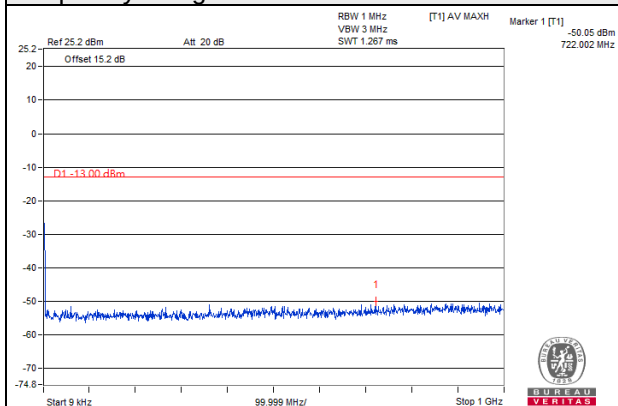


Note: The signal of 9kHz is IF signal from test instrument.

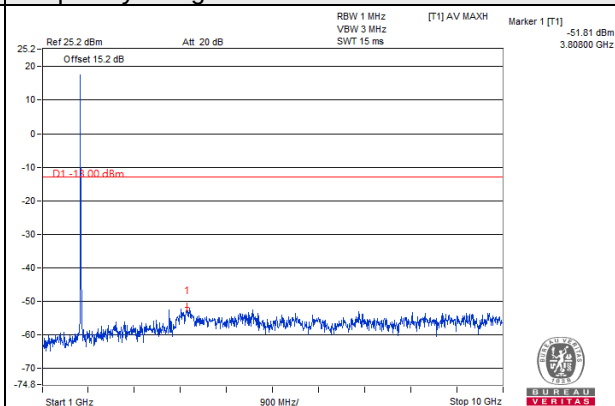
# LTE Band 4 Channel Bandwidth: 1.4MHz

## Channel 20175

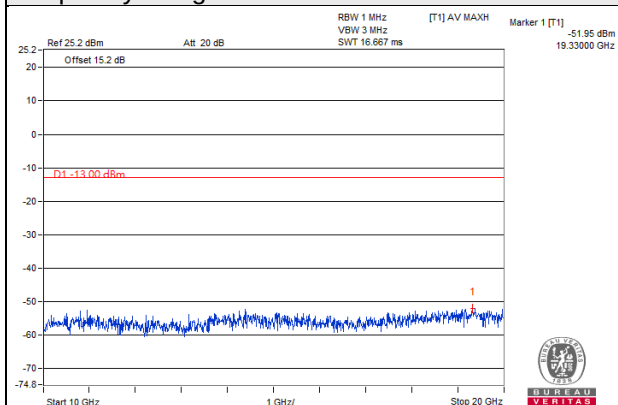
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

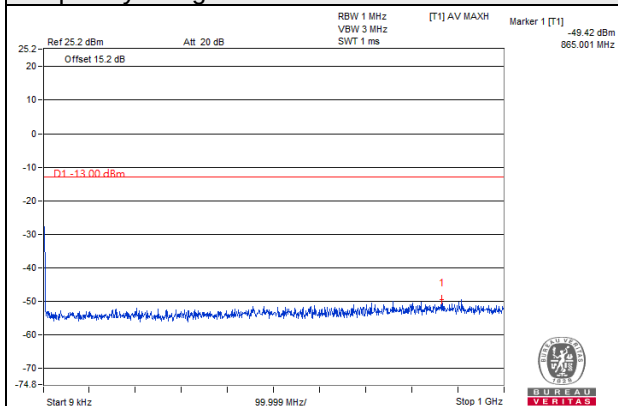


Note: The signal of 9kHz is IF signal from test instrument.

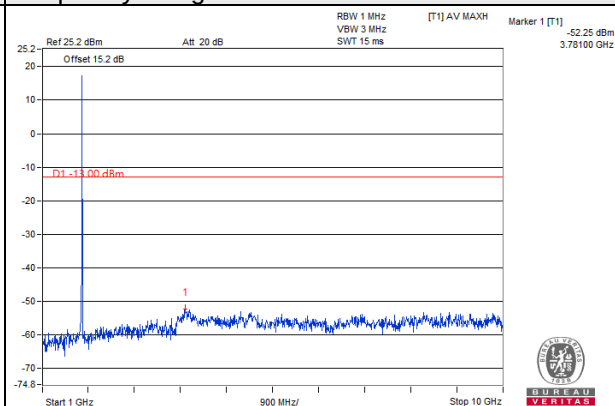
LTE Band 4 Channel Bandwidth: 1.4MHz

Channel 20393

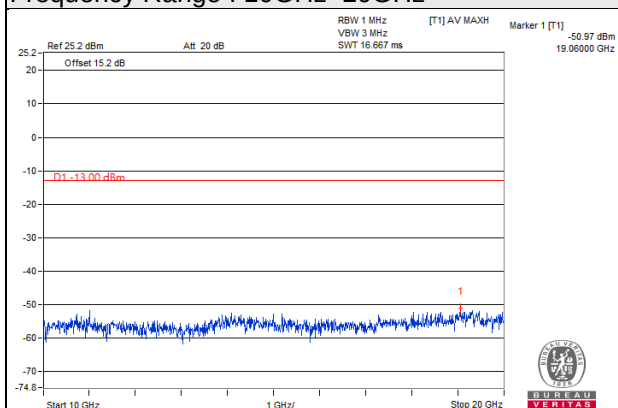
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~20GHz

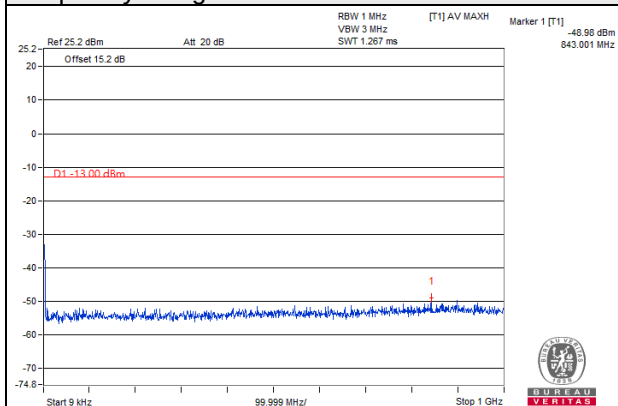


Note: The signal of 9kHz is IF signal from test instrument.

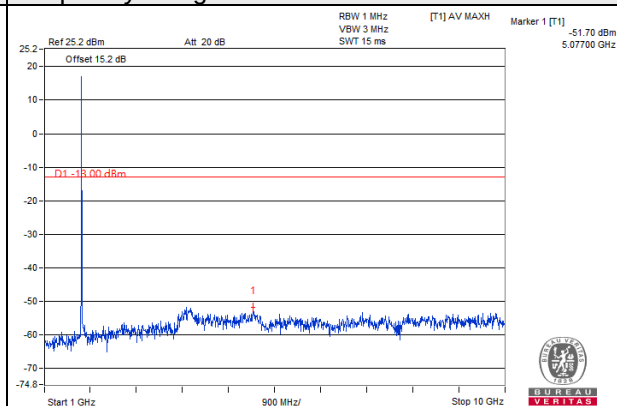
# LTE Band 4 Channel Bandwidth: 3MHz

Channel 19965

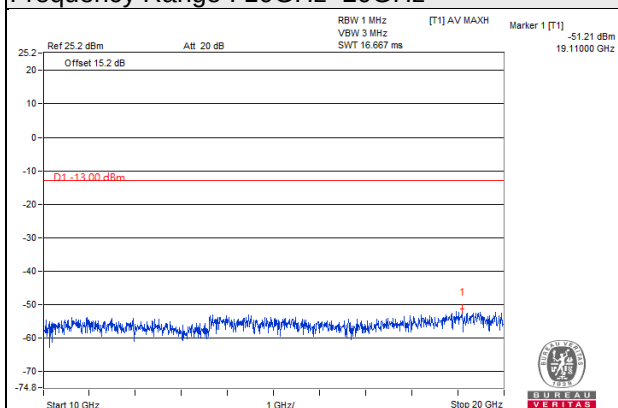
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~20GHz

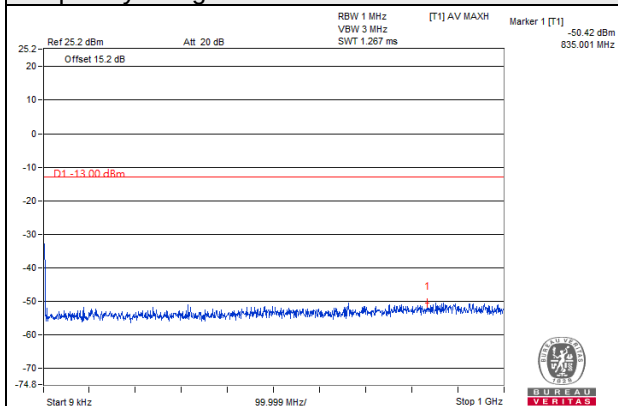


Note: The signal of 9kHz is IF signal from test instrument.

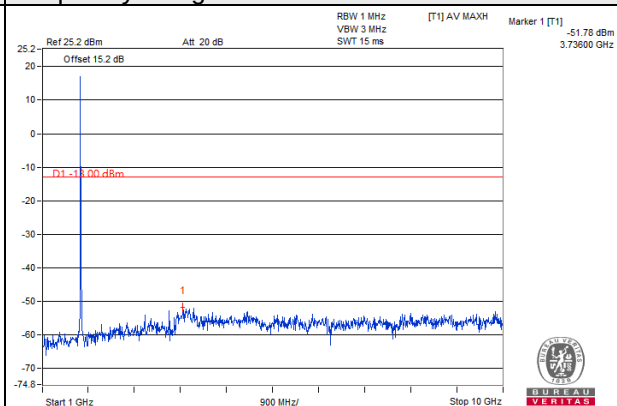
# LTE Band 4 Channel Bandwidth: 3MHz

## Channel 20175

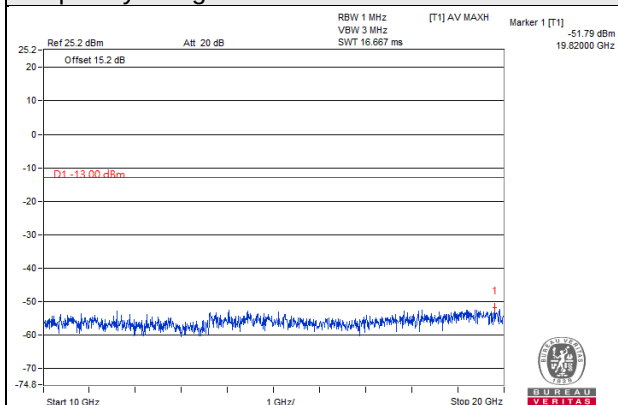
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

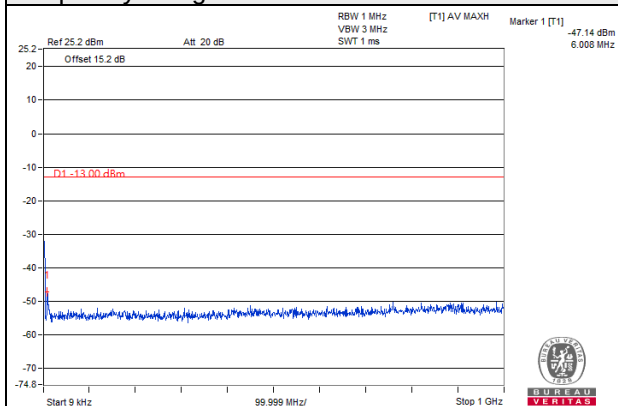


Note: The signal of 9kHz is IF signal from test instrument.

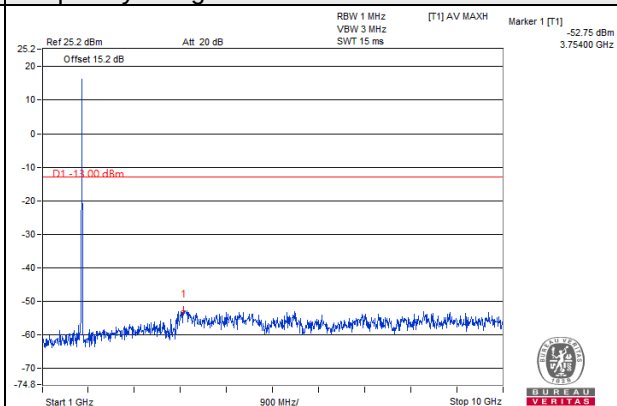
# LTE Band 4 Channel Bandwidth: 3MHz

Channel 20385

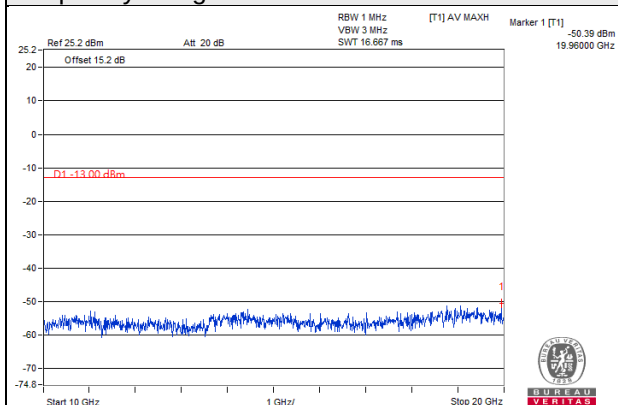
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~20GHz

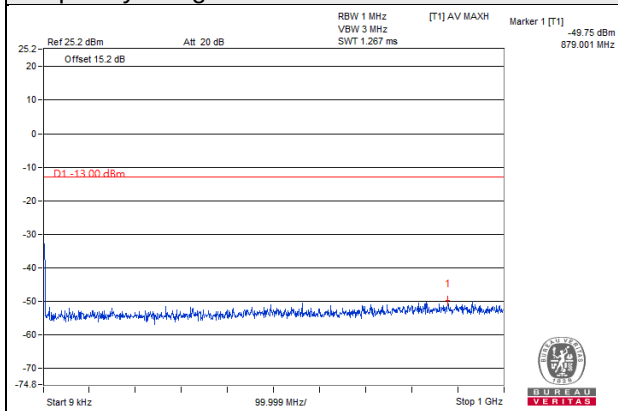


Note: The signal of 9kHz is IF signal from test instrument.

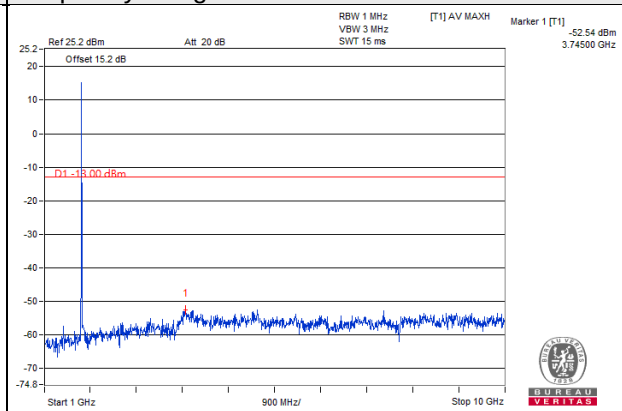
# LTE Band 4 Channel Bandwidth: 5MHz

## Channel 19975

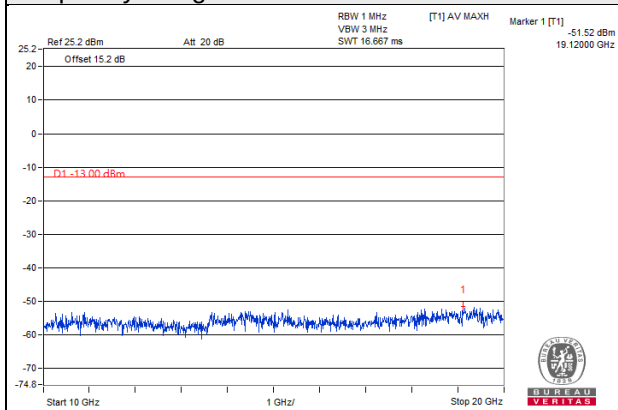
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

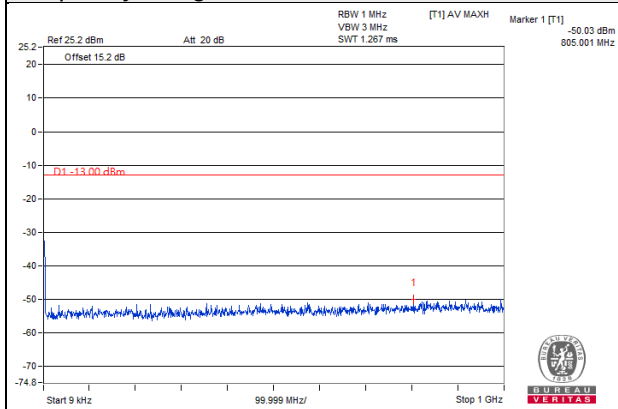


Note: The signal of 9kHz is IF signal from test instrument.

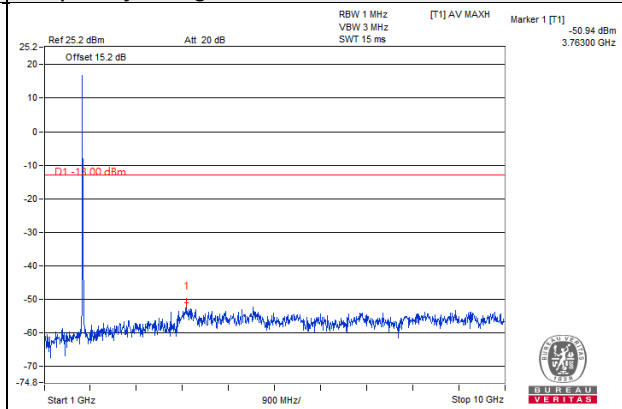
# LTE Band 4 Channel Bandwidth: 5MHz

## Channel 20175

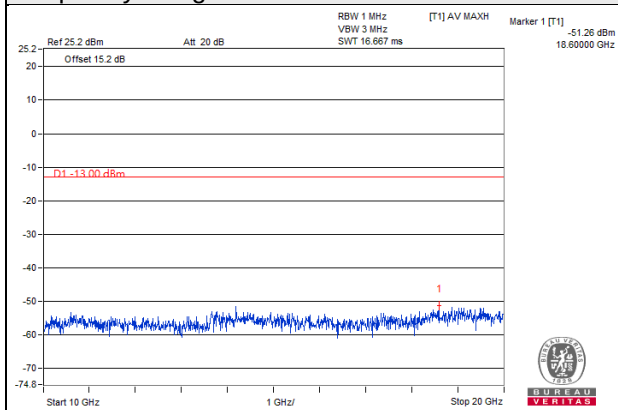
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz



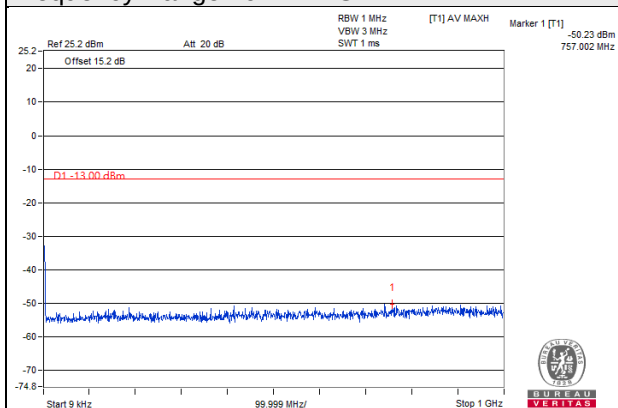
Note: The signal of 9kHz is IF signal from test instrument.



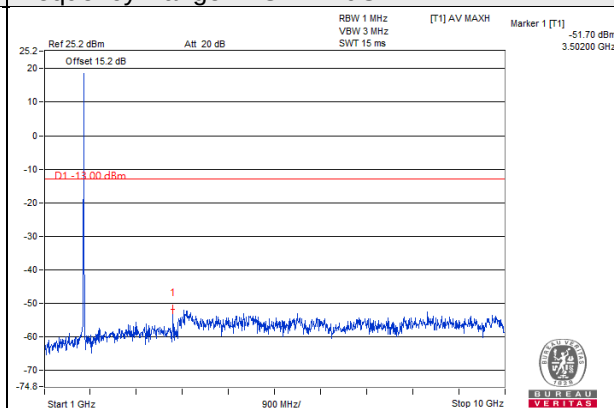
LTE Band 4 Channel Bandwidth: 5MHz

Channel 20375

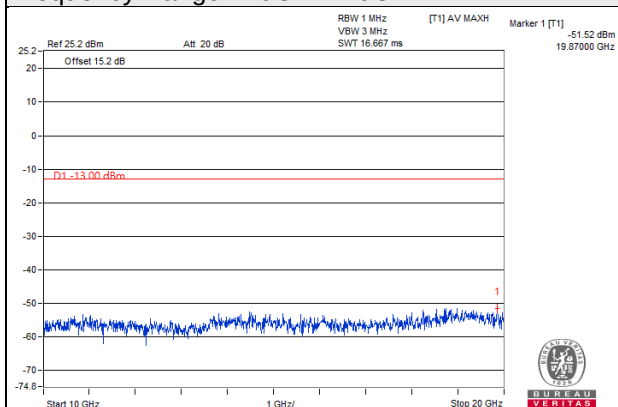
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~20GHz

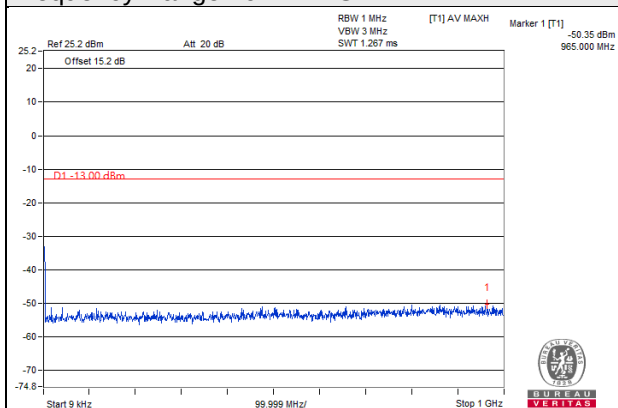


Note: The signal of 9kHz is IF signal from test instrument.

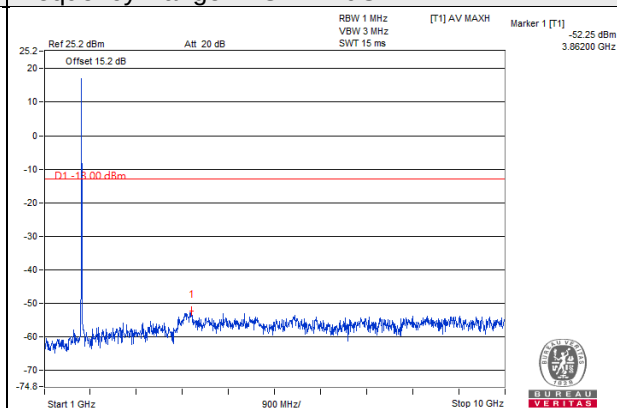
# LTE Band 4 Channel Bandwidth: 10MHz

## Channel 20000

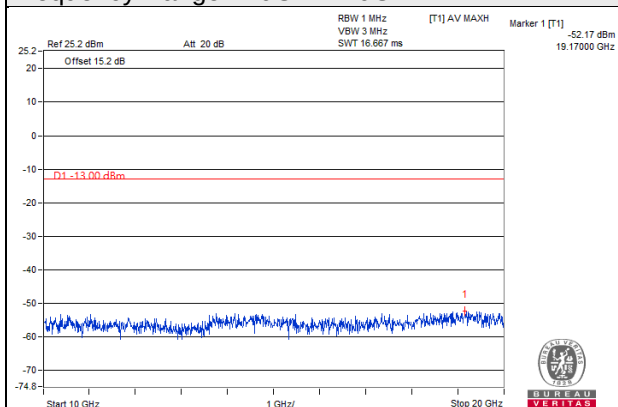
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

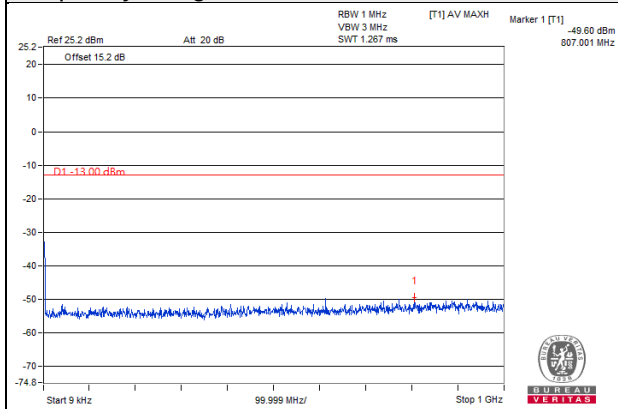


Note: The signal of 9kHz is IF signal from test instrument.

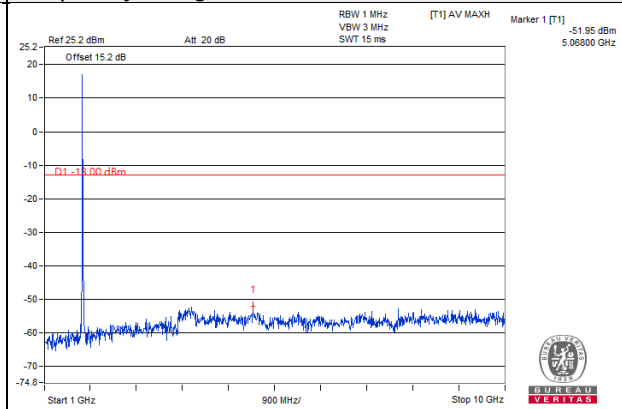
# LTE Band 4 Channel Bandwidth: 10MHz

## Channel 20175

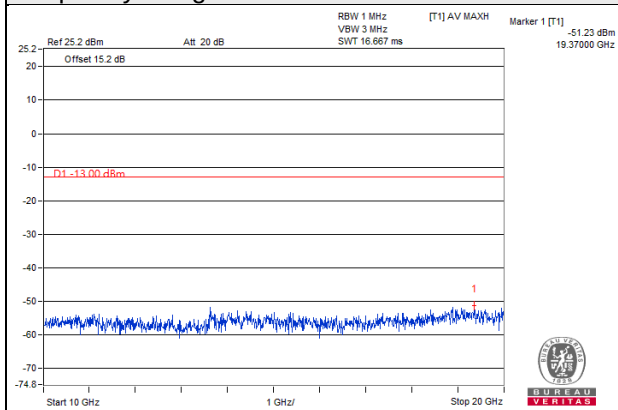
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

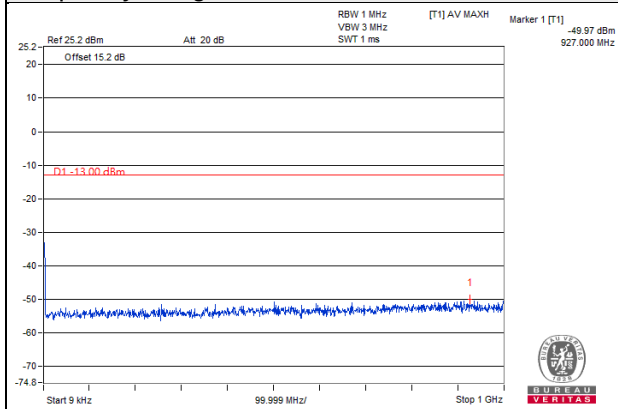


Note: The signal of 9kHz is IF signal from test instrument.

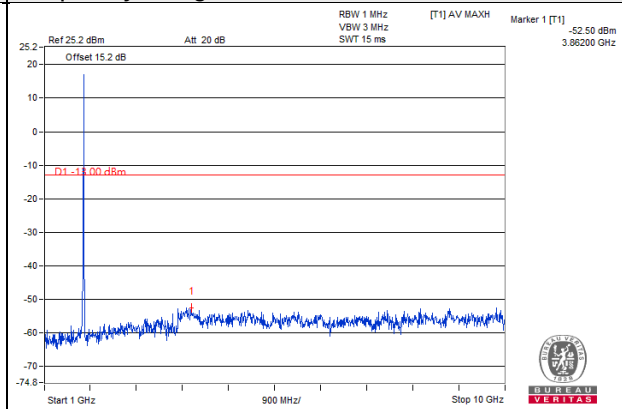
# LTE Band 4 Channel Bandwidth: 10MHz

## Channel 20350

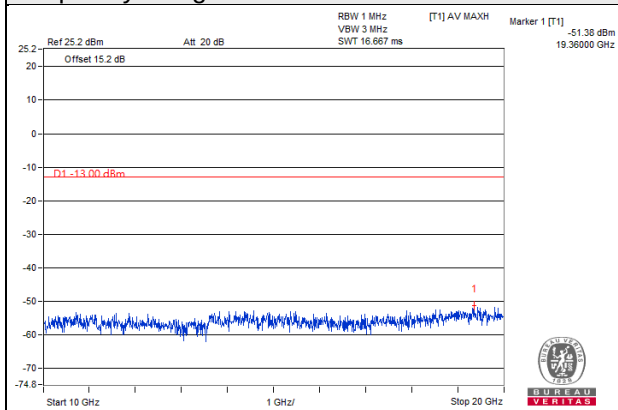
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

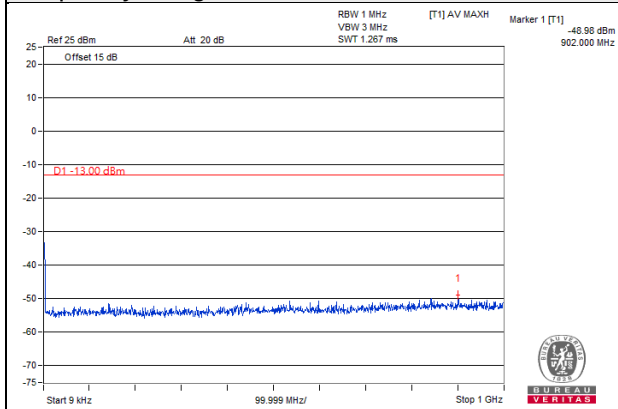


Note: The signal of 9kHz is IF signal from test instrument.

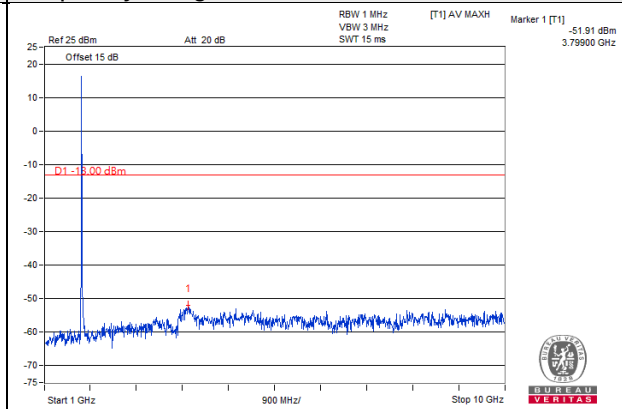
# LTE Band 4 Channel Bandwidth: 15MHz

## Channel 20025

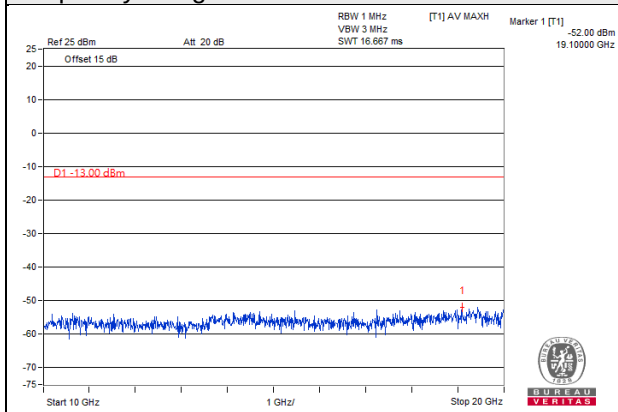
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

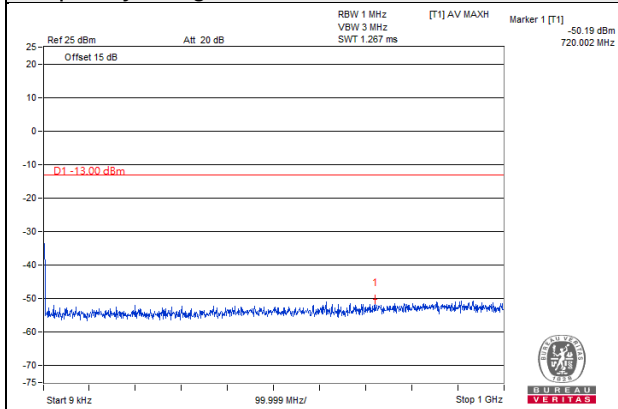


Note: The signal of 9kHz is IF signal from test instrument.

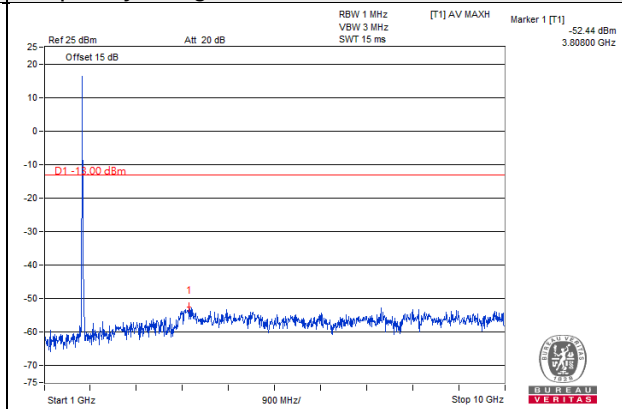
# LTE Band 4 Channel Bandwidth: 15MHz

## Channel 20175

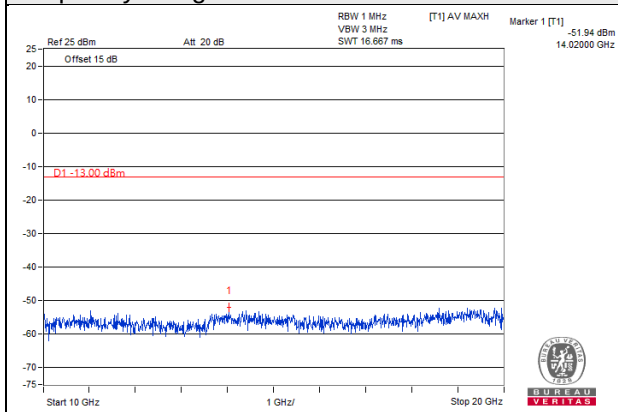
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

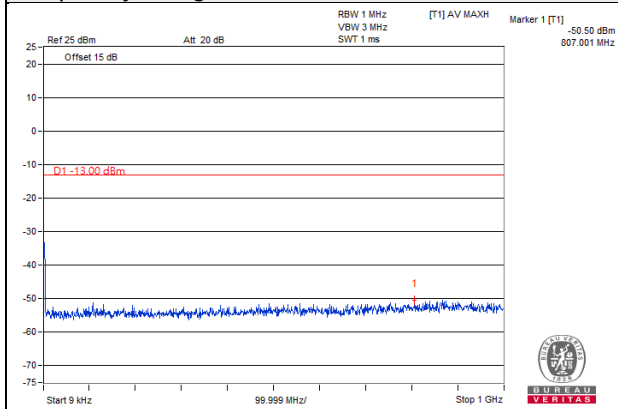


Note: The signal of 9kHz is IF signal from test instrument.

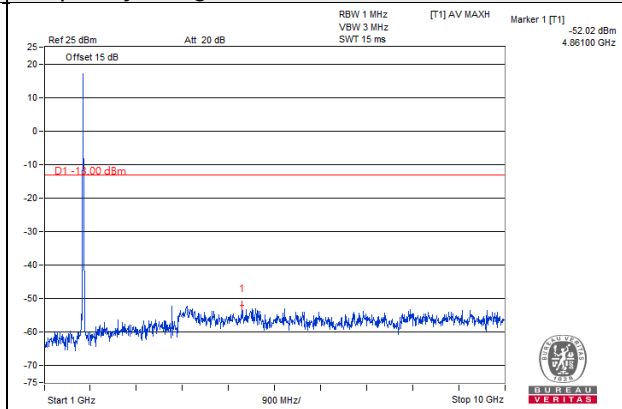
# LTE Band 4 Channel Bandwidth: 15MHz

## Channel 20325

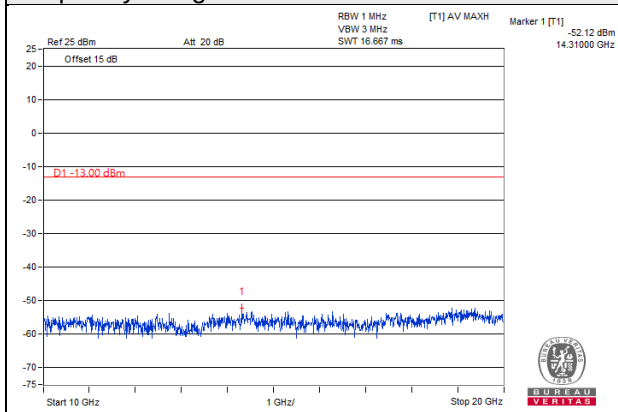
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz

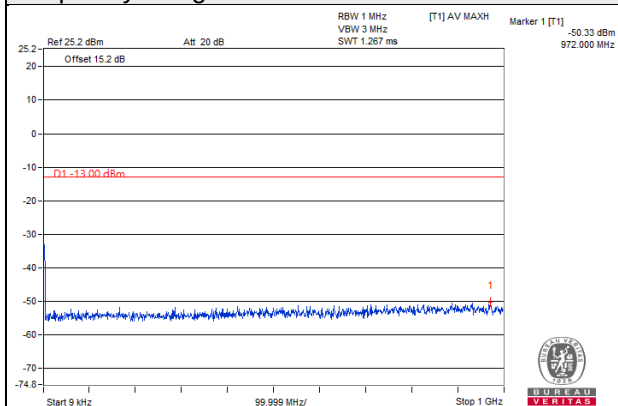


Note: The signal of 9kHz is IF signal from test instrument.

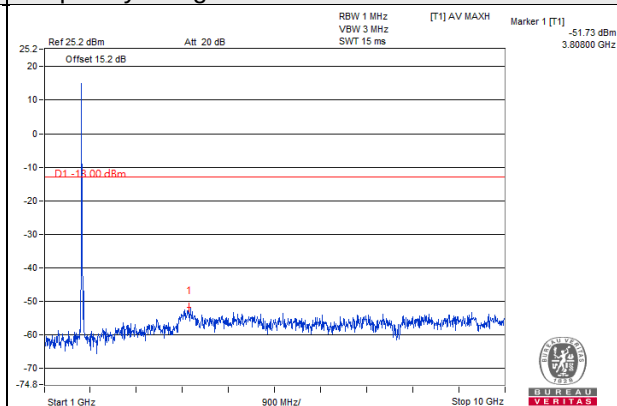
# LTE Band 4 Channel Bandwidth: 20MHz

## Channel 20050

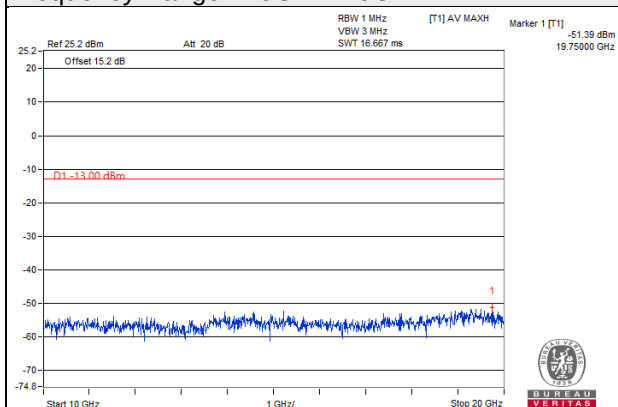
### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz



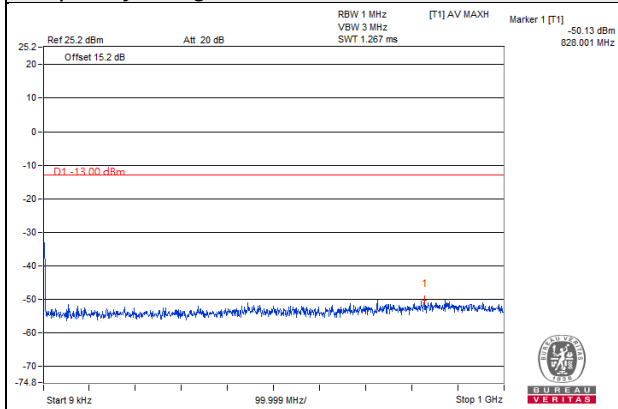
Note: The signal of 9kHz is IF signal from test instrument.



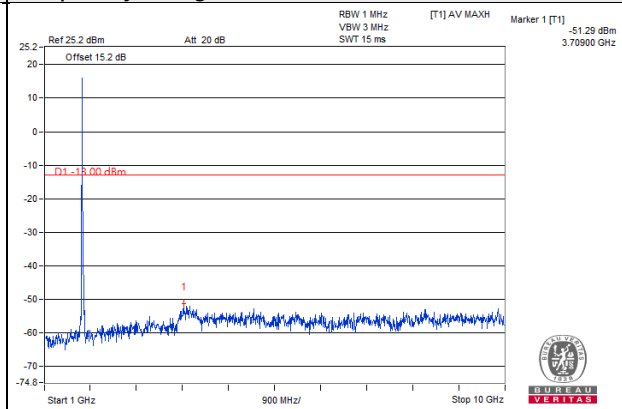
# LTE Band 4 Channel Bandwidth: 20MHz

## Channel 20175

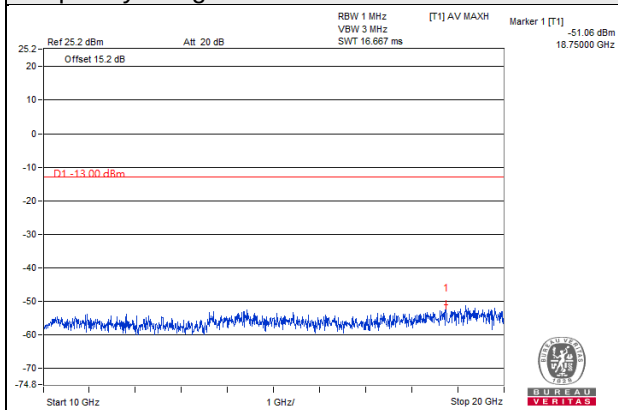
### Frequency Range : 9kHz~1GHz



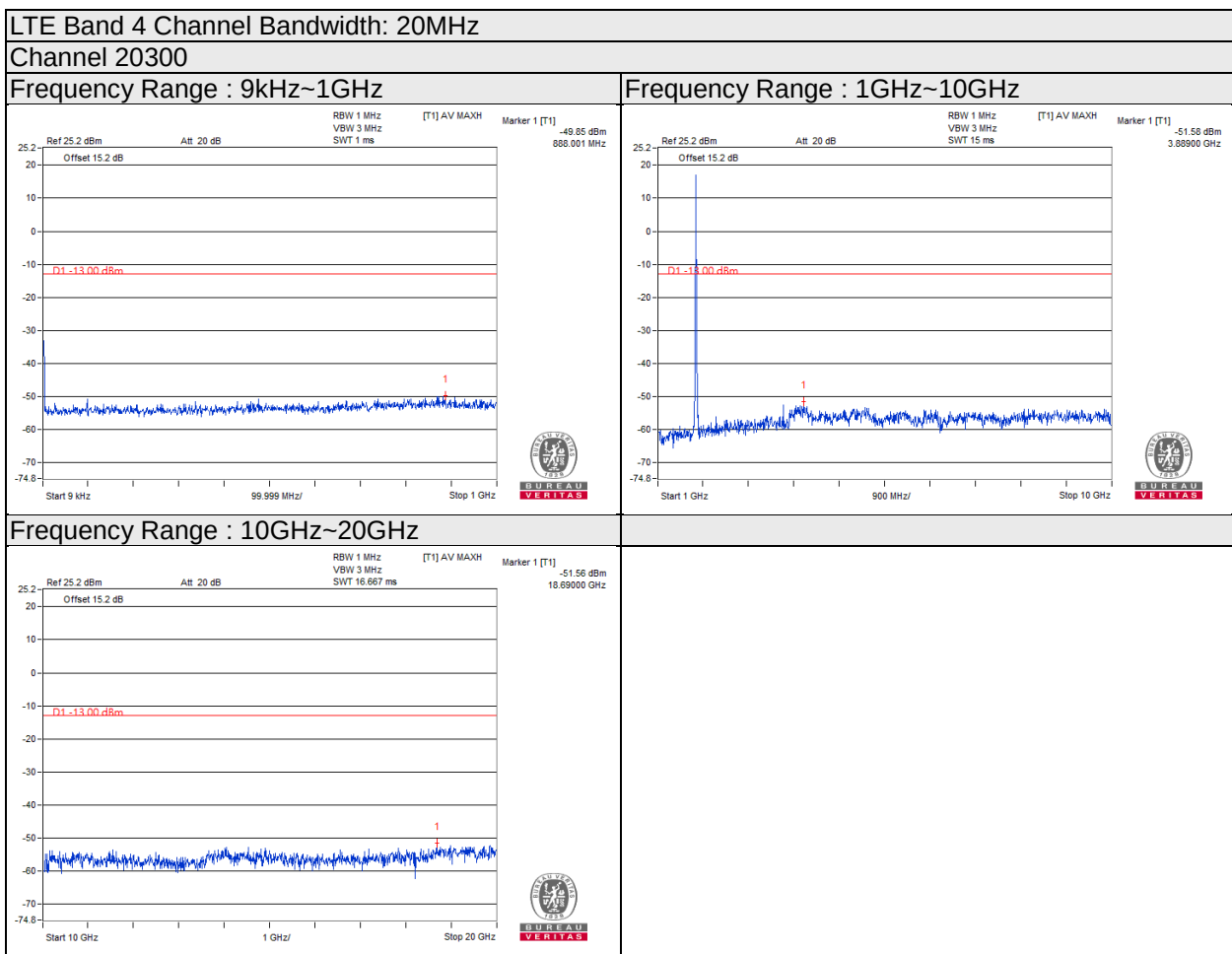
### Frequency Range : 1GHz~10GHz



### Frequency Range : 10GHz~20GHz



Note: The signal of 9kHz is IF signal from test instrument.

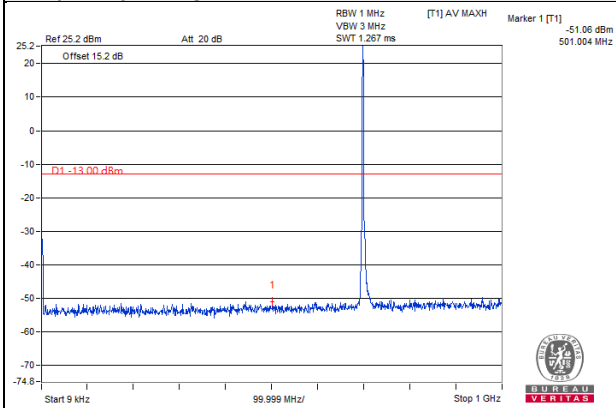


Note: The signal of 9kHz is IF signal from test instrument.

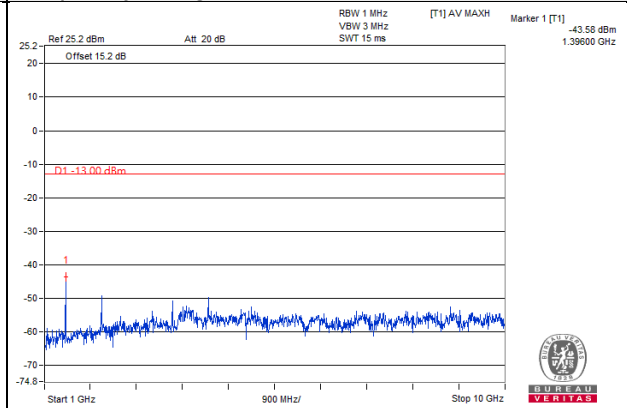
# LTE Band 12 Channel Bandwidth: 1.4MHz

## Channel 23017

Frequency Range : 9kHz~1GHz

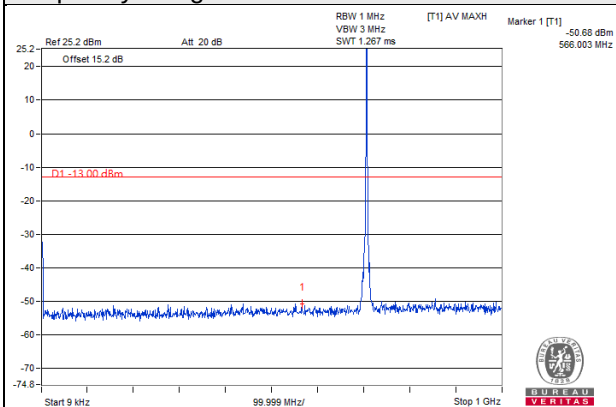


Frequency Range : 1GHz~10GHz

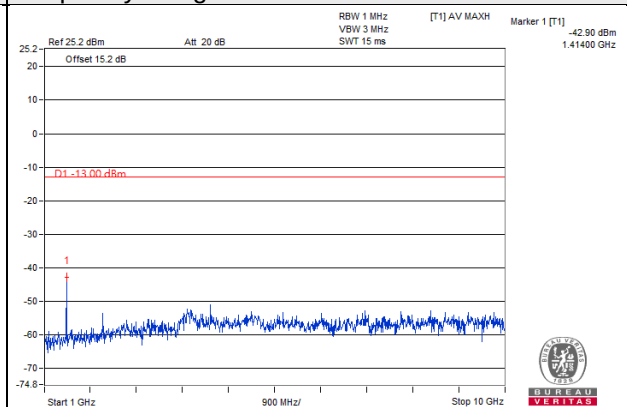


## Channel 23095

Frequency Range : 9kHz~1GHz

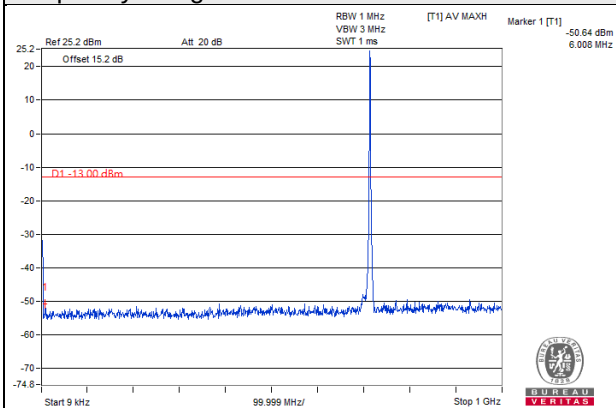


Frequency Range : 1GHz~10GHz

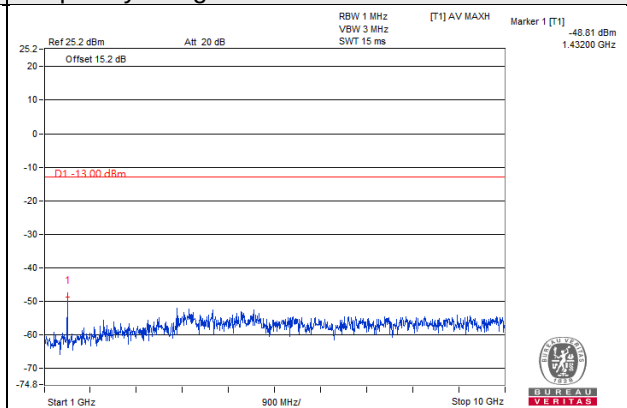


## Channel 23173

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz

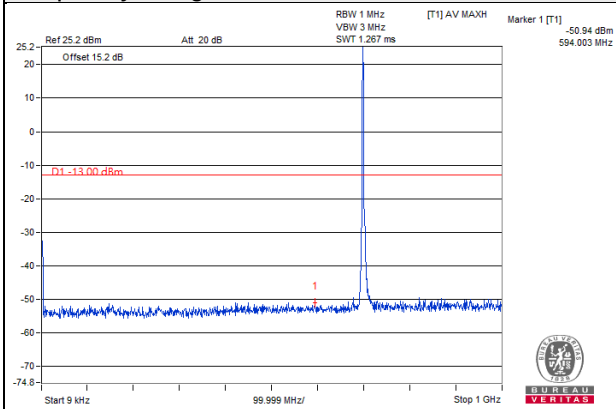


Note: The signal of 9kHz is IF signal from test instrument.

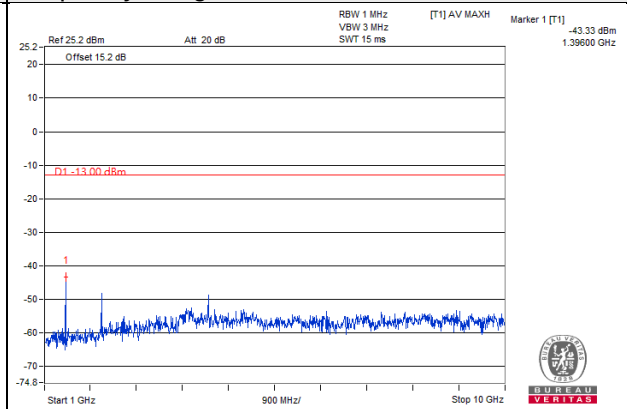
# LTE Band 12 Channel Bandwidth: 3MHz

## Channel 23025

Frequency Range : 9kHz~1GHz

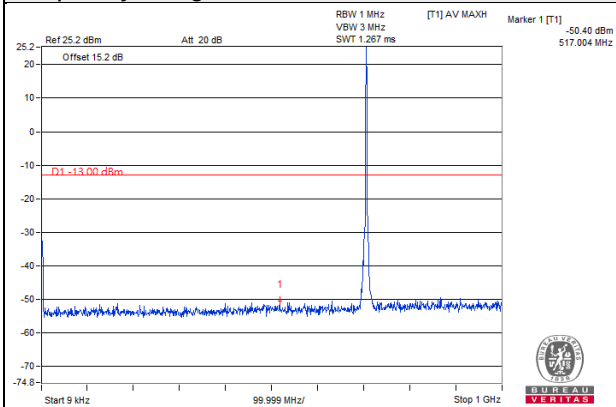


Frequency Range : 1GHz~10GHz

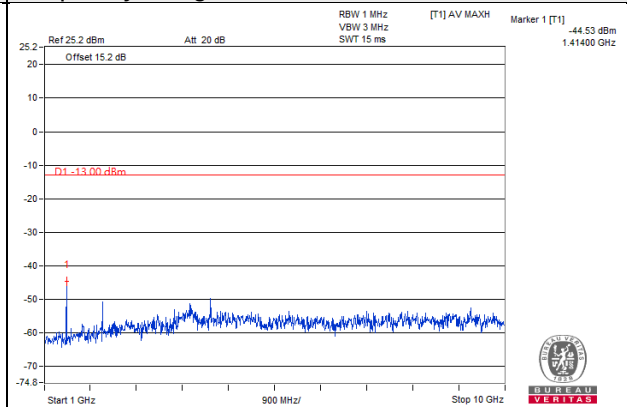


## Channel 23095

Frequency Range : 9kHz~1GHz

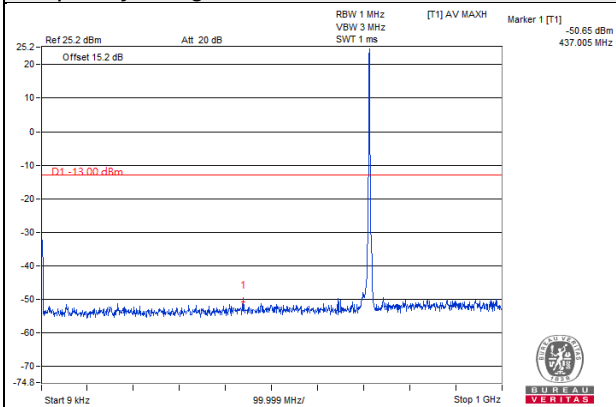


Frequency Range : 1GHz~10GHz

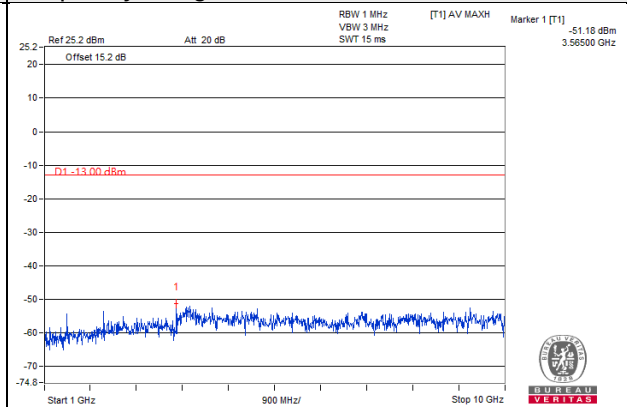


## Channel 23165

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz

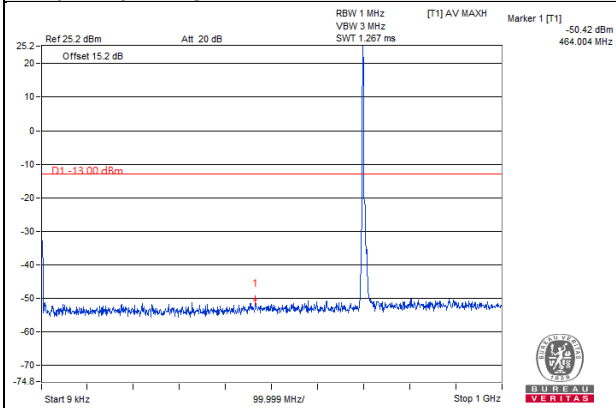


Note: The signal of 9kHz is IF signal from test instrument.

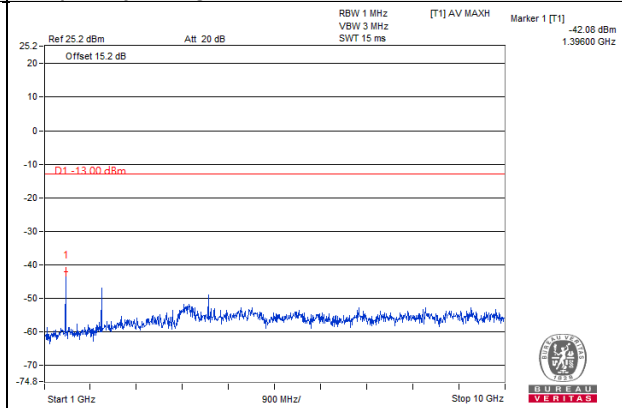
# LTE Band 12 Channel Bandwidth: 5MHz

## Channel 23035

### Frequency Range : 9kHz~1GHz

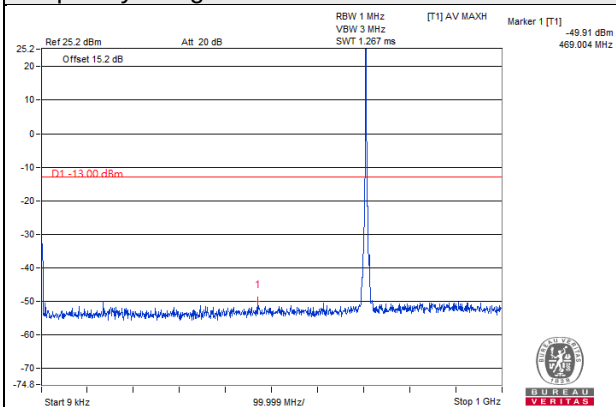


### Frequency Range : 1GHz~10GHz

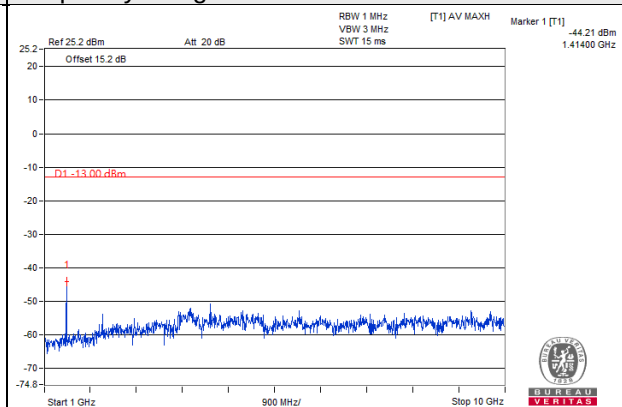


## Channel 23095

### Frequency Range : 9kHz~1GHz

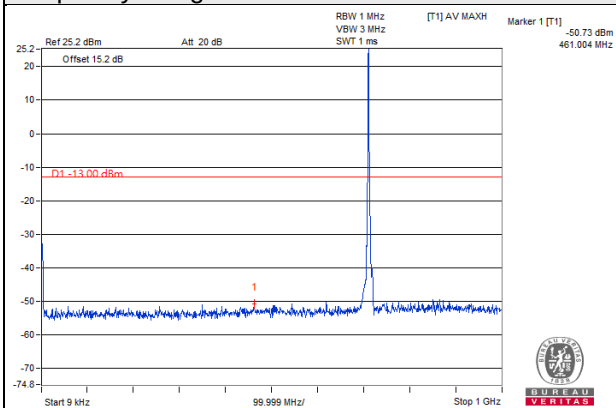


### Frequency Range : 1GHz~10GHz

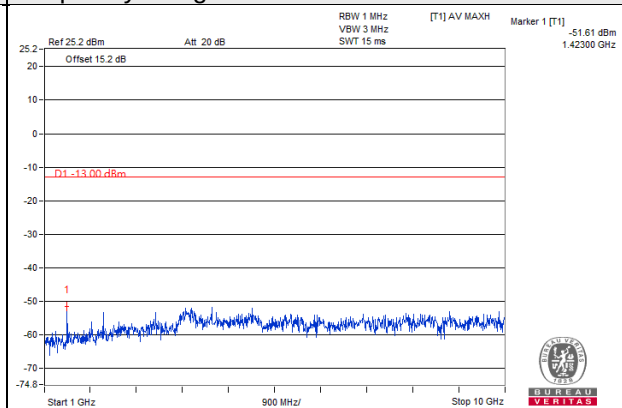


## Channel 23155

### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz

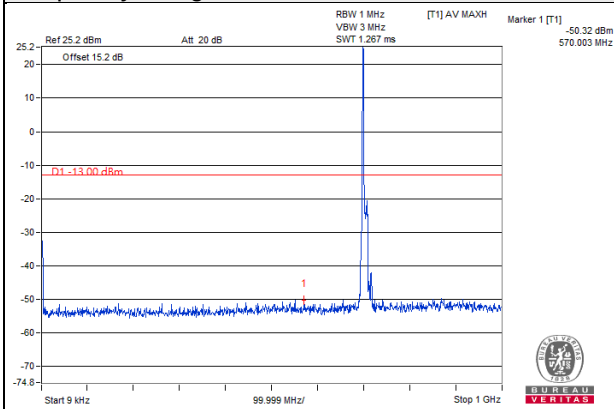


Note: The signal of 9kHz is IF signal from test instrument.

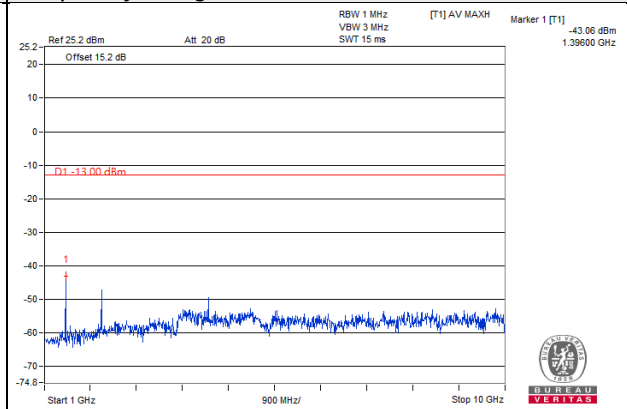
# LTE Band 12 Channel Bandwidth: 10MHz

## Channel 23060

### Frequency Range : 9kHz~1GHz

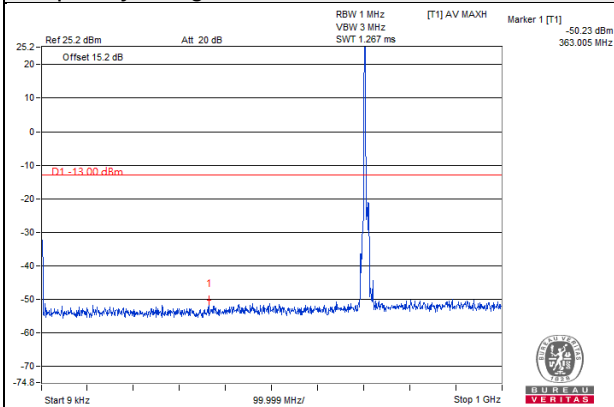


### Frequency Range : 1GHz~10GHz

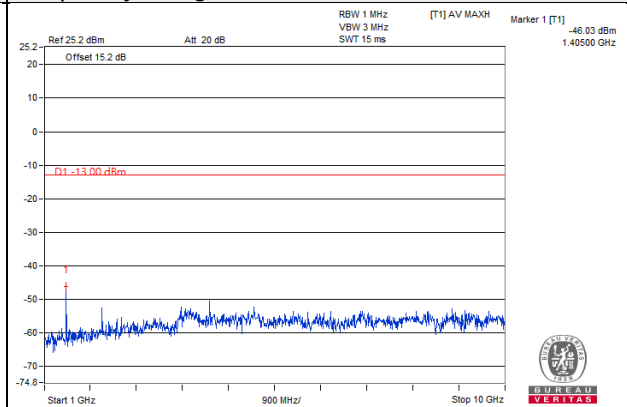


## Channel 23095

### Frequency Range : 9kHz~1GHz

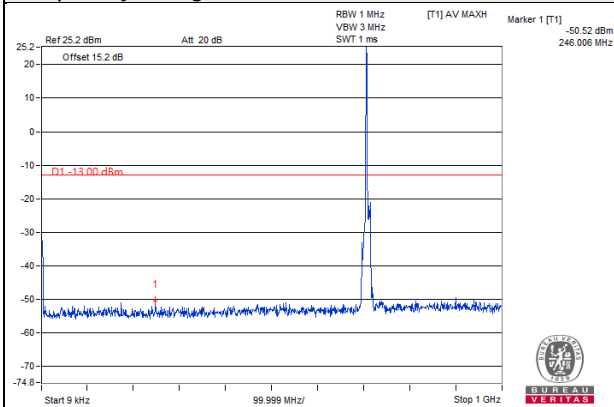


### Frequency Range : 1GHz~10GHz

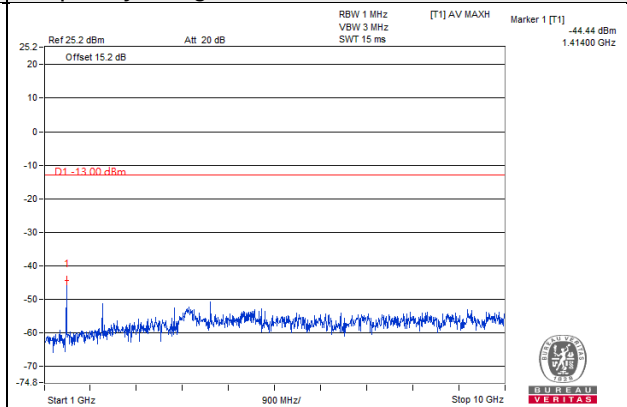


## Channel 23130

### Frequency Range : 9kHz~1GHz



### Frequency Range : 1GHz~10GHz



Note: The signal of 9kHz is IF signal from test instrument.

## 4.8 Radiated Emission Measurement

### 4.8.1 Limits of Radiated Emission Measurement

According to FCC 27.53(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

### 4.8.2 Test Procedure

- a. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high channel of operational frequency range.)
- b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m 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 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. Follow ANSI 63.26 section 5.2.7 d),  $\text{EIRP Value (dBm)} = \text{Read Value (dB}\mu\text{V/m)} - \text{Correction Factor @ 3m}$
- d.  $\text{Correction Factor (dB) @ 3m} = 20\log(D) - 104.8$ ; where D is the measurement distance @ 3m = -95.26dB
- e. ERP power can be calculated from EIRP power by subtracting the gain of dipole,  $\text{ERP power} = \text{EIRP power} - 2.15\text{dBi}$

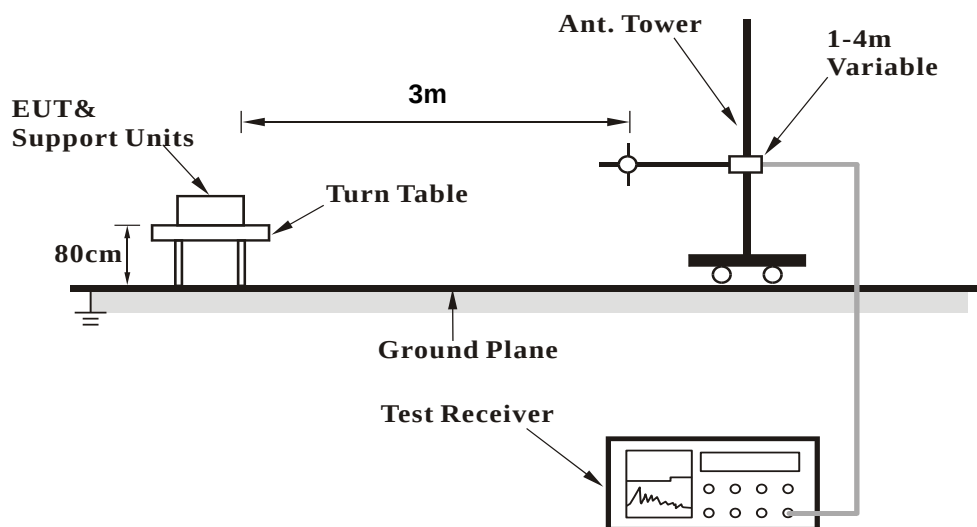
**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 4.8.3 Deviation from Test Standard

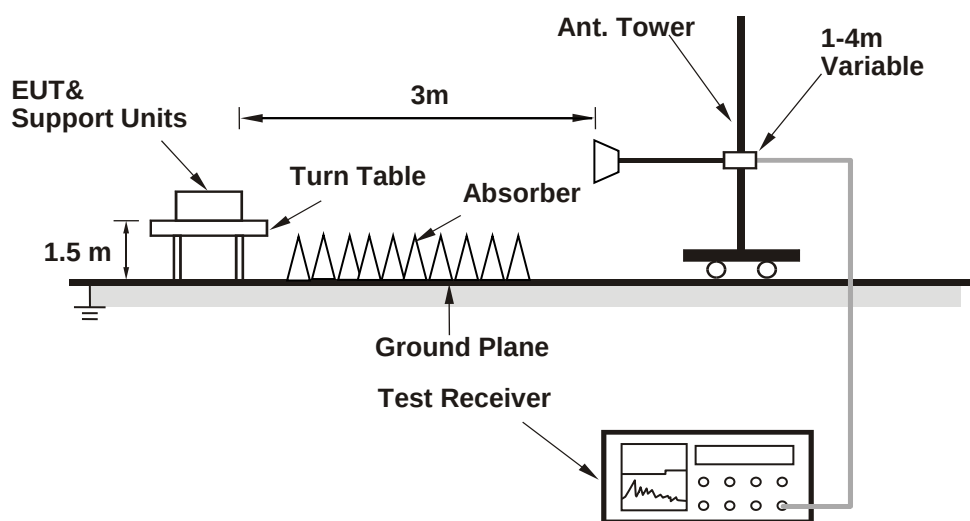
No deviation.

#### 4.8.4 Test Setup

##### <Frequency Range below 1GHz>



##### <Frequency Range above 1GHz>



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



#### 4.8.5 Test Results

Below 1GHz

#### LTE Band 4: 1.4MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19957 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 75.5        | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 2                                                   | 145.24      | 30                     | -95.26                 | -65.26               | -13         | -52.26      |
| 3                                                   | 197.62      | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 4                                                   | 301.36      | 37                     | -95.26                 | -58.26               | -13         | -45.26      |
| 5                                                   | 390.11      | 33.6                   | -95.26                 | -61.66               | -13         | -48.66      |
| 6                                                   | 653.31      | 35                     | -95.26                 | -60.26               | -13         | -47.26      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 75.59       | 29                     | -95.26                 | -66.26               | -13         | -53.26      |
| 2                                                   | 159.32      | 29                     | -95.26                 | -66.26               | -13         | -53.26      |
| 3                                                   | 196.14      | 31.4                   | -95.26                 | -63.86               | -13         | -50.86      |
| 4                                                   | 302.08      | 35.6                   | -95.26                 | -59.66               | -13         | -46.66      |
| 5                                                   | 403.29      | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 6                                                   | 644.67      | 34.3                   | -95.26                 | -60.96               | -13         | -47.96      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 73.64       | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 2   | 159.24      | 28.9                   | -95.26                 | -66.36               | -13         | -53.36      |
| 3   | 206.28      | 29.5                   | -95.26                 | -65.76               | -13         | -52.76      |
| 4   | 293.07      | 37.4                   | -95.26                 | -57.86               | -13         | -44.86      |
| 5   | 392.25      | 34.1                   | -95.26                 | -61.16               | -13         | -48.16      |
| 6   | 649.26      | 34.6                   | -95.26                 | -60.66               | -13         | -47.66      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 69.39       | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 2   | 151.68      | 31                     | -95.26                 | -64.26               | -13         | -51.26      |
| 3   | 195.16      | 32.9                   | -95.26                 | -62.36               | -13         | -49.36      |
| 4   | 297.45      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 5   | 406.36      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| 6   | 643.45      | 34.2                   | -95.26                 | -61.06               | -13         | -48.06      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20393 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 84.31       | 27.5                   | -95.26                 | -67.76               | -13         | -54.76      |
| 2                                                   | 145.85      | 29.7                   | -95.26                 | -65.56               | -13         | -52.56      |
| 3                                                   | 199.85      | 31.7                   | -95.26                 | -63.56               | -13         | -50.56      |
| 4                                                   | 297.84      | 35.2                   | -95.26                 | -60.06               | -13         | -47.06      |
| 5                                                   | 397.87      | 33.6                   | -95.26                 | -61.66               | -13         | -48.66      |
| 6                                                   | 647.59      | 34.7                   | -95.26                 | -60.56               | -13         | -47.56      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 70.74       | 29.5                   | -95.26                 | -65.76               | -13         | -52.76      |
| 2                                                   | 150.18      | 31.5                   | -95.26                 | -63.76               | -13         | -50.76      |
| 3                                                   | 192.03      | 31.4                   | -95.26                 | -63.86               | -13         | -50.86      |
| 4                                                   | 296.01      | 36.3                   | -95.26                 | -58.96               | -13         | -45.96      |
| 5                                                   | 401.6       | 37                     | -95.26                 | -58.26               | -13         | -45.26      |
| 6                                                   | 649.93      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

# LTE Band 4: 3MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19965 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 70.01       | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 2                                                   | 157.39      | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 3                                                   | 205.69      | 32.8                   | -95.26                 | -62.46               | -13         | -49.46      |
| 4                                                   | 291.86      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| 5                                                   | 393.68      | 33.3                   | -95.26                 | -61.96               | -13         | -48.96      |
| 6                                                   | 644.13      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 73.85       | 30.8                   | -95.26                 | -64.46               | -13         | -51.46      |
| 2                                                   | 158.71      | 30.1                   | -95.26                 | -65.16               | -13         | -52.16      |
| 3                                                   | 192.42      | 30.5                   | -95.26                 | -64.76               | -13         | -51.76      |
| 4                                                   | 307.93      | 38.2                   | -95.26                 | -57.06               | -13         | -44.06      |
| 5                                                   | 391.68      | 35.9                   | -95.26                 | -59.36               | -13         | -46.36      |
| 6                                                   | 641.29      | 36.5                   | -95.26                 | -58.76               | -13         | -45.76      |

## Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 74.95       | 29.4                   | -95.26                 | -65.86               | -13         | -52.86      |
| 2                                                   | 159.89      | 31.5                   | -95.26                 | -63.76               | -13         | -50.76      |
| 3                                                   | 190.31      | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 4                                                   | 297.05      | 38.4                   | -95.26                 | -56.86               | -13         | -43.86      |
| 5                                                   | 398.19      | 35.1                   | -95.26                 | -60.16               | -13         | -47.16      |
| 6                                                   | 645.86      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 66.96       | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 2                                                   | 150.74      | 29.4                   | -95.26                 | -65.86               | -13         | -52.86      |
| 3                                                   | 202.57      | 30.9                   | -95.26                 | -64.36               | -13         | -51.36      |
| 4                                                   | 302.95      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| 5                                                   | 395.12      | 35.2                   | -95.26                 | -60.06               | -13         | -47.06      |
| 6                                                   | 646.18      | 34.9                   | -95.26                 | -60.36               | -13         | -47.36      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20385 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 67.49       | 30.1                   | -95.26                 | -65.16               | -13         | -52.16      |
| 2                                                   | 152.52      | 30.5                   | -95.26                 | -64.76               | -13         | -51.76      |
| 3                                                   | 201.83      | 30.6                   | -95.26                 | -64.66               | -13         | -51.66      |
| 4                                                   | 290.97      | 37.5                   | -95.26                 | -57.76               | -13         | -44.76      |
| 5                                                   | 401.91      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 6                                                   | 658.36      | 34.7                   | -95.26                 | -60.56               | -13         | -47.56      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 71.73       | 27.4                   | -95.26                 | -67.86               | -13         | -54.86      |
| 2                                                   | 143.1       | 30                     | -95.26                 | -65.26               | -13         | -52.26      |
| 3                                                   | 198.84      | 32.6                   | -95.26                 | -62.66               | -13         | -49.66      |
| 4                                                   | 295.36      | 37.2                   | -95.26                 | -58.06               | -13         | -45.06      |
| 5                                                   | 405.83      | 33.3                   | -95.26                 | -61.96               | -13         | -48.96      |
| 6                                                   | 652.86      | 35.9                   | -95.26                 | -59.36               | -13         | -46.36      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

# LTE Band 4: 5MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19975 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 82.73       | 27.7                   | -95.26                 | -67.56               | -13         | -54.56      |
| 2                                                   | 146.58      | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 3                                                   | 193.24      | 32                     | -95.26                 | -63.26               | -13         | -50.26      |
| 4                                                   | 302.72      | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 5                                                   | 405.39      | 34.2                   | -95.26                 | -61.06               | -13         | -48.06      |
| 6                                                   | 642.51      | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 75.16       | 27.5                   | -95.26                 | -67.76               | -13         | -54.76      |
| 2                                                   | 143.33      | 30.6                   | -95.26                 | -64.66               | -13         | -51.66      |
| 3                                                   | 191.5       | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 4                                                   | 302.4       | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 5                                                   | 400.84      | 35.6                   | -95.26                 | -59.66               | -13         | -46.66      |
| 6                                                   | 644.01      | 36.5                   | -95.26                 | -58.76               | -13         | -45.76      |

## Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 79.16          | 27.2                      | -95.26                    | -68.06                  | -13            | -55.06      |
| 2   | 158.64         | 30.8                      | -95.26                    | -64.46                  | -13            | -51.46      |
| 3   | 208.14         | 30.8                      | -95.26                    | -64.46                  | -13            | -51.46      |
| 4   | 307.6          | 37.4                      | -95.26                    | -57.86                  | -13            | -44.86      |
| 5   | 397.46         | 36.4                      | -95.26                    | -58.86                  | -13            | -45.86      |
| 6   | 644.92         | 35.6                      | -95.26                    | -59.66                  | -13            | -46.66      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 75.86          | 29.9                      | -95.26                    | -65.36                  | -13            | -52.36      |
| 2   | 149.57         | 30.8                      | -95.26                    | -64.46                  | -13            | -51.46      |
| 3   | 192.38         | 29                        | -95.26                    | -66.26                  | -13            | -53.26      |
| 4   | 309.25         | 36.4                      | -95.26                    | -58.86                  | -13            | -45.86      |
| 5   | 393.76         | 36.3                      | -95.26                    | -58.96                  | -13            | -45.96      |
| 6   | 640.61         | 37                        | -95.26                    | -58.26                  | -13            | -45.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.



|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20375 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 83.62       | 29.3                   | -95.26                 | -65.96               | -13         | -52.96      |
| 2                                                   | 159.42      | 31.5                   | -95.26                 | -63.76               | -13         | -50.76      |
| 3                                                   | 203.37      | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 4                                                   | 300.09      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 5                                                   | 398.89      | 33.7                   | -95.26                 | -61.56               | -13         | -48.56      |
| 6                                                   | 659.49      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 82.74       | 29                     | -95.26                 | -66.26               | -13         | -53.26      |
| 2                                                   | 145.44      | 31.1                   | -95.26                 | -64.16               | -13         | -51.16      |
| 3                                                   | 202.79      | 31.7                   | -95.26                 | -63.56               | -13         | -50.56      |
| 4                                                   | 292.9       | 36.5                   | -95.26                 | -58.76               | -13         | -45.76      |
| 5                                                   | 396.53      | 33.9                   | -95.26                 | -61.36               | -13         | -48.36      |
| 6                                                   | 658.18      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

# LTE Band 4: 10MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20000 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 66.67       | 28.4                   | -95.26                 | -66.86               | -13         | -53.86      |
| 2                                                   | 143.89      | 31.8                   | -95.26                 | -63.46               | -13         | -50.46      |
| 3                                                   | 205.23      | 29.7                   | -95.26                 | -65.56               | -13         | -52.56      |
| 4                                                   | 297.05      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| 5                                                   | 409.91      | 33.9                   | -95.26                 | -61.36               | -13         | -48.36      |
| 6                                                   | 648.29      | 37.8                   | -95.26                 | -57.46               | -13         | -44.46      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 65.19       | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 2                                                   | 151.86      | 29.8                   | -95.26                 | -65.46               | -13         | -52.46      |
| 3                                                   | 204.05      | 29.7                   | -95.26                 | -65.56               | -13         | -52.56      |
| 4                                                   | 309.76      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| 5                                                   | 395.14      | 33.2                   | -95.26                 | -62.06               | -13         | -49.06      |
| 6                                                   | 648.48      | 34.4                   | -95.26                 | -60.86               | -13         | -47.86      |

## Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 72.88       | 29.9                   | -95.26                 | -65.36               | -13         | -52.36      |
| 2                                                   | 152.87      | 29.3                   | -95.26                 | -65.96               | -13         | -52.96      |
| 3                                                   | 192.08      | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 4                                                   | 294.13      | 38.6                   | -95.26                 | -56.66               | -13         | -43.66      |
| 5                                                   | 390.35      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 6                                                   | 644.91      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 71.25       | 28.5                   | -95.26                 | -66.76               | -13         | -53.76      |
| 2                                                   | 149.43      | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 3                                                   | 200.45      | 30.3                   | -95.26                 | -64.96               | -13         | -51.96      |
| 4                                                   | 303.34      | 37.9                   | -95.26                 | -57.36               | -13         | -44.36      |
| 5                                                   | 402.39      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 6                                                   | 659.99      | 38                     | -95.26                 | -57.26               | -13         | -44.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20350 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 74.44       | 28.2                   | -95.26                 | -67.06               | -13         | -54.06      |
| 2                                                   | 159.74      | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 3                                                   | 203.52      | 31.3                   | -95.26                 | -63.96               | -13         | -50.96      |
| 4                                                   | 293.48      | 37.3                   | -95.26                 | -57.96               | -13         | -44.96      |
| 5                                                   | 396.21      | 35.7                   | -95.26                 | -59.56               | -13         | -46.56      |
| 6                                                   | 647.56      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 65.21       | 27.2                   | -95.26                 | -68.06               | -13         | -55.06      |
| 2                                                   | 150.53      | 30                     | -95.26                 | -65.26               | -13         | -52.26      |
| 3                                                   | 200.75      | 30                     | -95.26                 | -65.26               | -13         | -52.26      |
| 4                                                   | 302.77      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| 5                                                   | 394.41      | 34.8                   | -95.26                 | -60.46               | -13         | -47.46      |
| 6                                                   | 651.33      | 34.6                   | -95.26                 | -60.66               | -13         | -47.66      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

# LTE Band 4: 15MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20025 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 71.27       | 28.7                   | -95.26                 | -66.56               | -13         | -53.56      |
| 2                                                   | 159.06      | 30.4                   | -95.26                 | -64.86               | -13         | -51.86      |
| 3                                                   | 192.58      | 31.3                   | -95.26                 | -63.96               | -13         | -50.96      |
| 4                                                   | 296.32      | 35.1                   | -95.26                 | -60.16               | -13         | -47.16      |
| 5                                                   | 398.47      | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| 6                                                   | 645.81      | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 82.21       | 28.3                   | -95.26                 | -66.96               | -13         | -53.96      |
| 2                                                   | 157.63      | 29.3                   | -95.26                 | -65.96               | -13         | -52.96      |
| 3                                                   | 191.38      | 31.5                   | -95.26                 | -63.76               | -13         | -50.76      |
| 4                                                   | 295.93      | 38.1                   | -95.26                 | -57.16               | -13         | -44.16      |
| 5                                                   | 405.12      | 34.6                   | -95.26                 | -60.66               | -13         | -47.66      |
| 6                                                   | 645.27      | 36.6                   | -95.26                 | -58.66               | -13         | -45.66      |

## Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 80.47          | 27.7                      | -95.26                    | -67.56                  | -13            | -54.56      |
| 2   | 152.14         | 31.3                      | -95.26                    | -63.96                  | -13            | -50.96      |
| 3   | 205.54         | 29.5                      | -95.26                    | -65.76                  | -13            | -52.76      |
| 4   | 305.82         | 37.3                      | -95.26                    | -57.96                  | -13            | -44.96      |
| 5   | 394.34         | 36.7                      | -95.26                    | -58.56                  | -13            | -45.56      |
| 6   | 649.34         | 35.4                      | -95.26                    | -59.86                  | -13            | -46.86      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 74.38          | 28.1                      | -95.26                    | -67.16                  | -13            | -54.16      |
| 2   | 145.12         | 30.4                      | -95.26                    | -64.86                  | -13            | -51.86      |
| 3   | 197.85         | 32.5                      | -95.26                    | -62.76                  | -13            | -49.76      |
| 4   | 291.64         | 35.1                      | -95.26                    | -60.16                  | -13            | -47.16      |
| 5   | 409.01         | 34.3                      | -95.26                    | -60.96                  | -13            | -47.96      |
| 6   | 640.15         | 36.8                      | -95.26                    | -58.46                  | -13            | -45.46      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20325 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 77.87       | 28.5                   | -95.26                 | -66.76               | -13         | -53.76      |
| 2                                                   | 150.37      | 30.8                   | -95.26                 | -64.46               | -13         | -51.46      |
| 3                                                   | 207.56      | 30.5                   | -95.26                 | -64.76               | -13         | -51.76      |
| 4                                                   | 301.68      | 38.9                   | -95.26                 | -56.36               | -13         | -43.36      |
| 5                                                   | 408.19      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 6                                                   | 653.4       | 37.6                   | -95.26                 | -57.66               | -13         | -44.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 68.28       | 30                     | -95.26                 | -65.26               | -13         | -52.26      |
| 2                                                   | 144         | 28.7                   | -95.26                 | -66.56               | -13         | -53.56      |
| 3                                                   | 190.15      | 30.8                   | -95.26                 | -64.46               | -13         | -51.46      |
| 4                                                   | 292.1       | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 5                                                   | 390.84      | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 6                                                   | 652.47      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

# LTE Band 4: 20MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20050 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 70.78       | 27.3                   | -95.26                 | -67.96               | -13         | -54.96      |
| 2                                                   | 159.94      | 31.6                   | -95.26                 | -63.66               | -13         | -50.66      |
| 3                                                   | 208.74      | 31.2                   | -95.26                 | -64.06               | -13         | -51.06      |
| 4                                                   | 301.64      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 5                                                   | 406.78      | 33.9                   | -95.26                 | -61.36               | -13         | -48.36      |
| 6                                                   | 643.21      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 66.7        | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 2                                                   | 153.34      | 30.6                   | -95.26                 | -64.66               | -13         | -51.66      |
| 3                                                   | 208.2       | 31.8                   | -95.26                 | -63.46               | -13         | -50.46      |
| 4                                                   | 306.81      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| 5                                                   | 392.69      | 35.9                   | -95.26                 | -59.36               | -13         | -46.36      |
| 6                                                   | 659.72      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |

## Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.



|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 66.73          | 30.7                      | -95.26                    | -64.56                  | -13            | -51.56      |
| 2   | 142.27         | 31.4                      | -95.26                    | -63.86                  | -13            | -50.86      |
| 3   | 204.03         | 29.8                      | -95.26                    | -65.46                  | -13            | -52.46      |
| 4   | 308.29         | 35.1                      | -95.26                    | -60.16                  | -13            | -47.16      |
| 5   | 391.46         | 36.6                      | -95.26                    | -58.66                  | -13            | -45.66      |
| 6   | 644.1          | 38                        | -95.26                    | -57.26                  | -13            | -44.26      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 74.01          | 28                        | -95.26                    | -67.26                  | -13            | -54.26      |
| 2   | 151.52         | 30.5                      | -95.26                    | -64.76                  | -13            | -51.76      |
| 3   | 195.52         | 30.6                      | -95.26                    | -64.66                  | -13            | -51.66      |
| 4   | 297.63         | 36.1                      | -95.26                    | -59.16                  | -13            | -46.16      |
| 5   | 391.35         | 36.1                      | -95.26                    | -59.16                  | -13            | -46.16      |
| 6   | 640.86         | 37.5                      | -95.26                    | -57.76                  | -13            | -44.76      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20300 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 74.43          | 30.7                      | -95.26                    | -64.56                  | -13            | -51.56      |
| 2   | 156.12         | 31.6                      | -95.26                    | -63.66                  | -13            | -50.66      |
| 3   | 204.79         | 31.5                      | -95.26                    | -63.76                  | -13            | -50.76      |
| 4   | 300.66         | 36.9                      | -95.26                    | -58.36                  | -13            | -45.36      |
| 5   | 394.73         | 36.6                      | -95.26                    | -58.66                  | -13            | -45.66      |
| 6   | 645.9          | 37.9                      | -95.26                    | -57.36                  | -13            | -44.36      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 73.13          | 30.6                      | -95.26                    | -64.66                  | -13            | -51.66      |
| 2   | 157.72         | 28                        | -95.26                    | -67.26                  | -13            | -54.26      |
| 3   | 197.73         | 29.4                      | -95.26                    | -65.86                  | -13            | -52.86      |
| 4   | 303.35         | 36.9                      | -95.26                    | -58.36                  | -13            | -45.36      |
| 5   | 391.61         | 35.2                      | -95.26                    | -60.06                  | -13            | -47.06      |
| 6   | 642.52         | 36.3                      | -95.26                    | -58.96                  | -13            | -45.96      |

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 12: 1.4MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23017 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

#### Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 78.95       | 27.1                   | -95.26                 | -68.16               | -13         | -55.16      |
| 2   | 141.46      | 31.6                   | -95.26                 | -63.66               | -13         | -50.66      |
| 3   | 206.57      | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 4   | 292.63      | 35.3                   | -95.26                 | -59.96               | -13         | -46.96      |
| 5   | 390.69      | 34.9                   | -95.26                 | -60.36               | -13         | -47.36      |
| 6   | 645.27      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |

#### Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 65.06       | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 2   | 142.06      | 28.5                   | -95.26                 | -66.76               | -13         | -53.76      |
| 3   | 196.18      | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 4   | 293.72      | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 5   | 403.94      | 33.7                   | -95.26                 | -61.56               | -13         | -48.56      |
| 6   | 647.78      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 73.84          | 27.5                      | -95.26                    | -67.76                  | -13            | -54.76      |
| 2   | 153.97         | 29.5                      | -95.26                    | -65.76                  | -13            | -52.76      |
| 3   | 192.27         | 31.9                      | -95.26                    | -63.36                  | -13            | -50.36      |
| 4   | 290.53         | 37.7                      | -95.26                    | -57.56                  | -13            | -44.56      |
| 5   | 394.69         | 36.7                      | -95.26                    | -58.56                  | -13            | -45.56      |
| 6   | 643.42         | 34.2                      | -95.26                    | -61.06                  | -13            | -48.06      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 78.09          | 28.3                      | -95.26                    | -66.96                  | -13            | -53.96      |
| 2   | 142.47         | 32                        | -95.26                    | -63.26                  | -13            | -50.26      |
| 3   | 195.51         | 30.9                      | -95.26                    | -64.36                  | -13            | -51.36      |
| 4   | 302.29         | 38                        | -95.26                    | -57.26                  | -13            | -44.26      |
| 5   | 408.06         | 34.8                      | -95.26                    | -60.46                  | -13            | -47.46      |
| 6   | 655.7          | 35.7                      | -95.26                    | -59.56                  | -13            | -46.56      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23173 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 80.63          | 28.6                      | -95.26                    | -66.66                  | -13            | -53.66      |
| 2   | 146.8          | 31.9                      | -95.26                    | -63.36                  | -13            | -50.36      |
| 3   | 197.84         | 29.7                      | -95.26                    | -65.56                  | -13            | -52.56      |
| 4   | 303.18         | 36.3                      | -95.26                    | -58.96                  | -13            | -45.96      |
| 5   | 397.43         | 34.5                      | -95.26                    | -60.76                  | -13            | -47.76      |
| 6   | 659.95         | 36.5                      | -95.26                    | -58.76                  | -13            | -45.76      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 74.78          | 28.2                      | -95.26                    | -67.06                  | -13            | -54.06      |
| 2   | 142.43         | 31.1                      | -95.26                    | -64.16                  | -13            | -51.16      |
| 3   | 202.33         | 30.9                      | -95.26                    | -64.36                  | -13            | -51.36      |
| 4   | 308.68         | 36.8                      | -95.26                    | -58.46                  | -13            | -45.46      |
| 5   | 409.31         | 34.6                      | -95.26                    | -60.66                  | -13            | -47.66      |
| 6   | 650.01         | 34.7                      | -95.26                    | -60.56                  | -13            | -47.56      |

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 12: 3MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23025 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

#### Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 76.77       | 29.9                   | -95.26                 | -65.36               | -13         | -52.36      |
| 2   | 157.25      | 28.7                   | -95.26                 | -66.56               | -13         | -53.56      |
| 3   | 195.22      | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 4   | 292.07      | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 5   | 390.31      | 33.5                   | -95.26                 | -61.76               | -13         | -48.76      |
| 6   | 642.64      | 37.2                   | -95.26                 | -58.06               | -13         | -45.06      |

#### Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 70.73       | 27.7                   | -95.26                 | -67.56               | -13         | -54.56      |
| 2   | 145.05      | 29.6                   | -95.26                 | -65.66               | -13         | -52.66      |
| 3   | 205.05      | 32.2                   | -95.26                 | -63.06               | -13         | -50.06      |
| 4   | 302.03      | 38.1                   | -95.26                 | -57.16               | -13         | -44.16      |
| 5   | 403.92      | 35                     | -95.26                 | -60.26               | -13         | -47.26      |
| 6   | 649.9       | 36.5                   | -95.26                 | -58.76               | -13         | -45.76      |

#### Remarks:

- Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
- Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 65.28          | 27.9                      | -95.26                    | -67.36                  | -13            | -54.36      |
| 2   | 145.51         | 29.1                      | -95.26                    | -66.16                  | -13            | -53.16      |
| 3   | 200.56         | 29.4                      | -95.26                    | -65.86                  | -13            | -52.86      |
| 4   | 297.22         | 35.1                      | -95.26                    | -60.16                  | -13            | -47.16      |
| 5   | 397.31         | 36.2                      | -95.26                    | -59.06                  | -13            | -46.06      |
| 6   | 654.47         | 34                        | -95.26                    | -61.26                  | -13            | -48.26      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 66.53          | 29.7                      | -95.26                    | -65.56                  | -13            | -52.56      |
| 2   | 158.23         | 31.4                      | -95.26                    | -63.86                  | -13            | -50.86      |
| 3   | 198.44         | 32.4                      | -95.26                    | -62.86                  | -13            | -49.86      |
| 4   | 309.84         | 38.1                      | -95.26                    | -57.16                  | -13            | -44.16      |
| 5   | 406.47         | 35.4                      | -95.26                    | -59.86                  | -13            | -46.86      |
| 6   | 657.97         | 36.1                      | -95.26                    | -59.16                  | -13            | -46.16      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23165 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 67.68       | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 2   | 148.53      | 31.7                   | -95.26                 | -63.56               | -13         | -50.56      |
| 3   | 197.01      | 31.6                   | -95.26                 | -63.66               | -13         | -50.66      |
| 4   | 307.25      | 37                     | -95.26                 | -58.26               | -13         | -45.26      |
| 5   | 391.26      | 35                     | -95.26                 | -60.26               | -13         | -47.26      |
| 6   | 653.59      | 36.7                   | -95.26                 | -58.56               | -13         | -45.56      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 78.39       | 30.6                   | -95.26                 | -64.66               | -13         | -51.66      |
| 2   | 147.01      | 28.6                   | -95.26                 | -66.66               | -13         | -53.66      |
| 3   | 191.81      | 30.9                   | -95.26                 | -64.36               | -13         | -51.36      |
| 4   | 291.22      | 38.5                   | -95.26                 | -56.76               | -13         | -43.76      |
| 5   | 390.66      | 33.2                   | -95.26                 | -62.06               | -13         | -49.06      |
| 6   | 656.54      | 37.6                   | -95.26                 | -57.66               | -13         | -44.66      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.



### LTE Band 12: 5MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23035 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

#### Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 71.16       | 27                     | -95.26                 | -68.26               | -13         | -55.26      |
| 2   | 146.6       | 29.3                   | -95.26                 | -65.96               | -13         | -52.96      |
| 3   | 205.55      | 30.2                   | -95.26                 | -65.06               | -13         | -52.06      |
| 4   | 294.9       | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| 5   | 390.16      | 33.1                   | -95.26                 | -62.16               | -13         | -49.16      |
| 6   | 640.63      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |

#### Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 84.19       | 28.1                   | -95.26                 | -67.16               | -13         | -54.16      |
| 2   | 154.09      | 28.8                   | -95.26                 | -66.46               | -13         | -53.46      |
| 3   | 209.79      | 30.8                   | -95.26                 | -64.46               | -13         | -51.46      |
| 4   | 303.93      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| 5   | 391.44      | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| 6   | 640.38      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 83.38          | 27.1                      | -95.26                    | -68.16                  | -13            | -55.16      |
| 2   | 148.05         | 32                        | -95.26                    | -63.26                  | -13            | -50.26      |
| 3   | 207.68         | 29.3                      | -95.26                    | -65.96                  | -13            | -52.96      |
| 4   | 302.35         | 36.4                      | -95.26                    | -58.86                  | -13            | -45.86      |
| 5   | 403.06         | 35.9                      | -95.26                    | -59.36                  | -13            | -46.36      |
| 6   | 656.92         | 36.8                      | -95.26                    | -58.46                  | -13            | -45.46      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 81.23          | 27.2                      | -95.26                    | -68.06                  | -13            | -55.06      |
| 2   | 153.57         | 28.8                      | -95.26                    | -66.46                  | -13            | -53.46      |
| 3   | 194.46         | 32.6                      | -95.26                    | -62.66                  | -13            | -49.66      |
| 4   | 300.23         | 38.4                      | -95.26                    | -56.86                  | -13            | -43.86      |
| 5   | 391.46         | 34.1                      | -95.26                    | -61.16                  | -13            | -48.16      |
| 6   | 652.64         | 36.9                      | -95.26                    | -58.36                  | -13            | -45.36      |

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23155 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 66.94       | 30.8                   | -95.26                 | -64.46               | -13         | -51.46      |
| 2                                                   | 157.74      | 29.1                   | -95.26                 | -66.16               | -13         | -53.16      |
| 3                                                   | 196.89      | 32                     | -95.26                 | -63.26               | -13         | -50.26      |
| 4                                                   | 305.65      | 37                     | -95.26                 | -58.26               | -13         | -45.26      |
| 5                                                   | 392.47      | 36.8                   | -95.26                 | -58.46               | -13         | -45.46      |
| 6                                                   | 648.86      | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 65.34       | 28.5                   | -95.26                 | -66.76               | -13         | -53.76      |
| 2                                                   | 153.24      | 31.5                   | -95.26                 | -63.76               | -13         | -50.76      |
| 3                                                   | 190.91      | 30.2                   | -95.26                 | -65.06               | -13         | -52.06      |
| 4                                                   | 303.87      | 38.7                   | -95.26                 | -56.56               | -13         | -43.56      |
| 5                                                   | 394.98      | 34.7                   | -95.26                 | -60.56               | -13         | -47.56      |
| 6                                                   | 646.21      | 34.4                   | -95.26                 | -60.86               | -13         | -47.86      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 12: 10MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23060 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 79.47       | 28.7                   | -95.26                 | -66.56               | -13         | -53.56      |
| 2                                                   | 158.67      | 29.2                   | -95.26                 | -66.06               | -13         | -53.06      |
| 3                                                   | 196.25      | 32.8                   | -95.26                 | -62.46               | -13         | -49.46      |
| 4                                                   | 298.64      | 35.9                   | -95.26                 | -59.36               | -13         | -46.36      |
| 5                                                   | 399.75      | 34.6                   | -95.26                 | -60.66               | -13         | -47.66      |
| 6                                                   | 649.05      | 35.1                   | -95.26                 | -60.16               | -13         | -47.16      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 70.18       | 28.3                   | -95.26                 | -66.96               | -13         | -53.96      |
| 2                                                   | 148.61      | 31.6                   | -95.26                 | -63.66               | -13         | -50.66      |
| 3                                                   | 205.1       | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 4                                                   | 301.56      | 35                     | -95.26                 | -60.26               | -13         | -47.26      |
| 5                                                   | 393.29      | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| 6                                                   | 645.76      | 36.9                   | -95.26                 | -58.36               | -13         | -45.36      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 79.24          | 30.3                      | -95.26                    | -64.96                  | -13            | -51.96      |
| 2   | 151.67         | 29.2                      | -95.26                    | -66.06                  | -13            | -53.06      |
| 3   | 207.69         | 32.3                      | -95.26                    | -62.96                  | -13            | -49.96      |
| 4   | 297.26         | 35.1                      | -95.26                    | -60.16                  | -13            | -47.16      |
| 5   | 406.56         | 36                        | -95.26                    | -59.26                  | -13            | -46.26      |
| 6   | 643.97         | 37.4                      | -95.26                    | -57.86                  | -13            | -44.86      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 71.46          | 28.6                      | -95.26                    | -66.66                  | -13            | -53.66      |
| 2   | 155.62         | 28.4                      | -95.26                    | -66.86                  | -13            | -53.86      |
| 3   | 199.62         | 32                        | -95.26                    | -63.26                  | -13            | -50.26      |
| 4   | 298.08         | 38.5                      | -95.26                    | -56.76                  | -13            | -43.76      |
| 5   | 394.16         | 33.6                      | -95.26                    | -61.66                  | -13            | -48.66      |
| 6   | 640.75         | 34.4                      | -95.26                    | -60.86                  | -13            | -47.86      |

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23130 | Frequency Range | Below 1000 MHz |
|------|------------------|-----------------|----------------|

**Antenna Polarity & Test Distance: Horizontal at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 66.36          | 30.8                      | -95.26                    | -64.46                  | -13            | -51.46      |
| 2   | 143.14         | 28                        | -95.26                    | -67.26                  | -13            | -54.26      |
| 3   | 204.43         | 30.1                      | -95.26                    | -65.16                  | -13            | -52.16      |
| 4   | 295.81         | 36                        | -95.26                    | -59.26                  | -13            | -46.26      |
| 5   | 407.32         | 36.1                      | -95.26                    | -59.16                  | -13            | -46.16      |
| 6   | 643.93         | 37.5                      | -95.26                    | -57.76                  | -13            | -44.76      |

**Antenna Polarity & Test Distance: Vertical at 3 M**

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 66.58          | 27.3                      | -95.26                    | -67.96                  | -13            | -54.96      |
| 2   | 152.92         | 30.4                      | -95.26                    | -64.86                  | -13            | -51.86      |
| 3   | 196.46         | 29.1                      | -95.26                    | -66.16                  | -13            | -53.16      |
| 4   | 293            | 36.4                      | -95.26                    | -58.86                  | -13            | -45.86      |
| 5   | 394.82         | 34                        | -95.26                    | -61.26                  | -13            | -48.26      |
| 6   | 644.44         | 37.1                      | -95.26                    | -58.16                  | -13            | -45.16      |

**Remarks:**

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

ABOVE 1GHz

**LTE Band 4: 1.4MHz**

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19957 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |                |                           |                           |                         |                |             |
|-----------------------------------------------------|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| No.                                                 | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
| 1                                                   | 3421.4         | 37.8                      | -95.26                    | -57.46                  | -13            | -44.46      |
| 2                                                   | 5132.1         | 41.6                      | -95.26                    | -53.66                  | -13            | -40.66      |
| 3                                                   | 6842.8         | 44.2                      | -95.26                    | -51.06                  | -13            | -38.06      |
| 4                                                   | 8553.5         | 47.6                      | -95.26                    | -47.66                  | -13            | -34.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |                |                           |                           |                         |                |             |
| No.                                                 | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
| 1                                                   | 3421.4         | 38.4                      | -95.26                    | -56.86                  | -13            | -43.86      |
| 2                                                   | 5132.1         | 43.4                      | -95.26                    | -51.86                  | -13            | -38.86      |
| 3                                                   | 6842.8         | 47                        | -95.26                    | -48.26                  | -13            | -35.26      |
| 4                                                   | 8553.5         | 47.7                      | -95.26                    | -47.56                  | -13            | -34.56      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 38.4                   | -95.26                 | -56.86               | -13         | -43.86      |
| 2                                                   | 5197.5      | 42.4                   | -95.26                 | -52.86               | -13         | -39.86      |
| 3                                                   | 6930        | 47                     | -95.26                 | -48.26               | -13         | -35.26      |
| 4                                                   | 8662.5      | 46.7                   | -95.26                 | -48.56               | -13         | -35.56      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 38.3                   | -95.26                 | -56.96               | -13         | -43.96      |
| 2                                                   | 5197.5      | 41.2                   | -95.26                 | -54.06               | -13         | -41.06      |
| 3                                                   | 6930        | 44.2                   | -95.26                 | -51.06               | -13         | -38.06      |
| 4                                                   | 8662.5      | 47.4                   | -95.26                 | -47.86               | -13         | -34.86      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.



|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20393 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3508.6      | 39.4                   | -95.26                 | -55.86               | -13         | -42.86      |
| 2                                                   | 5262.9      | 42.7                   | -95.26                 | -52.56               | -13         | -39.56      |
| 3                                                   | 7017.2      | 43.3                   | -95.26                 | -51.96               | -13         | -38.96      |
| 4                                                   | 8771.5      | 46.6                   | -95.26                 | -48.66               | -13         | -35.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3508.6      | 39.2                   | -95.26                 | -56.06               | -13         | -43.06      |
| 2                                                   | 5262.9      | 41.5                   | -95.26                 | -53.76               | -13         | -40.76      |
| 3                                                   | 7017.2      | 46.8                   | -95.26                 | -48.46               | -13         | -35.46      |
| 4                                                   | 8771.5      | 47                     | -95.26                 | -48.26               | -13         | -35.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

### LTE Band 4: 3MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19965 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3423        | 36.5                   | -95.26                 | -58.76               | -13         | -45.76      |
| 2                                                   | 5134.5      | 41.2                   | -95.26                 | -54.06               | -13         | -41.06      |
| 3                                                   | 6846        | 45.1                   | -95.26                 | -50.16               | -13         | -37.16      |
| 4                                                   | 8557.5      | 47.4                   | -95.26                 | -47.86               | -13         | -34.86      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3423        | 38.3                   | -95.26                 | -56.96               | -13         | -43.96      |
| 2                                                   | 5134.5      | 43.3                   | -95.26                 | -51.96               | -13         | -38.96      |
| 3                                                   | 6846        | 44.1                   | -95.26                 | -51.16               | -13         | -38.16      |
| 4                                                   | 8557.5      | 47.9                   | -95.26                 | -47.36               | -13         | -34.36      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 2                                                   | 5197.5      | 41.1                   | -95.26                 | -54.16               | -13         | -41.16      |
| 3                                                   | 6930        | 46.3                   | -95.26                 | -48.96               | -13         | -35.96      |
| 4                                                   | 8662.5      | 48                     | -95.26                 | -47.26               | -13         | -34.26      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 37.6                   | -95.26                 | -57.66               | -13         | -44.66      |
| 2                                                   | 5197.5      | 40.2                   | -95.26                 | -55.06               | -13         | -42.06      |
| 3                                                   | 6930        | 47                     | -95.26                 | -48.26               | -13         | -35.26      |
| 4                                                   | 8662.5      | 47                     | -95.26                 | -48.26               | -13         | -35.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20385 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3507        | 38.6                   | -95.26                 | -56.66               | -13         | -43.66      |
| 2                                                   | 5260.5      | 41.3                   | -95.26                 | -53.96               | -13         | -40.96      |
| 3                                                   | 7014        | 45                     | -95.26                 | -50.26               | -13         | -37.26      |
| 4                                                   | 8767.5      | 46.6                   | -95.26                 | -48.66               | -13         | -35.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3507        | 37.1                   | -95.26                 | -58.16               | -13         | -45.16      |
| 2                                                   | 5260.5      | 41.1                   | -95.26                 | -54.16               | -13         | -41.16      |
| 3                                                   | 7014        | 44.2                   | -95.26                 | -51.06               | -13         | -38.06      |
| 4                                                   | 8767.5      | 47.8                   | -95.26                 | -47.46               | -13         | -34.46      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

#### LTE Band 4: 5MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 19975 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |               |                        |                        |                      |             |               |
|-----------------------------------------------------|---------------|------------------------|------------------------|----------------------|-------------|---------------|
| No.                                                 | Freq. (MHz)   | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB)   |
| 1                                                   | 3425          | 39.4                   | -95.26                 | -55.86               | -13         | -42.86        |
| 2                                                   | 5137.5        | 41.6                   | -95.26                 | -53.66               | -13         | -40.66        |
| 3                                                   | 6850          | 45.9                   | -95.26                 | -49.36               | -13         | -36.36        |
| 4                                                   | <b>8562.5</b> | <b>50</b>              | <b>-95.26</b>          | <b>-45.26</b>        | <b>-13</b>  | <b>-32.26</b> |
| Antenna Polarity & Test Distance: Vertical at 3 M   |               |                        |                        |                      |             |               |
| No.                                                 | Freq. (MHz)   | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB)   |
| 1                                                   | 3425          | 38.4                   | -95.26                 | -56.86               | -13         | -43.86        |
| 2                                                   | 5137.5        | 41.7                   | -95.26                 | -53.56               | -13         | -40.56        |
| 3                                                   | 6850          | 46.1                   | -95.26                 | -49.16               | -13         | -36.16        |
| 4                                                   | 8562.5        | 47.6                   | -95.26                 | -47.66               | -13         | -34.66        |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 39.9                   | -95.26                 | -55.36               | -13         | -42.36      |
| 2                                                   | 5197.5      | 42.8                   | -95.26                 | -52.46               | -13         | -39.46      |
| 3                                                   | 6930        | 43.6                   | -95.26                 | -51.66               | -13         | -38.66      |
| 4                                                   | 8662.5      | 49.8                   | -95.26                 | -45.46               | -13         | -32.46      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 37.3                   | -95.26                 | -57.96               | -13         | -44.96      |
| 2                                                   | 5197.5      | 41                     | -95.26                 | -54.26               | -13         | -41.26      |
| 3                                                   | 6930        | 43.3                   | -95.26                 | -51.96               | -13         | -38.96      |
| 4                                                   | 8662.5      | 48.5                   | -95.26                 | -46.76               | -13         | -33.76      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20375 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3505        | 39.4                   | -95.26                 | -55.86               | -13         | -42.86      |
| 2                                                   | 5257.5      | 43                     | -95.26                 | -52.26               | -13         | -39.26      |
| 3                                                   | 7010        | 45.9                   | -95.26                 | -49.36               | -13         | -36.36      |
| 4                                                   | 8762.5      | 47.9                   | -95.26                 | -47.36               | -13         | -34.36      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3505        | 38.1                   | -95.26                 | -57.16               | -13         | -44.16      |
| 2                                                   | 5257.5      | 41.4                   | -95.26                 | -53.86               | -13         | -40.86      |
| 3                                                   | 7010        | 44                     | -95.26                 | -51.26               | -13         | -38.26      |
| 4                                                   | 8762.5      | 47.7                   | -95.26                 | -47.56               | -13         | -34.56      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 4: 10MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20000 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3430        | 36.2                   | -95.26                 | -59.06               | -13         | -46.06      |
| 2                                                   | 5145        | 42.8                   | -95.26                 | -52.46               | -13         | -39.46      |
| 3                                                   | 6860        | 44.9                   | -95.26                 | -50.36               | -13         | -37.36      |
| 4                                                   | 8575        | 49.9                   | -95.26                 | -45.36               | -13         | -32.36      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3430        | 40                     | -95.26                 | -55.26               | -13         | -42.26      |
| 2                                                   | 5145        | 40.3                   | -95.26                 | -54.96               | -13         | -41.96      |
| 3                                                   | 6860        | 45.6                   | -95.26                 | -49.66               | -13         | -36.66      |
| 4                                                   | 8575        | 48                     | -95.26                 | -47.26               | -13         | -34.26      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.



|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |                |                           |                           |                         |                |             |
|-----------------------------------------------------|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| No.                                                 | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
| 1                                                   | 3465           | 36.3                      | -95.26                    | -58.96                  | -13            | -45.96      |
| 2                                                   | 5197.5         | 42.3                      | -95.26                    | -52.96                  | -13            | -39.96      |
| 3                                                   | 6930           | 46.9                      | -95.26                    | -48.36                  | -13            | -35.36      |
| 4                                                   | 8662.5         | 49.7                      | -95.26                    | -45.56                  | -13            | -32.56      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |                |                           |                           |                         |                |             |
| No.                                                 | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
| 1                                                   | 3465           | 36.6                      | -95.26                    | -58.66                  | -13            | -45.66      |
| 2                                                   | 5197.5         | 42                        | -95.26                    | -53.26                  | -13            | -40.26      |
| 3                                                   | 6930           | 46.2                      | -95.26                    | -49.06                  | -13            | -36.06      |
| 4                                                   | 8662.5         | 49.2                      | -95.26                    | -46.06                  | -13            | -33.06      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20350 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3500        | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 2                                                   | 5250        | 41                     | -95.26                 | -54.26               | -13         | -41.26      |
| 3                                                   | 7000        | 46.2                   | -95.26                 | -49.06               | -13         | -36.06      |
| 4                                                   | 8750        | 47.9                   | -95.26                 | -47.36               | -13         | -34.36      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3500        | 37                     | -95.26                 | -58.26               | -13         | -45.26      |
| 2                                                   | 5250        | 42.8                   | -95.26                 | -52.46               | -13         | -39.46      |
| 3                                                   | 7000        | 46.9                   | -95.26                 | -48.36               | -13         | -35.36      |
| 4                                                   | 8750        | 47.6                   | -95.26                 | -47.66               | -13         | -34.66      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

#### LTE Band 4: 15MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20025 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3435        | 37.8                   | -95.26                 | -57.46               | -13         | -44.46      |
| 2                                                   | 5152.5      | 43.6                   | -95.26                 | -51.66               | -13         | -38.66      |
| 3                                                   | 6870        | 46.3                   | -95.26                 | -48.96               | -13         | -35.96      |
| 4                                                   | 8587.5      | 46.5                   | -95.26                 | -48.76               | -13         | -35.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3435        | 39                     | -95.26                 | -56.26               | -13         | -43.26      |
| 2                                                   | 5152.5      | 41.5                   | -95.26                 | -53.76               | -13         | -40.76      |
| 3                                                   | 6870        | 44                     | -95.26                 | -51.26               | -13         | -38.26      |
| 4                                                   | 8587.5      | 49.7                   | -95.26                 | -45.56               | -13         | -32.56      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 2                                                   | 5197.5      | 40.2                   | -95.26                 | -55.06               | -13         | -42.06      |
| 3                                                   | 6930        | 43.9                   | -95.26                 | -51.36               | -13         | -38.36      |
| 4                                                   | 8662.5      | 47.6                   | -95.26                 | -47.66               | -13         | -34.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 39                     | -95.26                 | -56.26               | -13         | -43.26      |
| 2                                                   | 5197.5      | 43.3                   | -95.26                 | -51.96               | -13         | -38.96      |
| 3                                                   | 6930        | 43.2                   | -95.26                 | -52.06               | -13         | -39.06      |
| 4                                                   | 8662.5      | 49.2                   | -95.26                 | -46.06               | -13         | -33.06      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20325 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495        | 40                     | -95.26                 | -55.26               | -13         | -42.26      |
| 2                                                   | 5242.5      | 41.1                   | -95.26                 | -54.16               | -13         | -41.16      |
| 3                                                   | 6990        | 45.8                   | -95.26                 | -49.46               | -13         | -36.46      |
| 4                                                   | 8737.5      | 48.5                   | -95.26                 | -46.76               | -13         | -33.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3495        | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 2                                                   | 5242.5      | 41.3                   | -95.26                 | -53.96               | -13         | -40.96      |
| 3                                                   | 6990        | 43.1                   | -95.26                 | -52.16               | -13         | -39.16      |
| 4                                                   | 8737.5      | 47                     | -95.26                 | -48.26               | -13         | -35.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

# LTE Band 4: 20MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20050 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3440        | 39.6                   | -95.26                 | -55.66               | -13         | -42.66      |
| 2                                                   | 5160        | 42.9                   | -95.26                 | -52.36               | -13         | -39.36      |
| 3                                                   | 6880        | 45.7                   | -95.26                 | -49.56               | -13         | -36.56      |
| 4                                                   | 8600        | 48.5                   | -95.26                 | -46.76               | -13         | -33.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3440        | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| 2                                                   | 5160        | 41.9                   | -95.26                 | -53.36               | -13         | -40.36      |
| 3                                                   | 6880        | 43                     | -95.26                 | -52.26               | -13         | -39.26      |
| 4                                                   | 8600        | 47.9                   | -95.26                 | -47.36               | -13         | -34.36      |

## Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20175 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 37.7                   | -95.26                 | -57.56               | -13         | -44.56      |
| 2                                                   | 5197.5      | 40.8                   | -95.26                 | -54.46               | -13         | -41.46      |
| 3                                                   | 6930        | 44.8                   | -95.26                 | -50.46               | -13         | -37.46      |
| 4                                                   | 8662.5      | 48.9                   | -95.26                 | -46.36               | -13         | -33.36      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3465        | 39.4                   | -95.26                 | -55.86               | -13         | -42.86      |
| 2                                                   | 5197.5      | 43.7                   | -95.26                 | -51.56               | -13         | -38.56      |
| 3                                                   | 6930        | 46.5                   | -95.26                 | -48.76               | -13         | -35.76      |
| 4                                                   | 8662.5      | 49.1                   | -95.26                 | -46.16               | -13         | -33.16      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 20300 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3490        | 37.6                   | -95.26                 | -57.66               | -13         | -44.66      |
| 2                                                   | 5235        | 40.6                   | -95.26                 | -54.66               | -13         | -41.66      |
| 3                                                   | 6980        | 45.5                   | -95.26                 | -49.76               | -13         | -36.76      |
| 4                                                   | 8725        | 48.4                   | -95.26                 | -46.86               | -13         | -33.86      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 3490        | 39.2                   | -95.26                 | -56.06               | -13         | -43.06      |
| 2                                                   | 5235        | 40.1                   | -95.26                 | -55.16               | -13         | -42.16      |
| 3                                                   | 6980        | 45.1                   | -95.26                 | -50.16               | -13         | -37.16      |
| 4                                                   | 8725        | 50.3                   | -95.26                 | -44.96               | -13         | -31.96      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.



### LTE Band 12: 1.4MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23017 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1399.4      | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 2                                                   | 2099.1      | 35.9                   | -95.26                 | -59.36               | -13         | -46.36      |
| 3                                                   | 2798.8      | 39.6                   | -95.26                 | -55.66               | -13         | -42.66      |
| 4                                                   | 3498.5      | 38.6                   | -95.26                 | -56.66               | -13         | -43.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1399.4      | 31.4                   | -95.26                 | -63.86               | -13         | -50.86      |
| 2                                                   | 2099.1      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| 3                                                   | 2798.8      | 39.6                   | -95.26                 | -55.66               | -13         | -42.66      |
| 4                                                   | 3498.5      | 40.7                   | -95.26                 | -54.56               | -13         | -41.56      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 1415           | 33.8                      | -95.26                    | -61.46                  | -13            | -48.46      |
| 2   | 2122.5         | 35.9                      | -95.26                    | -59.36                  | -13            | -46.36      |
| 3   | 2830           | 38.5                      | -95.26                    | -56.76                  | -13            | -43.76      |
| 4   | 3537.5         | 40.9                      | -95.26                    | -54.36                  | -13            | -41.36      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq.<br>(MHz) | Reading<br>(dB $\mu$ V/m) | Correction Factor<br>(dB) | Emission Value<br>(dBm) | Limit<br>(dBm) | Margin (dB) |
|-----|----------------|---------------------------|---------------------------|-------------------------|----------------|-------------|
| 1   | 1415           | 34.4                      | -95.26                    | -60.86                  | -13            | -47.86      |
| 2   | 2122.5         | 34.8                      | -95.26                    | -60.46                  | -13            | -47.46      |
| 3   | 2830           | 38.4                      | -95.26                    | -56.86                  | -13            | -43.86      |
| 4   | 3537.5         | 40.8                      | -95.26                    | -54.46                  | -13            | -41.46      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23173 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

Antenna Polarity & Test Distance: Horizontal at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 1430.6      | 31.3                   | -95.26                 | -63.96               | -13         | -50.96      |
| 2   | 2145.9      | 36                     | -95.26                 | -59.26               | -13         | -46.26      |
| 3   | 2861.2      | 39.5                   | -95.26                 | -55.76               | -13         | -42.76      |
| 4   | 3576.5      | 40                     | -95.26                 | -55.26               | -13         | -42.26      |

Antenna Polarity & Test Distance: Vertical at 3 M

| No. | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
|-----|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| 1   | 1430.6      | 32.9                   | -95.26                 | -62.36               | -13         | -49.36      |
| 2   | 2145.9      | 35.5                   | -95.26                 | -59.76               | -13         | -46.76      |
| 3   | 2861.2      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 4   | 3576.5      | 40.6                   | -95.26                 | -54.66               | -13         | -41.66      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 12: 3MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23025 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1401        | 34.1                   | -95.26                 | -61.16               | -13         | -48.16      |
| 2                                                   | 2101.5      | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 3                                                   | 2802        | 37.2                   | -95.26                 | -58.06               | -13         | -45.06      |
| 4                                                   | 3502.5      | 40.1                   | -95.26                 | -55.16               | -13         | -42.16      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1401        | 33.4                   | -95.26                 | -61.86               | -13         | -48.86      |
| 2                                                   | 2101.5      | 34.8                   | -95.26                 | -60.46               | -13         | -47.46      |
| 3                                                   | 2802        | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 4                                                   | 3502.5      | 40.1                   | -95.26                 | -55.16               | -13         | -42.16      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) – 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 31.8                   | -95.26                 | -63.46               | -13         | -50.46      |
| 2                                                   | 2122.5      | 34.9                   | -95.26                 | -60.36               | -13         | -47.36      |
| 3                                                   | 2830        | 39.9                   | -95.26                 | -55.36               | -13         | -42.36      |
| 4                                                   | 3537.5      | 39.1                   | -95.26                 | -56.16               | -13         | -43.16      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| 2                                                   | 2122.5      | 34.9                   | -95.26                 | -60.36               | -13         | -47.36      |
| 3                                                   | 2830        | 36.8                   | -95.26                 | -58.46               | -13         | -45.46      |
| 4                                                   | 3537.5      | 39.2                   | -95.26                 | -56.06               | -13         | -43.06      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23165 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1429        | 34.4                   | -95.26                 | -60.86               | -13         | -47.86      |
| 2                                                   | 2143.5      | 36.9                   | -95.26                 | -58.36               | -13         | -45.36      |
| 3                                                   | 2858        | 38.8                   | -95.26                 | -56.46               | -13         | -43.46      |
| 4                                                   | 3572.5      | 40.3                   | -95.26                 | -54.96               | -13         | -41.96      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1429        | 31.1                   | -95.26                 | -64.16               | -13         | -51.16      |
| 2                                                   | 2143.5      | 37.9                   | -95.26                 | -57.36               | -13         | -44.36      |
| 3                                                   | 2858        | 38.3                   | -95.26                 | -56.96               | -13         | -43.96      |
| 4                                                   | 3572.5      | 40                     | -95.26                 | -55.26               | -13         | -42.26      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

### LTE Band 12: 5MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23035 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1403        | 34.8                   | -95.26                 | -60.46               | -13         | -47.46      |
| 2                                                   | 2104.5      | 37.3                   | -95.26                 | -57.96               | -13         | -44.96      |
| 3                                                   | 2806        | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 4                                                   | 3507.5      | 39.2                   | -95.26                 | -56.06               | -13         | -43.06      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1403        | 34                     | -95.26                 | -61.26               | -13         | -48.26      |
| 2                                                   | 2104.5      | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 3                                                   | 2806        | 38                     | -95.26                 | -57.26               | -13         | -44.26      |
| 4                                                   | 3507.5      | 39.7                   | -95.26                 | -55.56               | -13         | -42.56      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 31.6                   | -95.26                 | -63.66               | -13         | -50.66      |
| 2                                                   | 2122.5      | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| 3                                                   | 2830        | 39.6                   | -95.26                 | -55.66               | -13         | -42.66      |
| 4                                                   | 3537.5      | 41.8                   | -95.26                 | -53.46               | -13         | -40.46      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 31.9                   | -95.26                 | -63.36               | -13         | -50.36      |
| 2                                                   | 2122.5      | 34.3                   | -95.26                 | -60.96               | -13         | -47.96      |
| 3                                                   | 2830        | 39.8                   | -95.26                 | -55.46               | -13         | -42.46      |
| 4                                                   | 3537.5      | 40.5                   | -95.26                 | -54.76               | -13         | -41.76      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.



|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23155 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1427        | 33.8                   | -95.26                 | -61.46               | -13         | -48.46      |
| 2                                                   | 2140.5      | 36.1                   | -95.26                 | -59.16               | -13         | -46.16      |
| 3                                                   | 2854        | 36.8                   | -95.26                 | -58.46               | -13         | -45.46      |
| 4                                                   | 3567.5      | 40.7                   | -95.26                 | -54.56               | -13         | -41.56      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1427        | 32.3                   | -95.26                 | -62.96               | -13         | -49.96      |
| 2                                                   | 2140.5      | 36.4                   | -95.26                 | -58.86               | -13         | -45.86      |
| 3                                                   | 2854        | 39                     | -95.26                 | -56.26               | -13         | -43.26      |
| 4                                                   | 3567.5      | 38.9                   | -95.26                 | -56.36               | -13         | -43.36      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

### LTE Band 12: 10MHz

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23060 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1408        | 33.9                   | -95.26                 | -61.36               | -13         | -48.36      |
| 2                                                   | 2112        | 37.1                   | -95.26                 | -58.16               | -13         | -45.16      |
| 3                                                   | 2816        | 36.9                   | -95.26                 | -58.36               | -13         | -45.36      |
| 4                                                   | 3520        | 39.5                   | -95.26                 | -55.76               | -13         | -42.76      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1408        | 33.2                   | -95.26                 | -62.06               | -13         | -49.06      |
| 2                                                   | 2112        | 34                     | -95.26                 | -61.26               | -13         | -48.26      |
| 3                                                   | 2816        | 38.5                   | -95.26                 | -56.76               | -13         | -43.76      |
| 4                                                   | 3520        | 40.9                   | -95.26                 | -54.36               | -13         | -41.36      |

#### Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) =  $20\log(D) - 104.8$ ; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23095 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 34.5                   | -95.26                 | -60.76               | -13         | -47.76      |
| 2                                                   | 2122.5      | 34.3                   | -95.26                 | -60.96               | -13         | -47.96      |
| 3                                                   | 2830        | 36.6                   | -95.26                 | -58.66               | -13         | -45.66      |
| 4                                                   | 3537.5      | 40.3                   | -95.26                 | -54.96               | -13         | -41.96      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1415        | 33.9                   | -95.26                 | -61.36               | -13         | -48.36      |
| 2                                                   | 2122.5      | 37.2                   | -95.26                 | -58.06               | -13         | -45.06      |
| 3                                                   | 2830        | 38.2                   | -95.26                 | -57.06               | -13         | -44.06      |
| 4                                                   | 3537.5      | 41.9                   | -95.26                 | -53.36               | -13         | -40.36      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

|      |                  |                 |                |
|------|------------------|-----------------|----------------|
| Mode | TX channel 23130 | Frequency Range | Above 1000 MHz |
|------|------------------|-----------------|----------------|

| Antenna Polarity & Test Distance: Horizontal at 3 M |             |                        |                        |                      |             |             |
|-----------------------------------------------------|-------------|------------------------|------------------------|----------------------|-------------|-------------|
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1422        | 34.9                   | -95.26                 | -60.36               | -13         | -47.36      |
| 2                                                   | 2133        | 34.8                   | -95.26                 | -60.46               | -13         | -47.46      |
| 3                                                   | 2844        | 38.2                   | -95.26                 | -57.06               | -13         | -44.06      |
| 4                                                   | 3555        | 39.6                   | -95.26                 | -55.66               | -13         | -42.66      |
| Antenna Polarity & Test Distance: Vertical at 3 M   |             |                        |                        |                      |             |             |
| No.                                                 | Freq. (MHz) | Reading (dB $\mu$ V/m) | Correction Factor (dB) | Emission Value (dBm) | Limit (dBm) | Margin (dB) |
| 1                                                   | 1422        | 32.4                   | -95.26                 | -62.86               | -13         | -49.86      |
| 2                                                   | 2133        | 35.8                   | -95.26                 | -59.46               | -13         | -46.46      |
| 3                                                   | 2844        | 37.5                   | -95.26                 | -57.76               | -13         | -44.76      |
| 4                                                   | 3555        | 40.5                   | -95.26                 | -54.76               | -13         | -41.76      |

Remarks:

1. Follow ANSI 63.26 section 5.2.7 d), Emission Value (dBm) = E (dB  $\mu$  V/m) - Correction Factor @ 3m.
2. Correction Factor (dB) = 20log(D) - 104.8; where D is the measurement distance @ 3m.

## 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 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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