

## FCC Test Report

### (PART 27)

**Report No.:** RFBFBE-WTW-P22030942-2

**FCC ID:** 2AJLF-VAB-1

**Test Model:** VAB-1

**Received Date:** 2022/6/7

**Test Date:** 2022/7/14 ~ 2022/7/30

**Issued Date:** 2022/8/22

**Applicant:** DataRemote Incorporated

**Address:** 18001 Old Cutler Rd. Suite 600, Miami, FL 33157

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

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**Test Location (1):** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
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**Test Location (2):** B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan

**FCC Registration /** 788550 / TW0003

**Designation Number:** 427177 / TW0011



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### Release Control Record

| Issue No.              | Description      | Date Issued |
|------------------------|------------------|-------------|
| RFBFBE-WTW-P22030942-2 | Original Release | 2022/8/22   |

## 1 Certificate of Conformity

**Product:** Cellular Backup Router

**Brand:** DATAREMOTE

**Test Model:** VAB-1

**Sample Status:** Engineering Sample

**Applicant:** DataRemote Incorporated

**Test Date:** 2022/7/14 ~ 2022/7/30

**Standards:** FCC Part 27, Subpart C, H, F, L

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

**Prepared by :** Vera Huang, **Date:** 2022/8/22  
Vera Huang / Specialist

**Approved by :** Jeremy Lin, **Date:** 2022/8/22  
Jeremy Lin / Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 27 & Part 2 (WCDMA) |                                         |        |                                                                                       |
|------------------------------------------------|-----------------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                     | Test Item                               | Result | Remarks                                                                               |
| 2.1046<br>27.50(d)                             | Equivalent Isotropically radiated power | Pass   | Meet the requirement of limit.                                                        |
| 2.1047                                         | Modulation characteristics              | Pass   | Meet the requirement.                                                                 |
| 2.1055<br>27.54                                | Frequency Stability                     | Pass   | Meet the requirement of limit.                                                        |
| 2.1049                                         | Emission Bandwidth                      | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                             | Out of Band Emission Measurements       | Pass   | Meet the requirement of limit.                                                        |
| 27.50(d)(5)                                    | Peak To Average Ratio                   | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                             | Conducted Spurious Emissions            | Pass   | Meet the requirement of limit.                                                        |
| 2.1053<br>27.53(h)                             | Radiated Spurious Emissions             | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -38.54 dB at 3465.00 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 4) |                                         |        |                                                                                       |
|------------------------------------------------|-----------------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                     | Test Item                               | Result | Remarks                                                                               |
| 2.1046<br>27.50(d)                             | Equivalent Isotropically radiated power | Pass   | Meet the requirement of limit.                                                        |
| 2.1047                                         | Modulation characteristics              | Pass   | Meet the requirement.                                                                 |
| 2.1055<br>27.54                                | Frequency Stability                     | Pass   | Meet the requirement of limit.                                                        |
| 2.1049                                         | Emission Bandwidth                      | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                             | Out of Band Emission Measurements       | Pass   | Meet the requirement of limit.                                                        |
| 27.50(d)(5)                                    | Peak To Average Ratio                   | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                             | Conducted Spurious Emissions            | Pass   | Meet the requirement of limit.                                                        |
| 2.1053<br>27.53(h)                             | Radiated Spurious Emissions             | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -37.98 dB at 3421.40 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 12) |                                   |        |                                                                                      |
|-------------------------------------------------|-----------------------------------|--------|--------------------------------------------------------------------------------------|
| FCC Clause                                      | Test Item                         | Result | Remarks                                                                              |
| 2.1046<br>27.50(c)                              | Equivalent radiated power         | Pass   | Meet the requirement of limit.                                                       |
| 2.1047                                          | Modulation characteristics        | Pass   | Meet the requirement.                                                                |
| 2.1055<br>27.54                                 | Frequency Stability               | Pass   | Meet the requirement of limit.                                                       |
| 2.1049                                          | Emission Bandwidth                | Pass   | Meet the requirement of limit.                                                       |
| 2.1051<br>27.53(g)                              | Out of Band Emission Measurements | Pass   | Meet the requirement of limit.                                                       |
| --                                              | Peak To Average Ratio             | Pass   | Meet the requirement of limit.                                                       |
| 2.1051<br>27.53(g)                              | Conducted Spurious Emissions      | Pass   | Meet the requirement of limit.                                                       |
| 2.1053<br>27.53(g)                              | Radiated Spurious Emissions       | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -43.00 dB at 157.55 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 13) |                                   |        |                                                                                       |
|-------------------------------------------------|-----------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                      | Test Item                         | Result | Remarks                                                                               |
| 2.1046<br>27.50(b)                              | Equivalent radiated power         | Pass   | Meet the requirement of limit.                                                        |
| 2.1047                                          | Modulation characteristics        | Pass   | Meet the requirement.                                                                 |
| 2.1055<br>27.54                                 | Frequency Stability               | Pass   | Meet the requirement of limit.                                                        |
| 2.1049                                          | Emission Bandwidth                | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(c)                              | Out of Band Emission Measurements | Pass   | Meet the requirement of limit.                                                        |
| --                                              | Peak To Average Ratio             | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(c)(f)                           | Conducted Spurious Emissions      | Pass   | Meet the requirement of limit.                                                        |
| 2.1053<br>27.53(c)(f)                           | Radiated Spurious Emissions       | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -17.39 dB at 1559.00 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 66) |                                         |        |                                                                                       |
|-------------------------------------------------|-----------------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                      | Test Item                               | Result | Remarks                                                                               |
| 2.1046<br>27.50(d)                              | Equivalent Isotropically radiated power | Pass   | Meet the requirement of limit.                                                        |
| 2.1047                                          | Modulation characteristics              | Pass   | Meet the requirement.                                                                 |
| 2.1055<br>27.54                                 | Frequency Stability                     | Pass   | Meet the requirement of limit.                                                        |
| 2.1049                                          | Emission Bandwidth                      | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                              | Out of Band Emission Measurements       | Pass   | Meet the requirement of limit.                                                        |
| 27.50(d)(5)                                     | Peak To Average Ratio                   | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(h)                              | Conducted Spurious Emissions            | Pass   | Meet the requirement of limit.                                                        |
| 2.1053<br>27.53(h)                              | Radiated Spurious Emissions             | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -36.74 dB at 3555.00 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 71) |                                   |        |                                                                                       |
|-------------------------------------------------|-----------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                      | Test Item                         | Result | Remarks                                                                               |
| 2.1046<br>27.50(c)                              | Equivalent radiated power         | Pass   | Meet the requirement of limit.                                                        |
| 2.1047                                          | Modulation characteristics        | Pass   | Meet the requirement.                                                                 |
| 2.1055<br>27.54                                 | Frequency Stability               | Pass   | Meet the requirement of limit.                                                        |
| 2.1049<br>27.53(g)                              | Emission Bandwidth                | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(g)                              | Out of Band Emission Measurements | Pass   | Meet the requirement of limit.                                                        |
| --                                              | Peak To Average Ratio             | Pass   | Meet the requirement of limit.                                                        |
| 2.1051<br>27.53(g)                              | Conducted Spurious Emissions      | Pass   | Meet the requirement of limit.                                                        |
| 2.1053<br>27.53(g)                              | Radiated Spurious Emissions       | Pass   | Meet the requirement of limit.<br>Minimum passing margin is -41.65 dB at 1361.00 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) ( $\pm$ ) |
|--------------------------------|--------------------|-----------------------------------------|
| Radiated Emissions up to 1 GHz | 9 kHz ~ 30 MHz     | 3.0400 dB                               |
|                                | 30 MHz ~ 200 MHz   | 2.0153 dB                               |
|                                | 200 MHz ~ 1000 MHz | 2.0224 dB                               |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz     | 1.0121 dB                               |
|                                | 18 GHz ~ 40 GHz    | 1.1508 dB                               |

## 2.2 Test Site and Instruments

| Description<br>Manufacturer                | Model No.                    | Serial No.                                         | Calibrated Date | Calibrated Until |
|--------------------------------------------|------------------------------|----------------------------------------------------|-----------------|------------------|
| Antenna Tower<br>Max-Full                  | UNAT_5+                      | PAD-CH6-01                                         | N/A             | N/A              |
| Antenna Tower Controller<br>Max-Full       | MF-7802                      | N/A                                                | N/A             | N/A              |
| Bi_Log Antenna<br>Schwarzbeck              | VULB9168                     | 9168-616                                           | 2021/10/27      | 2022/10/26       |
| Preamplifier<br>Agilent                    | 310N                         | 187226                                             | 2022/6/14       | 2023/6/13        |
| Pre-amplifier<br>EMCI                      | EMC001340                    | 980201                                             | 2021/9/15       | 2022/9/14        |
| RF Coaxial Cable<br>EMCI                   | 5D-NM-BM                     | 140903+140902                                      | 2022/1/15       | 2023/1/14        |
| RF Coaxial Cable<br>ETS-Lindgren           | EMC104-SM-SM-10000           | Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-4 | 2022/6/14       | 2023/6/13        |
|                                            | RFC-SMS-100-SMS-24-IN        | Cable-CH1-02(RFC-SMS-100-SMS-24)                   | 2022/6/14       | 2023/6/13        |
| Software<br>BV ADT                         | ADT_Radiated_<br>V7.6.15.9.5 | N/A                                                | N/A             | N/A              |
| Test Receiver<br>Agilent                   | N9038A                       | MY52260177                                         | 2021/9/1        | 2022/8/31        |
| Turn Table<br>Max-Full                     | TT-1510                      | N/A                                                | N/A             | N/A              |
| Turn Table Controller<br>Max-Full          | MF-7802                      | N/A                                                | N/A             | N/A              |
| Boresight antenna tower<br>fixture<br>BV   | BAF-02                       | 8                                                  | N/A             | N/A              |
| Horn Antenna<br>ETS-Lindgren               | 3117                         | 00143293                                           | 2021/11/14      | 2022/11/13       |
| Horn Antenna<br>Schwarzbeck                | BBHA 9170                    | BBHA9170241                                        | 2021/10/26      | 2022/10/25       |
| Radio Communication<br>Analyzer<br>Anritsu | MT8821C                      | 6261806803                                         | 2022/2/16       | 2023/2/15        |

Notes:

1. The test was performed in XD - 966 chamber 6.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 3 General Information

#### 3.1 General Description of EUT

|                            |                                                                     |                     |
|----------------------------|---------------------------------------------------------------------|---------------------|
| <b>Product</b>             | Cellular Backup Router                                              |                     |
| <b>Brand</b>               | DATAREMOTE                                                          |                     |
| <b>Test Model</b>          | VAB-1                                                               |                     |
| <b>Status of EUT</b>       | Engineering Sample                                                  |                     |
| <b>Power Supply Rating</b> | 12Vdc / 19Vdc (from adapter)                                        |                     |
| <b>Modulation Type</b>     | WCDMA: BPSK, QPSK<br>HSDPA: BPSK<br>HSUPA: QPSK<br>LTE: QPSK, 16QAM |                     |
| <b>Frequency Range</b>     | WCDMA Band 4                                                        | 1712.4 ~ 1752.6 MHz |
|                            | 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)                              | 1715.0 ~ 1750.0 MHz |
|                            | LTE Band 4 (Channel Bandwidth: 15 MHz)                              | 1717.5 ~ 1747.5 MHz |
|                            | LTE Band 4 (Channel Bandwidth: 20 MHz)                              | 1720.0 ~ 1745.0 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)                             | 704.0 ~ 711.0 MHz   |
|                            | LTE Band 13 (Channel Bandwidth: 5 MHz)                              | 779.5 ~ 784.5 MHz   |
|                            | LTE Band 13 (Channel Bandwidth: 10 MHz)                             | 782.0 MHz           |
|                            | LTE Band 66 (Channel Bandwidth: 1.4 MHz)                            | 1710.7 ~ 1779.3 MHz |
|                            | LTE Band 66 (Channel Bandwidth: 3 MHz)                              | 1711.5 ~ 1778.5 MHz |
|                            | LTE Band 66 (Channel Bandwidth: 5 MHz)                              | 1712.5 ~ 1777.5 MHz |
|                            | LTE Band 66 (Channel Bandwidth: 10 MHz)                             | 1715.0 ~ 1775.0 MHz |
|                            | LTE Band 66 (Channel Bandwidth: 15 MHz)                             | 1717.5 ~ 1772.5 MHz |
|                            | LTE Band 66 (Channel Bandwidth: 20 MHz)                             | 1720.0 ~ 1770.0 MHz |
|                            | LTE Band 71 (Channel Bandwidth: 5 MHz)                              | 665.5 ~ 695.5 MHz   |
|                            | LTE Band 71 (Channel Bandwidth: 10 MHz)                             | 668.0 ~ 693.0 MHz   |
|                            | LTE Band 71 (Channel Bandwidth: 15 MHz)                             | 670.5 ~ 690.5 MHz   |
|                            | LTE Band 71 (Channel Bandwidth: 20 MHz)                             | 673.0 ~ 688.0 MHz   |

|                     |                                          |                      |
|---------------------|------------------------------------------|----------------------|
| Emission Designator | WCDMA Band 4                             | 4M15F9W              |
|                     | LTE Band 4 (Channel Bandwidth: 1.4 MHz)  | 1M09G7D              |
|                     | LTE Band 4 (Channel Bandwidth: 3 MHz)    | 2M70D7W              |
|                     | LTE Band 4 (Channel Bandwidth: 5 MHz)    | 4M49G7D              |
|                     | LTE Band 4 (Channel Bandwidth: 10 MHz)   | 8M96G7D              |
|                     | LTE Band 4 (Channel Bandwidth: 15 MHz)   | 13M4G7D              |
|                     | LTE Band 4 (Channel Bandwidth: 20 MHz)   | 17M9D7W              |
|                     | LTE Band 12 (Channel Bandwidth: 1.4 MHz) | 1M09G7D              |
|                     | LTE Band 12 (Channel Bandwidth: 3 MHz)   | 2M70G7D              |
|                     | LTE Band 12 (Channel Bandwidth: 5 MHz)   | 4M50G7D              |
|                     | LTE Band 12 (Channel Bandwidth: 10 MHz)  | 8M97D7W              |
|                     | LTE Band 13 (Channel Bandwidth: 5 MHz)   | 4M49G7D              |
|                     | LTE Band 13 (Channel Bandwidth: 10 MHz)  | 8M96D7W              |
|                     | LTE Band 66 (Channel Bandwidth: 1.4 MHz) | 1M09G7D              |
|                     | LTE Band 66 (Channel Bandwidth: 3 MHz)   | 2M70D7W              |
|                     | LTE Band 66 (Channel Bandwidth: 5 MHz)   | 4M50G7D              |
|                     | LTE Band 66 (Channel Bandwidth: 10 MHz)  | 8M96G7D              |
|                     | LTE Band 66 (Channel Bandwidth: 15 MHz)  | 13M4G7D              |
|                     | LTE Band 66 (Channel Bandwidth: 20 MHz)  | 17M9D7W              |
|                     | LTE Band 71 (Channel Bandwidth: 5 MHz)   | 4M49G7D              |
|                     | LTE Band 71 (Channel Bandwidth: 10 MHz)  | 8M97D7W              |
|                     | LTE Band 71 (Channel Bandwidth: 15 MHz)  | 13M5G7D              |
|                     | LTE Band 71 (Channel Bandwidth: 20 MHz)  | 17M9D7W              |
| Max. ERP Power      | LTE Band 12 (Channel Bandwidth: 1.4 MHz) | 207.491mW (23.17dBm) |
|                     | LTE Band 12 (Channel Bandwidth: 3 MHz)   | 210.378mW (23.23dBm) |
|                     | LTE Band 12 (Channel Bandwidth: 5 MHz)   | 209.411mW (23.21dBm) |
|                     | LTE Band 12 (Channel Bandwidth: 10 MHz)  | 208.449mW (23.19dBm) |
|                     | LTE Band 13 (Channel Bandwidth: 5 MHz)   | 160.694mW (22.06dBm) |
|                     | LTE Band 13 (Channel Bandwidth: 10 MHz)  | 159.221mW (22.02dBm) |
|                     | LTE Band 71 (Channel Bandwidth: 5 MHz)   | 201.837mW (23.05dBm) |
|                     | LTE Band 71 (Channel Bandwidth: 10 MHz)  | 199.067mW (22.99dBm) |
|                     | LTE Band 71 (Channel Bandwidth: 15 MHz)  | 200.909mW (23.03dBm) |
|                     | LTE Band 71 (Channel Bandwidth: 20 MHz)  | 200.909mW (23.03dBm) |

|                                                   |                                          |                      |
|---------------------------------------------------|------------------------------------------|----------------------|
| <b>Max. EIRP Power</b>                            | WCDMA Band 4                             | 314.775mW (24.98dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 1.4 MHz)  | 300.608mW (24.78dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 3 MHz)    | 306.196mW (24.86dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 5 MHz)    | 303.389mW (24.82dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 10 MHz)   | 306.196mW (24.86dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 15 MHz)   | 306.196mW (24.86dBm) |
|                                                   | LTE Band 4 (Channel Bandwidth: 20 MHz)   | 304.089mW (24.83dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 1.4 MHz) | 334.965mW (25.25dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 3 MHz)   | 334.195mW (25.24dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 5 MHz)   | 332.660mW (25.22dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 10 MHz)  | 332.660mW (25.22dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 15 MHz)  | 328.095mW (25.16dBm) |
|                                                   | LTE Band 66 (Channel Bandwidth: 20 MHz)  | 328.095mW (25.16dBm) |
| <b>Antenna Type</b> Refer to Note as below        |                                          |                      |
| <b>Accessory Device</b> Refer to Note as below    |                                          |                      |
| <b>Data Cable Supplied</b> Refer to Note as below |                                          |                      |

Note:

1. The EUT contains following accessory devices.

|                         |                        |                              |
|-------------------------|------------------------|------------------------------|
| <b>AC Adapter 1</b>     | <b>Brand</b>           | MOSO                         |
|                         | <b>Model</b>           | MSS-V2500WR120-030E0-US      |
|                         | <b>AC Input</b>        | 100-240V, 50/60Hz, 1A max.   |
|                         | <b>DC Output</b>       | 12V, 2.5A                    |
|                         | <b>DC Output Cable</b> | 1.5m, Non-shielded           |
| <b>AC Adapter 2</b>     | <b>Brand</b>           | MOSO                         |
|                         | <b>Model</b>           | MS-V3420R190-065L0-US        |
|                         | <b>AC Input</b>        | 100-240V, 50/60Hz, 1.5A max. |
|                         | <b>DC Output</b>       | 19V, 3.42A                   |
|                         | <b>DC Output Cable</b> | 1.5m, Non-shielded           |
| <b>Ethernet Cable 1</b> | <b>Signal Line</b>     | 1.5m, Non-shielded, yellow   |
| <b>Ethernet Cable 2</b> | <b>Signal Line</b>     | 1.5m, Non-shielded, red      |
| <b>Phone Cable</b>      | <b>Signal Line</b>     | 1.5m, Non-shielded, gray     |
| <b>Power Cable 1</b>    | <b>Model</b>           | BGW-210                      |
|                         | <b>Signal Line</b>     | 1.5m, Non-shielded, black    |
| <b>Power Cable 2</b>    | <b>Model</b>           | BGW-320                      |
|                         | <b>Signal Line</b>     | 1.5m, Non-shielded, white    |

\*After pretesting, Adapter 1 was the worst case and chosen for final test.

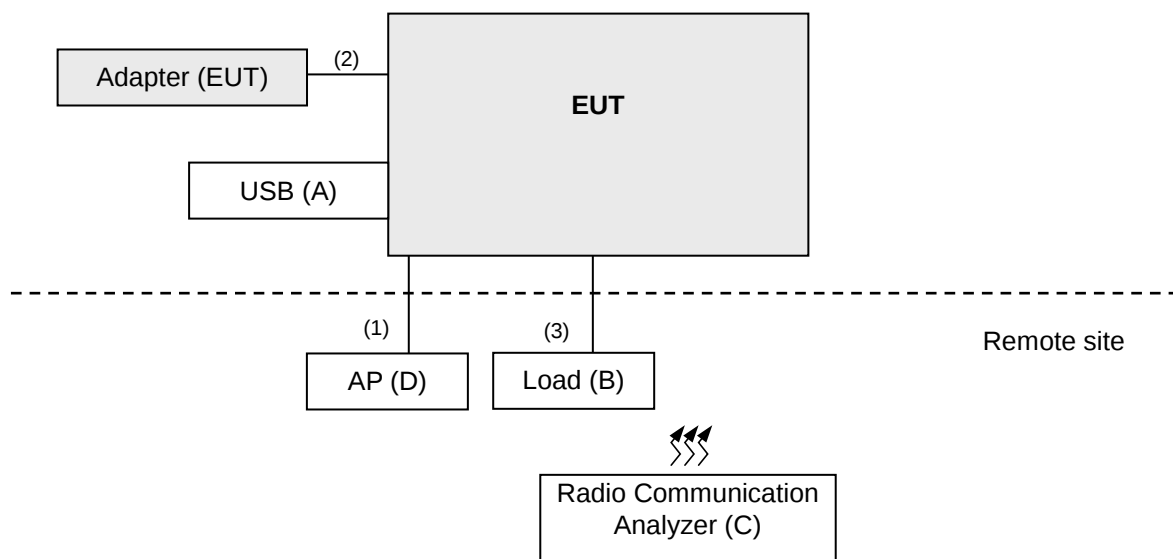
2. The antenna information is listed as below.

| Antenna Type    | Dipole Antenna     |        |
|-----------------|--------------------|--------|
| Band            | Antenna Gain (dBi) |        |
|                 | Ant. 1             | Ant. 2 |
| WCDMA 4 / LTE 4 | 1.66               | 1.66   |
| LTE 12          | 1.68               | 1.68   |
| LTE 13          | 1.63               | 1.63   |
| LTE 66          | 1.95               | 1.95   |
| LTE 71          | 1.5                | 1.5    |

3. Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

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

### 3.2 Configuration of System under Test



#### 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                          | SanDisk | BM210257950Z | N/A          | N/A    | Supplied by lab |
| B  | Load                         | N/A     | N/A          | N/A          | N/A    | Supplied by lab |
| C  | Radio Communication Analyzer | Anritsu | MT8821C      | 6261806803   | N/A    | Supplied by lab |
| D  | AP                           | ASUS    | AC750        | H7ITDV002001 | NA     | Supplied by lab |

| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks               |
|----|--------------|------|------------|--------------------|--------------|-----------------------|
| 1. | RJ-45 Cable  | 4    | 2          | No                 | 0            | Supplied by lab       |
| 2. | AC Cable     | 1    | 1.5        | No                 | 0            | Supplied by applicant |
| 3. | RJ-41 Cable  | 1    | 2          | No                 | 0            | Supplied by lab       |

### 3.3 Test Mode Applicability and Tested Channel Detail

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

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

| Band        | Radiated Emission |
|-------------|-------------------|
| WCDMA       | 90 degree         |
| LTE Band 4  | 0 degree          |
| LTE Band 12 | 90 degree         |
| LTE Band 13 | 90 degree         |
| LTE Band 66 | 90 degree         |
| LTE Band 71 | 90 degree         |

#### WCDMA

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel   | Mode  |
|--------------------|------------------------------|-------------------|------------------|-------|
| -                  | EIRP                         | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| -                  | Modulation Characteristics   | 1312 to 1513      | 1413             | WCDMA |
| -                  | Frequency Stability          | 1312 to 1513      | 1312, 1513       | WCDMA |
| -                  | Occupied Bandwidth           | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| -                  | Band Edge                    | 1312 to 1513      | 1312, 1513       | WCDMA |
| -                  | Peak to Average Ratio        | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| -                  | Conducted Emission           | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| -                  | Radiated Emission Below 1GHz | 1312 to 1513      | 1413             | WCDMA |
| -                  | Radiated Emission Above 1GHz | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |

## LTE Band 4

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel      | Channel Bandwidth | Modulation   | RB #              |
|--------------------|----------------------------|-------------------|---------------------|-------------------|--------------|-------------------|
| -                  | EIRP                       | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
| -                  | Modulation Characteristics | 20050 to 20300    | 20175               | 5 MHz             | QPSK / 16QAM | Full              |
| -                  | Frequency Stability        | 19957 to 20393    | 19957, 20393        | 1.4 MHz           | QPSK         | Full              |
|                    |                            | 19965 to 20385    | 19965, 20385        | 3 MHz             | QPSK         | Full              |
|                    |                            | 19975 to 20375    | 19975, 20375        | 5 MHz             | QPSK         | Full              |
|                    |                            | 20000 to 20350    | 20000, 20350        | 10 MHz            | QPSK         | Full              |
|                    |                            | 20025 to 20325    | 20025, 20325        | 15 MHz            | QPSK         | Full              |
|                    |                            | 20050 to 20300    | 20050, 20300        | 20 MHz            | QPSK         | Full              |
| -                  | Occupied Bandwidth         | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK / 16QAM | Full              |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK / 16QAM | Full              |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK / 16QAM | Full              |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK / 16QAM | Full              |
| -                  | Peak to Average Ratio      | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK / 16QAM | 1                 |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK / 16QAM | 1                 |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK / 16QAM | 1                 |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK / 16QAM | 1                 |

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel      | Channel Bandwidth | Modulation | RB #              |
|--------------------|------------------------------|-------------------|---------------------|-------------------|------------|-------------------|
| -                  | Band Edge                    | 19957 to 20393    | 19957, 20393        | 1.4 MHz           | QPSK       | 1<br>Half<br>Full |
|                    |                              | 19965 to 20385    | 19965, 20385        | 3 MHz             | QPSK       | 1<br>Half<br>Full |
|                    |                              | 19975 to 20375    | 19975, 20375        | 5 MHz             | QPSK       | 1<br>Half<br>Full |
|                    |                              | 20000 to 20350    | 20000, 20350        | 10 MHz            | QPSK       | 1<br>Half<br>Full |
|                    |                              | 20025 to 20325    | 20025, 20325        | 15 MHz            | QPSK       | 1<br>Half<br>Full |
|                    |                              | 20050 to 20300    | 20050, 20300        | 20 MHz            | QPSK       | 1<br>Half<br>Full |
| -                  | Conducted Emission           | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK       | 1                 |
|                    |                              | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK       | 1                 |
|                    |                              | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK       | 1                 |
|                    |                              | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK       | 1                 |
|                    |                              | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK       | 1                 |
|                    |                              | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK       | 1                 |
| -                  | Radiated Emission Below 1GHz | 20050 to 20300    | 20175               | 20 MHz            | QPSK       | 1                 |
| -                  | Radiated Emission Above 1GHz | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK       | 1                 |
|                    |                              | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK       | 1                 |
|                    |                              | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK       | 1                 |

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only EIRP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK and 16QAM modes, the other test items were performed under worse mode according to the maximum output power.

## LTE Band 12

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel      | Channel Bandwidth | Modulation   | RB #              |
|--------------------|----------------------------|-------------------|---------------------|-------------------|--------------|-------------------|
| -                  | ERP                        | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
| -                  | Modulation Characteristics | 23060 to 23130    | 23095               | 5 MHz             | QPSK / 16QAM | Full              |
| -                  | Frequency Stability        | 23017 to 23173    | 23017, 23173        | 1.4 MHz           | QPSK         | Full              |
|                    |                            | 23025 to 23165    | 23025, 23165        | 3 MHz             | QPSK         | Full              |
|                    |                            | 23035 to 23155    | 23035, 23155        | 5 MHz             | QPSK         | Full              |
|                    |                            | 23060 to 23130    | 23060, 23130        | 10 MHz            | QPSK         | Full              |
| -                  | Occupied Bandwidth         | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK / 16QAM | Full              |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK / 16QAM | Full              |
| -                  | Peak to Average Ratio      | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK / 16QAM | 1                 |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK / 16QAM | 1                 |
| -                  | Band Edge                  | 23017 to 23173    | 23017, 23173        | 1.4 MHz           | QPSK         | 1<br>Half<br>Full |
|                    |                            | 23025 to 23165    | 23025, 23165        | 3 MHz             | QPSK         | 1<br>Half<br>Full |
|                    |                            | 23035 to 23155    | 23035, 23155        | 5 MHz             | QPSK         | 1<br>Half<br>Full |
|                    |                            | 23060 to 23130    | 23060, 23130        | 10 MHz            | QPSK         | 1<br>Half<br>Full |

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel      | Channel Bandwidth | Modulation | RB # |
|--------------------|------------------------------|-------------------|---------------------|-------------------|------------|------|
| -                  | Conducted Emission           | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK       | 1    |
|                    |                              | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK       | 1    |
|                    |                              | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK       | 1    |
|                    |                              | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK       | 1    |
| -                  | Radiated Emission Below 1GHz | 23017 to 23173    | 23017               | 1.4 MHz           | QPSK       | 1    |
| -                  | Radiated Emission Above 1GHz | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK       | 1    |
|                    |                              | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK       | 1    |
|                    |                              | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK       | 1    |

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only ERP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK and 16QAM modes, the other test items were performed under worse mode according to the maximum output power.

## LTE Band 13

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel      | Channel Bandwidth | Modulation   | RB #              |
|--------------------|------------------------------|-------------------|---------------------|-------------------|--------------|-------------------|
| -                  | ERP                          | 23205 to 23255    | 23205, 23230, 23255 | 5 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
| -                  | Modulation Characteristics   | 23230             | 23230               | 5 MHz             | QPSK / 16QAM | Full              |
| -                  | Frequency Stability          | 23205 to 23255    | 23205, 23255        | 5 MHz             | QPSK         | Full              |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK         | Full              |
| -                  | Occupied Bandwidth           | 23205 to 23255    | 23205, 23230, 23255 | 5 MHz             | QPSK / 16QAM | Full              |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK / 16QAM | Full              |
| -                  | Peak to Average Ratio        | 23205 to 23255    | 23205, 23230, 23255 | 5 MHz             | QPSK / 16QAM | 1                 |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK / 16QAM | 1                 |
| -                  | Band Edge                    | 23205 to 23255    | 23205, 23255        | 5 MHz             | QPSK         | 1<br>Half<br>Full |
|                    |                              | 23230             | 23230, 23230        | 10 MHz            | QPSK         | 1<br>Half<br>Full |
| -                  | Conducted Emission           | 23205 to 23255    | 23205, 23230, 23255 | 5 MHz             | QPSK         | 1                 |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK         | 1                 |
| -                  | Radiated Emission Below 1GHz | 23205 to 23255    | 23205               | 5 MHz             | QPSK         | 1                 |
| -                  | Radiated Emission Above 1GHz | 23205 to 23255    | 23205, 23230, 23255 | 5 MHz             | QPSK         | 1                 |
|                    |                              | 23230             | 23230               | 10 MHz            | QPSK         | 1                 |

### Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only ERP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK and 16QAM modes, the other test items were performed under worse mode according to the maximum output power.

## LTE Band 66

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel         | Channel Bandwidth | Modulation   | RB #              |
|--------------------|----------------------------|-------------------|------------------------|-------------------|--------------|-------------------|
| -                  | EIRP                       | 131979 to 132665  | 131979, 132322, 132665 | 1.4 MHz           | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 131987 to 132657  | 131987, 132322, 132657 | 3 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 131997 to 132647  | 131997, 132322, 132647 | 5 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 132022 to 132622  | 132022, 132322, 132622 | 10 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 132047 to 132597  | 132047, 132322, 132597 | 15 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                            | 132072 to 132572  | 132072, 132322, 132572 | 20 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
| -                  | Modulation Characteristics | 132072 to 132572  | 132322                 | 5 MHz             | QPSK / 16QAM | Full              |
| -                  | Frequency Stability        | 131979 to 132665  | 131979, 132665         | 1.4 MHz           | QPSK         | Full              |
|                    |                            | 131987 to 132657  | 131987, 132657         | 3 MHz             | QPSK         | Full              |
|                    |                            | 131997 to 132647  | 131997, 132647         | 5 MHz             | QPSK         | Full              |
|                    |                            | 132022 to 132622  | 132022, 132622         | 10 MHz            | QPSK         | Full              |
|                    |                            | 132047 to 132597  | 132047, 132597         | 15 MHz            | QPSK         | Full              |
|                    |                            | 132072 to 132572  | 132072, 132572         | 20 MHz            | QPSK         | Full              |
| -                  | Occupied Bandwidth         | 131979 to 132665  | 131979, 132322, 132665 | 1.4 MHz           | QPSK / 16QAM | Full              |
|                    |                            | 131987 to 132657  | 131987, 132322, 132657 | 3 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 131997 to 132647  | 131997, 132322, 132647 | 5 MHz             | QPSK / 16QAM | Full              |
|                    |                            | 132022 to 132622  | 132022, 132322, 132622 | 10 MHz            | QPSK / 16QAM | Full              |
|                    |                            | 132047 to 132597  | 132047, 132322, 132597 | 15 MHz            | QPSK / 16QAM | Full              |
|                    |                            | 132072 to 132572  | 132072, 132322, 132572 | 20 MHz            | QPSK / 16QAM | Full              |
| -                  | Peak to Average Ratio      | 131979 to 132665  | 131979, 132322, 132665 | 1.4 MHz           | QPSK / 16QAM | 1                 |
|                    |                            | 131987 to 132657  | 131987, 132322, 132657 | 3 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 131997 to 132647  | 131997, 132322, 132647 | 5 MHz             | QPSK / 16QAM | 1                 |
|                    |                            | 132022 to 132622  | 132022, 132322, 132622 | 10 MHz            | QPSK / 16QAM | 1                 |
|                    |                            | 132047 to 132597  | 132047, 132322, 132597 | 15 MHz            | QPSK / 16QAM | 1                 |
|                    |                            | 132072 to 132572  | 132072, 132322, 132572 | 20 MHz            | QPSK / 16QAM | 1                 |

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel         | Channel Bandwidth | Modulation | RB #              |
|--------------------|------------------------------|-------------------|------------------------|-------------------|------------|-------------------|
| -                  | Band Edge                    | 131979 to 132665  | 131979, 132665         | 1.4 MHz           | QPSK       | 1<br>Half<br>Full |
|                    |                              | 131987 to 132657  | 131987, 132657         | 3 MHz             | QPSK       | 1<br>Half<br>Full |
|                    |                              | 131997 to 132647  | 131997, 132647         | 5 MHz             | QPSK       | 1<br>Half<br>Full |
|                    |                              | 132022 to 132622  | 132022, 132622         | 10 MHz            | QPSK       | 1<br>Half<br>Full |
|                    |                              | 132047 to 132597  | 132047, 132597         | 15 MHz            | QPSK       | 1<br>Half<br>Full |
|                    |                              | 132072 to 132572  | 132072, 132572         | 20 MHz            | QPSK       | 1<br>Half<br>Full |
| -                  | Conducted Emission           | 131979 to 132665  | 131979, 132322, 132665 | 1.4 MHz           | QPSK       | 1                 |
|                    |                              | 131987 to 132657  | 131987, 132322, 132657 | 3 MHz             | QPSK       | 1                 |
|                    |                              | 131997 to 132647  | 131997, 132322, 132647 | 5 MHz             | QPSK       | 1                 |
|                    |                              | 132022 to 132622  | 132022, 132322, 132622 | 10 MHz            | QPSK       | 1                 |
|                    |                              | 132047 to 132597  | 132047, 132322, 132597 | 15 MHz            | QPSK       | 1                 |
|                    |                              | 132072 to 132572  | 132072, 132322, 132572 | 20 MHz            | QPSK       | 1                 |
| -                  | Radiated Emission Below 1GHz | 131997 to 132647  | 132647                 | 5 MHz             | QPSK       | 1                 |
| -                  | Radiated Emission Above 1GHz | 131979 to 132665  | 131979, 132322, 132665 | 1.4 MHz           | QPSK       | 1                 |
|                    |                              | 131997 to 132647  | 131997, 132322, 132647 | 5 MHz             | QPSK       | 1                 |
|                    |                              | 132072 to 132572  | 132072, 132322, 132572 | 20 MHz            | QPSK       | 1                 |

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only EIRP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK and 16QAM modes, the other test items were performed under worse mode according to the maximum output power.

## LTE Band 71

| EUT Configure Mode | Test Item                    | Available Channel | Tested Channel         | Channel Bandwidth | Modulation   | RB #              |
|--------------------|------------------------------|-------------------|------------------------|-------------------|--------------|-------------------|
| -                  | ERP                          | 133147 to 133447  | 133147, 133297, 133447 | 5 MHz             | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                              | 133172 to 133422  | 133172, 133297, 133422 | 10 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                              | 133197 to 133397  | 133197, 133297, 133397 | 15 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
|                    |                              | 133222 to 133372  | 133222, 133297, 133372 | 20 MHz            | QPSK / 16QAM | 1<br>Half<br>Full |
| -                  | Modulation Characteristics   | 133222 to 133372  | 133297                 | 20 MHz            | QPSK / 16QAM | Full              |
| -                  | Frequency Stability          | 133147 to 133447  | 133147, 133447         | 5 MHz             | QPSK         | Full              |
|                    |                              | 133172 to 133422  | 133172, 133422         | 10 MHz            | QPSK         | Full              |
|                    |                              | 133197 to 133397  | 133197, 133397         | 15 MHz            | QPSK         | Full              |
|                    |                              | 133222 to 133372  | 133222, 133372         | 20 MHz            | QPSK         | Full              |
| -                  | Occupied Bandwidth           | 133147 to 133447  | 133147, 133297, 133447 | 5 MHz             | QPSK / 16QAM | Full              |
|                    |                              | 133172 to 133422  | 133172, 133297, 133422 | 10 MHz            | QPSK / 16QAM | Full              |
|                    |                              | 133197 to 133397  | 133197, 133297, 133397 | 15 MHz            | QPSK / 16QAM | Full              |
|                    |                              | 133222 to 133372  | 133222, 133297, 133372 | 20 MHz            | QPSK / 16QAM | Full              |
| -                  | Peak to Average Ratio        | 133147 to 133447  | 133147, 133297, 133447 | 5 MHz             | QPSK / 16QAM | 1                 |
|                    |                              | 133172 to 133422  | 133172, 133297, 133422 | 10 MHz            | QPSK / 16QAM | 1                 |
|                    |                              | 133197 to 133397  | 133197, 133297, 133397 | 15 MHz            | QPSK / 16QAM | 1                 |
|                    |                              | 133222 to 133372  | 133222, 133297, 133372 | 20 MHz            | QPSK / 16QAM | 1                 |
| -                  | Band Edge                    | 133147 to 133447  | 133147, 133447         | 5 MHz             | QPSK         | 1<br>Half<br>Full |
|                    |                              | 133172 to 133422  | 133172, 133422         | 10 MHz            | QPSK         | 1<br>Half<br>Full |
|                    |                              | 133197 to 133397  | 133197, 133397         | 15 MHz            | QPSK         | 1<br>Half<br>Full |
|                    |                              | 133222 to 133372  | 133222, 133372         | 20 MHz            | QPSK         | 1<br>Half<br>Full |
| -                  | Conducted Emission           | 133147 to 133447  | 133147, 133297, 133447 | 5 MHz             | QPSK         | 1                 |
|                    |                              | 133172 to 133422  | 133172, 133297, 133422 | 10 MHz            | QPSK         | 1                 |
|                    |                              | 133197 to 133397  | 133197, 133297, 133397 | 15 MHz            | QPSK         | 1                 |
|                    |                              | 133222 to 133372  | 133222, 133297, 133372 | 20 MHz            | QPSK         | 1                 |
| -                  | Radiated Emission Below 1GHz | 133147 to 133447  | 133297                 | 5 MHz             | QPSK         | 1                 |
| -                  | Radiated Emission Above 1GHz | 133147 to 133447  | 133147, 133297, 133447 | 5 MHz             | QPSK         | 1                 |
|                    |                              | 133222 to 133372  | 133222, 133297, 133372 | 20 MHz            | QPSK         | 1                 |

**Note:**

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only ERP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK and 16QAM modes, the other test items were performed under worse mode according to the maximum output power.

**Test Condition:**

| Test Item                       | Environmental Conditions | Input Power    | Tested By     |
|---------------------------------|--------------------------|----------------|---------------|
| ERP / EIRP                      | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Modulation Characteristics      | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Frequency Stability             | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Occupied Bandwidth              | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Band Edge                       | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Peak to Average Ratio           | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Conducted Emission              | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | James Yang    |
| Radiated Emission<br>Below 1GHz | 26 deg. C, 62 % RH       | 120 Vac, 60 Hz | Charles Hsiao |
| Radiated Emission<br>Above 1GHz | 25 deg. C, 60 % RH       | 120 Vac, 60 Hz | Karl Lee      |

### **3.4 EUT Operating Conditions**

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

### **3.5 General Description of Applied Standards and references**

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

#### **Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

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

ANSI 63.26-2015

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

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

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

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

For LTE Band 13:

Control stations and mobile stations in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands and fixed stations transmitting in the 787-788 MHz and 805-806 MHz bands are limited to 30 watts ERP.

Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

For LTE Band 12, 71:

Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

For WCDMA Band 4, LTE Band 4, 66:

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.

#### 4.1.2 Test Procedures

##### Conducted Power Measurement:

- The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator (Built-in power meter).
- Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

##### Maximum EIRP / ERP

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

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

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

where

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

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

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

#### 4.1.3 Test Setup

##### Conducted Power Measurement:



#### 4.1.4 Test Results

##### Conducted Output Power (dBm)

| Band            | WCDMA IV |        |        |
|-----------------|----------|--------|--------|
| TX Channel      | 1312     | 1413   | 1513   |
| Rx Channel      | 1537     | 1638   | 1738   |
| Frequency       | 1712.4   | 1732.6 | 1752.6 |
| RMC 12.2K       | 23.24    | 23.32  | 23.27  |
| HSDPA Subtest-1 | 22.47    | 22.63  | 22.51  |
| HSUPA Subtest-1 | 21.94    | 21.99  | 22.05  |

| LTE Band 4 |           |                 |           |        |        |        |
|------------|-----------|-----------------|-----------|--------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|            |           | Channel         |           | 19957  | 20175  | 20393  |
|            |           | Frequency (MHz) |           | 1710.7 | 1732.5 | 1754.3 |
| 1.4M       | QPSK      | 1               | 0         | 22.91  | 23.05  | 22.80  |
|            |           | 1               | 2         | 23.04  | 23.02  | 22.99  |
|            |           | 1               | 5         | 22.95  | 23.01  | 23.12  |
|            |           | 3               | 0         | 22.35  | 22.04  | 22.37  |
|            |           | 3               | 1         | 22.38  | 22.15  | 22.16  |
|            |           | 3               | 3         | 22.22  | 22.03  | 22.17  |
|            |           | 6               | 0         | 22.02  | 22.05  | 22.31  |
| 1.4M       | 16QAM     | 1               | 0         | 22.06  | 22.20  | 22.01  |
|            |           | 1               | 2         | 22.07  | 22.38  | 22.15  |
|            |           | 1               | 5         | 22.14  | 22.12  | 22.02  |
|            |           | 3               | 0         | 21.30  | 21.28  | 21.36  |
|            |           | 3               | 1         | 21.24  | 21.41  | 21.30  |
|            |           | 3               | 3         | 21.45  | 21.22  | 21.36  |
|            |           | 6               | 0         | 21.59  | 21.43  | 21.28  |

| LTE Band 4 |           |                 |           |        |        |        |
|------------|-----------|-----------------|-----------|--------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|            |           | Channel         |           | 19965  | 20175  | 20385  |
|            |           | Frequency (MHz) |           | 1711.5 | 1732.5 | 1753.5 |
| 3M         | QPSK      | 1               | 0         | 23.02  | 23.07  | 23.19  |
|            |           | 1               | 7         | 23.20  | 23.17  | 22.99  |
|            |           | 1               | 14        | 23.07  | 23.11  | 23.12  |
|            |           | 8               | 0         | 22.37  | 22.30  | 22.17  |
|            |           | 8               | 3         | 22.36  | 22.05  | 22.39  |
|            |           | 8               | 7         | 22.01  | 22.09  | 22.12  |
|            |           | 15              | 0         | 22.31  | 22.07  | 22.35  |
| 3M         | 16QAM     | 1               | 0         | 22.22  | 22.09  | 22.35  |
|            |           | 1               | 7         | 22.11  | 22.10  | 22.09  |
|            |           | 1               | 14        | 22.30  | 22.35  | 22.16  |
|            |           | 8               | 0         | 21.27  | 21.44  | 21.28  |
|            |           | 8               | 3         | 21.42  | 21.33  | 21.31  |
|            |           | 8               | 7         | 21.24  | 21.54  | 21.33  |
|            |           | 15              | 0         | 21.25  | 21.32  | 21.21  |

| LTE Band 4 |           |                 |           |        |        |        |
|------------|-----------|-----------------|-----------|--------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|            |           | Channel         |           | 19975  | 20175  | 20375  |
|            |           | Frequency (MHz) |           | 1712.5 | 1732.5 | 1752.5 |
| 5M         | QPSK      | 1               | 0         | 23.09  | 22.96  | 22.91  |
|            |           | 1               | 12        | 23.16  | 23.03  | 22.94  |
|            |           | 1               | 24        | 23.05  | 22.93  | 22.81  |
|            |           | 12              | 0         | 22.15  | 22.06  | 22.19  |
|            |           | 12              | 6         | 22.31  | 22.19  | 22.20  |
|            |           | 12              | 13        | 22.19  | 22.07  | 22.04  |
|            |           | 25              | 0         | 22.01  | 22.17  | 22.32  |
| 5M         | 16QAM     | 1               | 0         | 22.34  | 22.19  | 22.33  |
|            |           | 1               | 12        | 22.03  | 22.34  | 22.19  |
|            |           | 1               | 24        | 22.23  | 22.02  | 22.37  |
|            |           | 12              | 0         | 21.60  | 21.34  | 21.49  |
|            |           | 12              | 6         | 21.25  | 21.24  | 21.20  |
|            |           | 12              | 13        | 21.37  | 21.37  | 21.35  |
|            |           | 25              | 0         | 21.20  | 21.27  | 21.35  |

| LTE Band 4 |           |                 |           |       |        |       |
|------------|-----------|-----------------|-----------|-------|--------|-------|
| BW         | MCS Index | RB Size         | RB Offset | Low   | Mid    | High  |
|            |           | Channel         |           | 20000 | 20175  | 20350 |
|            |           | Frequency (MHz) |           | 1715  | 1732.5 | 1750  |
| 10M        | QPSK      | 1               | 0         | 23.20 | 23.16  | 22.97 |
|            |           | 1               | 24        | 22.83 | 23.14  | 23.03 |
|            |           | 1               | 49        | 23.12 | 23.13  | 23.11 |
|            |           | 25              | 0         | 22.28 | 22.26  | 22.21 |
|            |           | 25              | 12        | 22.39 | 22.00  | 22.08 |
|            |           | 25              | 25        | 22.05 | 22.22  | 22.12 |
|            |           | 50              | 0         | 22.38 | 22.32  | 22.34 |
| 10M        | 16QAM     | 1               | 0         | 22.23 | 22.24  | 22.17 |
|            |           | 1               | 24        | 22.29 | 22.19  | 22.36 |
|            |           | 1               | 49        | 22.08 | 22.20  | 22.15 |
|            |           | 25              | 0         | 21.44 | 21.57  | 21.50 |
|            |           | 25              | 12        | 21.41 | 21.25  | 21.27 |
|            |           | 25              | 25        | 21.34 | 21.54  | 21.31 |
|            |           | 50              | 0         | 21.36 | 21.54  | 21.34 |

| LTE Band 4 |           |                 |           |        |        |        |
|------------|-----------|-----------------|-----------|--------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|            |           | Channel         |           | 20025  | 20175  | 20325  |
|            |           | Frequency (MHz) |           | 1717.5 | 1732.5 | 1747.5 |
| 15M        | QPSK      | 1               | 0         | 22.89  | 22.95  | 22.97  |
|            |           | 1               | 37        | 22.96  | 23.17  | 22.83  |
|            |           | 1               | 74        | 22.99  | 23.18  | 23.20  |
|            |           | 36              | 0         | 22.39  | 22.38  | 22.06  |
|            |           | 36              | 19        | 22.15  | 22.36  | 22.12  |
|            |           | 36              | 39        | 22.33  | 22.14  | 22.24  |
|            |           | 75              | 0         | 22.22  | 22.10  | 22.34  |
| 15M        | 16QAM     | 1               | 0         | 22.24  | 22.11  | 22.07  |
|            |           | 1               | 37        | 22.19  | 22.16  | 22.10  |
|            |           | 1               | 74        | 22.18  | 22.25  | 22.10  |
|            |           | 36              | 0         | 21.35  | 21.20  | 21.52  |
|            |           | 36              | 19        | 21.27  | 21.30  | 21.53  |
|            |           | 36              | 39        | 21.41  | 21.55  | 21.43  |
|            |           | 75              | 0         | 21.56  | 21.57  | 21.29  |

| LTE Band 4 |           |                 |           |       |        |       |
|------------|-----------|-----------------|-----------|-------|--------|-------|
| BW         | MCS Index | RB Size         | RB Offset | Low   | Mid    | High  |
|            |           | Channel         |           | 20050 | 20175  | 20300 |
|            |           | Frequency (MHz) |           | 1720  | 1732.5 | 1745  |
| 20M        | QPSK      | 1               | 0         | 22.93 | 22.99  | 23.17 |
|            |           | 1               | 50        | 23.01 | 22.93  | 23.09 |
|            |           | 1               | 99        | 23.03 | 22.94  | 22.99 |
|            |           | 50              | 0         | 22.35 | 22.22  | 22.36 |
|            |           | 50              | 25        | 22.34 | 22.15  | 22.13 |
|            |           | 50              | 50        | 22.12 | 22.35  | 22.34 |
|            |           | 100             | 0         | 22.18 | 22.26  | 22.24 |
| 20M        | 16QAM     | 1               | 0         | 22.06 | 22.21  | 22.09 |
|            |           | 1               | 50        | 22.01 | 22.05  | 22.30 |
|            |           | 1               | 99        | 22.03 | 22.26  | 22.36 |
|            |           | 50              | 0         | 21.58 | 21.34  | 21.55 |
|            |           | 50              | 25        | 21.46 | 21.54  | 21.41 |
|            |           | 50              | 50        | 21.49 | 21.58  | 21.51 |
|            |           | 100             | 0         | 21.36 | 21.28  | 21.40 |

| LTE Band 12 |           |                 |           |       |       |       |
|-------------|-----------|-----------------|-----------|-------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High  |
|             |           | Channel         |           | 23017 | 23095 | 23173 |
|             |           | Frequency (MHz) |           | 699.7 | 707.5 | 715.3 |
| 1.4M        | QPSK      | 1               | 0         | 23.64 | 23.56 | 23.53 |
|             |           | 1               | 2         | 23.46 | 23.46 | 23.49 |
|             |           | 1               | 5         | 23.57 | 23.42 | 23.49 |
|             |           | 3               | 0         | 22.74 | 22.60 | 22.81 |
|             |           | 3               | 1         | 22.66 | 22.72 | 22.84 |
|             |           | 3               | 3         | 22.62 | 22.79 | 22.79 |
|             |           | 6               | 0         | 22.71 | 22.89 | 22.88 |
| 1.4M        | 16QAM     | 1               | 0         | 22.84 | 22.89 | 22.66 |
|             |           | 1               | 2         | 22.85 | 22.77 | 22.71 |
|             |           | 1               | 5         | 22.74 | 22.80 | 22.76 |
|             |           | 3               | 0         | 21.83 | 22.01 | 21.94 |
|             |           | 3               | 1         | 21.98 | 21.96 | 21.89 |
|             |           | 3               | 3         | 21.85 | 22.06 | 21.98 |
|             |           | 6               | 0         | 22.06 | 21.98 | 21.92 |

| LTE Band 12 |           |                 |           |       |       |       |
|-------------|-----------|-----------------|-----------|-------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High  |
|             |           | Channel         |           | 23025 | 23095 | 23165 |
|             |           | Frequency (MHz) |           | 700.5 | 707.5 | 714.5 |
| 3M          | QPSK      | 1               | 0         | 23.62 | 23.61 | 23.42 |
|             |           | 1               | 7         | 23.43 | 23.40 | 23.70 |
|             |           | 1               | 14        | 23.62 | 23.48 | 23.56 |
|             |           | 8               | 0         | 22.70 | 22.81 | 22.87 |
|             |           | 8               | 3         | 22.87 | 22.71 | 22.74 |
|             |           | 8               | 7         | 22.78 | 22.75 | 22.87 |
|             |           | 15              | 0         | 22.90 | 22.79 | 22.68 |
| 3M          | 16QAM     | 1               | 0         | 22.88 | 22.86 | 22.72 |
|             |           | 1               | 7         | 22.71 | 22.63 | 22.83 |
|             |           | 1               | 14        | 22.81 | 22.66 | 22.80 |
|             |           | 8               | 0         | 21.81 | 21.89 | 21.87 |
|             |           | 8               | 3         | 22.02 | 21.90 | 21.96 |
|             |           | 8               | 7         | 21.82 | 21.81 | 21.80 |
|             |           | 15              | 0         | 21.97 | 21.84 | 21.90 |

| LTE Band 12 |           |                 |           |       |       |       |
|-------------|-----------|-----------------|-----------|-------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High  |
|             |           | Channel         |           | 23035 | 23095 | 23155 |
|             |           | Frequency (MHz) |           | 701.5 | 707.5 | 713.5 |
| 5M          | QPSK      | 1               | 0         | 23.68 | 23.62 | 23.49 |
|             |           | 1               | 12        | 23.49 | 23.55 | 23.48 |
|             |           | 1               | 24        | 23.55 | 23.61 | 23.43 |
|             |           | 12              | 0         | 22.82 | 22.76 | 22.70 |
|             |           | 12              | 6         | 22.72 | 22.60 | 22.89 |
|             |           | 12              | 13        | 22.74 | 22.77 | 22.73 |
|             |           | 25              | 0         | 22.82 | 22.89 | 22.66 |
| 5M          | 16QAM     | 1               | 0         | 22.81 | 22.81 | 22.70 |
|             |           | 1               | 12        | 22.74 | 22.76 | 22.60 |
|             |           | 1               | 24        | 22.61 | 22.77 | 22.88 |
|             |           | 12              | 0         | 22.03 | 22.09 | 21.97 |
|             |           | 12              | 6         | 22.04 | 22.06 | 21.92 |
|             |           | 12              | 13        | 21.89 | 22.01 | 21.97 |
|             |           | 25              | 0         | 21.81 | 22.08 | 21.84 |

| LTE Band 12 |           |                 |           |       |       |       |
|-------------|-----------|-----------------|-----------|-------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High  |
|             |           | Channel         |           | 23060 | 23095 | 23130 |
|             |           | Frequency (MHz) |           | 704   | 707.5 | 711   |
| 10M         | QPSK      | 1               | 0         | 23.65 | 23.51 | 23.43 |
|             |           | 1               | 24        | 23.52 | 23.60 | 23.66 |
|             |           | 1               | 49        | 23.43 | 23.62 | 23.55 |
|             |           | 25              | 0         | 22.87 | 22.83 | 22.78 |
|             |           | 25              | 12        | 22.66 | 22.75 | 22.69 |
|             |           | 25              | 25        | 22.81 | 22.70 | 22.70 |
|             |           | 50              | 0         | 22.65 | 22.80 | 22.84 |
| 10M         | 16QAM     | 1               | 0         | 22.86 | 22.85 | 22.79 |
|             |           | 1               | 24        | 22.70 | 22.82 | 22.64 |
|             |           | 1               | 49        | 22.81 | 22.63 | 22.71 |
|             |           | 25              | 0         | 21.85 | 22.01 | 22.01 |
|             |           | 25              | 12        | 21.95 | 22.03 | 21.82 |
|             |           | 25              | 25        | 22.03 | 21.80 | 21.94 |
|             |           | 50              | 0         | 21.99 | 21.85 | 21.85 |

| LTE Band 13 |           |                 |           |       |       |       |
|-------------|-----------|-----------------|-----------|-------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High  |
|             |           | Channel         |           | 23205 | 23230 | 23255 |
|             |           | Frequency (MHz) |           | 779.5 | 782   | 784.5 |
| 5M          | QPSK      | 1               | 0         | 22.42 | 22.48 | 22.36 |
|             |           | 1               | 12        | 22.35 | 22.58 | 22.58 |
|             |           | 1               | 24        | 22.41 | 22.37 | 22.48 |
|             |           | 12              | 0         | 21.50 | 21.75 | 21.52 |
|             |           | 12              | 6         | 21.52 | 21.54 | 21.71 |
|             |           | 12              | 13        | 21.79 | 21.77 | 21.79 |
|             |           | 25              | 0         | 21.70 | 21.50 | 21.74 |
| 5M          | 16QAM     | 1               | 0         | 21.74 | 21.64 | 21.50 |
|             |           | 1               | 12        | 21.50 | 21.76 | 21.74 |
|             |           | 1               | 24        | 21.52 | 21.63 | 21.78 |
|             |           | 12              | 0         | 20.84 | 20.77 | 20.93 |
|             |           | 12              | 6         | 20.95 | 20.99 | 20.91 |
|             |           | 12              | 13        | 20.70 | 20.99 | 20.74 |
|             |           | 25              | 0         | 20.91 | 20.73 | 20.87 |

| LTE Band 13 |           |                 |           |       |
|-------------|-----------|-----------------|-----------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Mid   |
|             |           | Channel         |           | 23230 |
|             |           | Frequency (MHz) |           | 782   |
| 10M         | QPSK      | 1               | 0         | 22.54 |
|             |           | 1               | 24        | 22.32 |
|             |           | 1               | 49        | 22.48 |
|             |           | 25              | 0         | 21.67 |
|             |           | 25              | 12        | 21.51 |
|             |           | 25              | 25        | 21.57 |
|             |           | 50              | 0         | 21.73 |
| 10M         | 16QAM     | 1               | 0         | 21.52 |
|             |           | 1               | 24        | 21.63 |
|             |           | 1               | 49        | 21.51 |
|             |           | 25              | 0         | 20.74 |
|             |           | 25              | 12        | 20.89 |
|             |           | 25              | 25        | 20.95 |
|             |           | 50              | 0         | 20.79 |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 131979 | 132322 | 132665 |
|             |           | Frequency (MHz) |           | 1710.7 | 1745   | 1779.3 |
| 1.4M        | QPSK      | 1               | 0         | 23.14  | 22.99  | 23.28  |
|             |           | 1               | 2         | 23.30  | 23.13  | 23.24  |
|             |           | 1               | 5         | 23.08  | 23.00  | 23.22  |
|             |           | 3               | 0         | 22.30  | 22.16  | 22.35  |
|             |           | 3               | 1         | 22.29  | 22.43  | 22.15  |
|             |           | 3               | 3         | 22.38  | 22.30  | 22.43  |
|             |           | 6               | 0         | 22.22  | 22.30  | 22.39  |
| 1.4M        | 16QAM     | 1               | 0         | 22.41  | 22.24  | 22.22  |
|             |           | 1               | 2         | 22.50  | 22.19  | 22.24  |
|             |           | 1               | 5         | 22.39  | 22.12  | 22.17  |
|             |           | 3               | 0         | 21.54  | 21.59  | 21.39  |
|             |           | 3               | 1         | 21.62  | 21.41  | 21.59  |
|             |           | 3               | 3         | 21.50  | 21.59  | 21.54  |
|             |           | 6               | 0         | 21.56  | 21.63  | 21.40  |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 131987 | 132322 | 132657 |
|             |           | Frequency (MHz) |           | 1711.5 | 1745   | 1778.5 |
| 3M          | QPSK      | 1               | 0         | 22.90  | 22.95  | 23.01  |
|             |           | 1               | 7         | 23.14  | 22.92  | 23.29  |
|             |           | 1               | 14        | 23.01  | 23.10  | 22.94  |
|             |           | 8               | 0         | 22.19  | 22.16  | 22.24  |
|             |           | 8               | 3         | 22.13  | 22.12  | 22.16  |
|             |           | 8               | 7         | 22.30  | 22.48  | 22.42  |
|             |           | 15              | 0         | 22.33  | 22.46  | 22.12  |
| 3M          | 16QAM     | 1               | 0         | 22.47  | 22.21  | 22.13  |
|             |           | 1               | 7         | 22.39  | 22.49  | 22.21  |
|             |           | 1               | 14        | 22.24  | 22.45  | 22.38  |
|             |           | 8               | 0         | 21.45  | 21.36  | 21.49  |
|             |           | 8               | 3         | 21.34  | 21.33  | 21.36  |
|             |           | 8               | 7         | 21.37  | 21.64  | 21.69  |
|             |           | 15              | 0         | 21.66  | 21.38  | 21.35  |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 131997 | 132322 | 132647 |
|             |           | Frequency (MHz) |           | 1712.5 | 1745   | 1777.5 |
| 5M          | QPSK      | 1               | 0         | 22.90  | 23.10  | 22.90  |
|             |           | 1               | 12        | 22.92  | 23.23  | 23.01  |
|             |           | 1               | 24        | 22.95  | 23.04  | 23.27  |
|             |           | 12              | 0         | 22.35  | 22.15  | 22.25  |
|             |           | 12              | 6         | 22.42  | 22.39  | 22.29  |
|             |           | 12              | 13        | 22.44  | 22.29  | 22.10  |
|             |           | 25              | 0         | 22.41  | 22.20  | 22.33  |
| 5M          | 16QAM     | 1               | 0         | 22.33  | 22.27  | 22.13  |
|             |           | 1               | 12        | 22.26  | 22.13  | 22.10  |
|             |           | 1               | 24        | 22.34  | 22.15  | 22.42  |
|             |           | 12              | 0         | 21.63  | 21.58  | 21.58  |
|             |           | 12              | 6         | 21.69  | 21.53  | 21.40  |
|             |           | 12              | 13        | 21.43  | 21.66  | 21.49  |
|             |           | 25              | 0         | 21.67  | 21.43  | 21.32  |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 132022 | 132322 | 132622 |
|             |           | Frequency (MHz) |           | 1715   | 1745   | 1775   |
| 10M         | QPSK      | 1               | 0         | 23.14  | 23.21  | 23.01  |
|             |           | 1               | 24        | 22.99  | 23.13  | 23.27  |
|             |           | 1               | 49        | 23.02  | 23.02  | 23.03  |
|             |           | 25              | 0         | 22.25  | 22.21  | 22.31  |
|             |           | 25              | 12        | 22.26  | 22.13  | 22.41  |
|             |           | 25              | 25        | 22.41  | 22.38  | 22.37  |
|             |           | 50              | 0         | 22.35  | 22.12  | 22.40  |
| 10M         | 16QAM     | 1               | 0         | 22.35  | 22.28  | 22.26  |
|             |           | 1               | 24        | 22.21  | 22.32  | 22.11  |
|             |           | 1               | 49        | 22.15  | 22.33  | 22.35  |
|             |           | 25              | 0         | 21.68  | 21.68  | 21.43  |
|             |           | 25              | 12        | 21.47  | 21.65  | 21.53  |
|             |           | 25              | 25        | 21.68  | 21.61  | 21.67  |
|             |           | 50              | 0         | 21.68  | 21.49  | 21.56  |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 132047 | 132322 | 132597 |
|             |           | Frequency (MHz) |           | 1717.5 | 1745   | 1772.5 |
| 15M         | QPSK      | 1               | 0         | 23.15  | 23.21  | 23.09  |
|             |           | 1               | 37        | 23.13  | 23.16  | 22.93  |
|             |           | 1               | 74        | 23.05  | 23.11  | 23.16  |
|             |           | 36              | 0         | 22.45  | 22.36  | 22.44  |
|             |           | 36              | 19        | 22.37  | 22.36  | 22.21  |
|             |           | 36              | 39        | 22.41  | 22.37  | 22.16  |
|             |           | 75              | 0         | 22.30  | 22.27  | 22.13  |
| 15M         | 16QAM     | 1               | 0         | 22.37  | 22.43  | 22.16  |
|             |           | 1               | 37        | 22.44  | 22.37  | 22.25  |
|             |           | 1               | 74        | 22.25  | 22.37  | 22.24  |
|             |           | 36              | 0         | 21.59  | 21.58  | 21.62  |
|             |           | 36              | 19        | 21.38  | 21.53  | 21.49  |
|             |           | 36              | 39        | 21.34  | 21.70  | 21.67  |
|             |           | 75              | 0         | 21.47  | 21.34  | 21.50  |

| LTE Band 66 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 132072 | 132322 | 132572 |
|             |           | Frequency (MHz) |           | 1720   | 1745   | 1770   |
| 20M         | QPSK      | 1               | 0         | 22.96  | 23.06  | 22.90  |
|             |           | 1               | 50        | 22.99  | 23.21  | 22.96  |
|             |           | 1               | 99        | 23.00  | 23.14  | 22.99  |
|             |           | 50              | 0         | 22.12  | 22.39  | 22.34  |
|             |           | 50              | 25        | 22.18  | 22.18  | 22.34  |
|             |           | 50              | 50        | 22.13  | 22.27  | 22.42  |
|             |           | 100             | 0         | 22.17  | 22.31  | 22.34  |
| 20M         | 16QAM     | 1               | 0         | 22.42  | 22.28  | 22.36  |
|             |           | 1               | 50        | 22.43  | 22.49  | 22.10  |
|             |           | 1               | 99        | 22.12  | 22.37  | 22.38  |
|             |           | 50              | 0         | 21.31  | 21.33  | 21.54  |
|             |           | 50              | 25        | 21.60  | 21.41  | 21.53  |
|             |           | 50              | 50        | 21.38  | 21.63  | 21.48  |
|             |           | 100             | 0         | 21.65  | 21.34  | 21.33  |

| LTE Band 71 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 133147 | 133297 | 133447 |
|             |           | Frequency (MHz) |           | 665.5  | 680.5  | 695.5  |
| 5M          | QPSK      | 1               | 0         | 23.54  | 23.59  | 23.43  |
|             |           | 1               | 12        | 23.50  | 23.45  | 23.70  |
|             |           | 1               | 24        | 23.32  | 23.36  | 23.59  |
|             |           | 12              | 0         | 22.56  | 22.70  | 22.83  |
|             |           | 12              | 6         | 22.54  | 22.61  | 22.58  |
|             |           | 12              | 13        | 22.60  | 22.82  | 22.54  |
|             |           | 25              | 0         | 22.69  | 22.53  | 22.77  |
| 5M          | 16QAM     | 1               | 0         | 22.73  | 22.65  | 22.86  |
|             |           | 1               | 12        | 22.88  | 22.55  | 22.58  |
|             |           | 1               | 24        | 22.74  | 22.66  | 22.75  |
|             |           | 12              | 0         | 21.95  | 21.75  | 21.90  |
|             |           | 12              | 6         | 21.72  | 21.79  | 21.95  |
|             |           | 12              | 13        | 21.81  | 22.01  | 21.94  |
|             |           | 25              | 0         | 21.82  | 21.79  | 22.03  |

| LTE Band 71 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 133172 | 133297 | 133422 |
|             |           | Frequency (MHz) |           | 668    | 680.5  | 693    |
| 10M         | QPSK      | 1               | 0         | 23.62  | 23.32  | 23.32  |
|             |           | 1               | 24        | 23.64  | 23.54  | 23.32  |
|             |           | 1               | 49        | 23.40  | 23.48  | 23.61  |
|             |           | 25              | 0         | 22.61  | 22.87  | 22.71  |
|             |           | 25              | 12        | 22.84  | 22.63  | 22.79  |
|             |           | 25              | 25        | 22.72  | 22.62  | 22.80  |
|             |           | 50              | 0         | 22.75  | 22.71  | 22.77  |
| 10M         | 16QAM     | 1               | 0         | 22.65  | 22.82  | 22.89  |
|             |           | 1               | 24        | 22.52  | 22.85  | 22.77  |
|             |           | 1               | 49        | 22.58  | 22.77  | 22.50  |
|             |           | 25              | 0         | 22.09  | 22.01  | 22.07  |
|             |           | 25              | 12        | 22.04  | 21.80  | 22.07  |
|             |           | 25              | 25        | 22.08  | 21.74  | 21.86  |
|             |           | 50              | 0         | 21.95  | 21.85  | 22.10  |

| LTE Band 71 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 133197 | 133297 | 133397 |
|             |           | Frequency (MHz) |           | 670.5  | 680.5  | 690.5  |
| 15M         | QPSK      | 1               | 0         | 23.51  | 23.43  | 23.39  |
|             |           | 1               | 37        | 23.68  | 23.47  | 23.57  |
|             |           | 1               | 74        | 23.38  | 23.45  | 23.55  |
|             |           | 36              | 0         | 22.79  | 22.59  | 22.88  |
|             |           | 36              | 19        | 22.82  | 22.74  | 22.53  |
|             |           | 36              | 39        | 22.76  | 22.73  | 22.71  |
|             |           | 75              | 0         | 22.53  | 22.87  | 22.69  |
| 15M         | 16QAM     | 1               | 0         | 22.81  | 22.58  | 22.71  |
|             |           | 1               | 37        | 22.69  | 22.77  | 22.65  |
|             |           | 1               | 74        | 22.66  | 22.56  | 22.63  |
|             |           | 36              | 0         | 21.89  | 22.00  | 21.94  |
|             |           | 36              | 19        | 22.01  | 21.76  | 21.72  |
|             |           | 36              | 39        | 22.07  | 22.08  | 21.86  |
|             |           | 75              | 0         | 22.04  | 21.95  | 22.06  |

| LTE Band 71 |           |                 |           |        |        |        |
|-------------|-----------|-----------------|-----------|--------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High   |
|             |           | Channel         |           | 133222 | 133297 | 133372 |
|             |           | Frequency (MHz) |           | 673    | 680.5  | 688    |
| 20M         | QPSK      | 1               | 0         | 23.53  | 23.47  | 23.52  |
|             |           | 1               | 50        | 23.37  | 23.46  | 23.57  |
|             |           | 1               | 99        | 23.65  | 23.48  | 23.68  |
|             |           | 50              | 0         | 22.78  | 22.53  | 22.68  |
|             |           | 50              | 25        | 22.88  | 22.79  | 22.86  |
|             |           | 50              | 50        | 22.69  | 22.54  | 22.70  |
|             |           | 100             | 0         | 22.51  | 22.59  | 22.74  |
| 20M         | 16QAM     | 1               | 0         | 22.73  | 22.76  | 22.75  |
|             |           | 1               | 50        | 22.57  | 22.54  | 22.84  |
|             |           | 1               | 99        | 22.88  | 22.88  | 22.86  |
|             |           | 50              | 0         | 21.88  | 22.09  | 21.82  |
|             |           | 50              | 25        | 22.04  | 21.90  | 21.87  |
|             |           | 50              | 50        | 21.82  | 21.71  | 21.98  |
|             |           | 100             | 0         | 22.06  | 22.04  | 21.96  |

**ERP/EIRP Power (dBm)**

| Band            | WCDMA IV |              |        |
|-----------------|----------|--------------|--------|
| TX Channel      | 1312     | 1413         | 1513   |
| Rx Channel      | 1537     | 1638         | 1738   |
| Frequency       | 1712.4   | 1732.6       | 1752.6 |
| RMC 12.2K       | 24.90    | <b>24.98</b> | 24.93  |
| HSDPA Subtest-1 | 24.13    | 24.29        | 24.17  |
| HSUPA Subtest-1 | 23.60    | 23.65        | 23.71  |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |        |        |              |
|------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|            |           | Channel         |           | 19957  | 20175  | 20393        |
|            |           | Frequency (MHz) |           | 1710.7 | 1732.5 | 1754.3       |
| 1.4M       | QPSK      | 1               | 0         | 24.57  | 24.71  | 24.46        |
|            |           | 1               | 2         | 24.70  | 24.68  | 24.65        |
|            |           | 1               | 5         | 24.61  | 24.67  | <b>24.78</b> |
|            |           | 3               | 0         | 24.01  | 23.70  | 24.03        |
|            |           | 3               | 1         | 24.04  | 23.81  | 23.82        |
|            |           | 3               | 3         | 23.88  | 23.69  | 23.83        |
|            |           | 6               | 0         | 23.68  | 23.71  | 23.97        |
| 1.4M       | 16QAM     | 1               | 0         | 23.72  | 23.86  | 23.67        |
|            |           | 1               | 2         | 23.73  | 24.04  | 23.81        |
|            |           | 1               | 5         | 23.80  | 23.78  | 23.68        |
|            |           | 3               | 0         | 22.96  | 22.94  | 23.02        |
|            |           | 3               | 1         | 22.90  | 23.07  | 22.96        |
|            |           | 3               | 3         | 23.11  | 22.88  | 23.02        |
|            |           | 6               | 0         | 23.25  | 23.09  | 22.94        |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |              |        |        |
|------------|-----------|-----------------|-----------|--------------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low          | Mid    | High   |
|            |           | Channel         |           | 19965        | 20175  | 20385  |
|            |           | Frequency (MHz) |           | 1711.5       | 1732.5 | 1753.5 |
| 3M         | QPSK      | 1               | 0         | 24.68        | 24.73  | 24.85  |
|            |           | 1               | 7         | <b>24.86</b> | 24.83  | 24.65  |
|            |           | 1               | 14        | 24.73        | 24.77  | 24.78  |
|            |           | 8               | 0         | 24.03        | 23.96  | 23.83  |
|            |           | 8               | 3         | 24.02        | 23.71  | 24.05  |
|            |           | 8               | 7         | 23.67        | 23.75  | 23.78  |
|            |           | 15              | 0         | 23.97        | 23.73  | 24.01  |
| 3M         | 16QAM     | 1               | 0         | 23.88        | 23.75  | 24.01  |
|            |           | 1               | 7         | 23.77        | 23.76  | 23.75  |
|            |           | 1               | 14        | 23.96        | 24.01  | 23.82  |
|            |           | 8               | 0         | 22.93        | 23.10  | 22.94  |
|            |           | 8               | 3         | 23.08        | 22.99  | 22.97  |
|            |           | 8               | 7         | 22.90        | 23.20  | 22.99  |
|            |           | 15              | 0         | 22.91        | 22.98  | 22.87  |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |              |        |        |
|------------|-----------|-----------------|-----------|--------------|--------|--------|
| BW         | MCS Index | RB Size         | RB Offset | Low          | Mid    | High   |
|            |           | Channel         |           | 19975        | 20175  | 20375  |
|            |           | Frequency (MHz) |           | 1712.5       | 1732.5 | 1752.5 |
| 5M         | QPSK      | 1               | 0         | 24.75        | 24.62  | 24.57  |
|            |           | 1               | 12        | <b>24.82</b> | 24.69  | 24.60  |
|            |           | 1               | 24        | 24.71        | 24.59  | 24.47  |
|            |           | 12              | 0         | 23.81        | 23.72  | 23.85  |
|            |           | 12              | 6         | 23.97        | 23.85  | 23.86  |
|            |           | 12              | 13        | 23.85        | 23.73  | 23.70  |
|            |           | 25              | 0         | 23.67        | 23.83  | 23.98  |
| 5M         | 16QAM     | 1               | 0         | 24.00        | 23.85  | 23.99  |
|            |           | 1               | 12        | 23.69        | 24.00  | 23.85  |
|            |           | 1               | 24        | 23.89        | 23.68  | 24.03  |
|            |           | 12              | 0         | 23.26        | 23.00  | 23.15  |
|            |           | 12              | 6         | 22.91        | 22.90  | 22.86  |
|            |           | 12              | 13        | 23.03        | 23.03  | 23.01  |
|            |           | 25              | 0         | 22.86        | 22.93  | 23.01  |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |              |        |       |
|------------|-----------|-----------------|-----------|--------------|--------|-------|
| BW         | MCS Index | RB Size         | RB Offset | Low          | Mid    | High  |
|            |           | Channel         |           | 20000        | 20175  | 20350 |
|            |           | Frequency (MHz) |           | 1715         | 1732.5 | 1750  |
| 10M        | QPSK      | 1               | 0         | <b>24.86</b> | 24.82  | 24.63 |
|            |           | 1               | 24        | 24.49        | 24.80  | 24.69 |
|            |           | 1               | 49        | 24.78        | 24.79  | 24.77 |
|            |           | 25              | 0         | 23.94        | 23.92  | 23.87 |
|            |           | 25              | 12        | 24.05        | 23.66  | 23.74 |
|            |           | 25              | 25        | 23.71        | 23.88  | 23.78 |
|            |           | 50              | 0         | 24.04        | 23.98  | 24.00 |
| 10M        | 16QAM     | 1               | 0         | 23.89        | 23.90  | 23.83 |
|            |           | 1               | 24        | 23.95        | 23.85  | 24.02 |
|            |           | 1               | 49        | 23.74        | 23.86  | 23.81 |
|            |           | 25              | 0         | 23.10        | 23.23  | 23.16 |
|            |           | 25              | 12        | 23.07        | 22.91  | 22.93 |
|            |           | 25              | 25        | 23.00        | 23.20  | 22.97 |
|            |           | 50              | 0         | 23.02        | 23.20  | 23.00 |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |        |        |              |
|------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW         | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|            |           | Channel         |           | 20025  | 20175  | 20325        |
|            |           | Frequency (MHz) |           | 1717.5 | 1732.5 | 1747.5       |
| 15M        | QPSK      | 1               | 0         | 24.55  | 24.61  | 24.63        |
|            |           | 1               | 37        | 24.62  | 24.83  | 24.49        |
|            |           | 1               | 74        | 24.65  | 24.84  | <b>24.86</b> |
|            |           | 36              | 0         | 24.05  | 24.04  | 23.72        |
|            |           | 36              | 19        | 23.81  | 24.02  | 23.78        |
|            |           | 36              | 39        | 23.99  | 23.80  | 23.90        |
|            |           | 75              | 0         | 23.88  | 23.76  | 24.00        |
| 15M        | 16QAM     | 1               | 0         | 23.90  | 23.77  | 23.73        |
|            |           | 1               | 37        | 23.85  | 23.82  | 23.76        |
|            |           | 1               | 74        | 23.84  | 23.91  | 23.76        |
|            |           | 36              | 0         | 23.01  | 22.86  | 23.18        |
|            |           | 36              | 19        | 22.93  | 22.96  | 23.19        |
|            |           | 36              | 39        | 23.07  | 23.21  | 23.09        |
|            |           | 75              | 0         | 23.22  | 23.23  | 22.95        |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 4 |           |                 |           |       |        |              |
|------------|-----------|-----------------|-----------|-------|--------|--------------|
| BW         | MCS Index | RB Size         | RB Offset | Low   | Mid    | High         |
|            |           | Channel         |           | 20050 | 20175  | 20300        |
|            |           | Frequency (MHz) |           | 1720  | 1732.5 | 1745         |
| 20M        | QPSK      | 1               | 0         | 24.59 | 24.65  | <b>24.83</b> |
|            |           | 1               | 50        | 24.67 | 24.59  | 24.75        |
|            |           | 1               | 99        | 24.69 | 24.60  | 24.65        |
|            |           | 50              | 0         | 24.01 | 23.88  | 24.02        |
|            |           | 50              | 25        | 24.00 | 23.81  | 23.79        |
|            |           | 50              | 50        | 23.78 | 24.01  | 24.00        |
|            |           | 100             | 0         | 23.84 | 23.92  | 23.90        |
| 20M        | 16QAM     | 1               | 0         | 23.72 | 23.87  | 23.75        |
|            |           | 1               | 50        | 23.67 | 23.71  | 23.96        |
|            |           | 1               | 99        | 23.69 | 23.92  | 24.02        |
|            |           | 50              | 0         | 23.24 | 23.00  | 23.21        |
|            |           | 50              | 25        | 23.12 | 23.20  | 23.07        |
|            |           | 50              | 50        | 23.15 | 23.24  | 23.17        |
|            |           | 100             | 0         | 23.02 | 22.94  | 23.06        |

\*EIRP = Conducted + antenna gain (1.66dBi)

| LTE Band 12 |           |                 |           |              |       |       |
|-------------|-----------|-----------------|-----------|--------------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low          | Mid   | High  |
|             |           | Channel         |           | 23017        | 23095 | 23173 |
|             |           | Frequency (MHz) |           | 699.7        | 707.5 | 715.3 |
| 1.4M        | QPSK      | 1               | 0         | <b>23.17</b> | 23.09 | 23.06 |
|             |           | 1               | 2         | 22.99        | 22.99 | 23.02 |
|             |           | 1               | 5         | 23.10        | 22.95 | 23.02 |
|             |           | 3               | 0         | 22.27        | 22.13 | 22.34 |
|             |           | 3               | 1         | 22.19        | 22.25 | 22.37 |
|             |           | 3               | 3         | 22.15        | 22.32 | 22.32 |
|             |           | 6               | 0         | 22.24        | 22.42 | 22.41 |
| 1.4M        | 16QAM     | 1               | 0         | 22.37        | 22.42 | 22.19 |
|             |           | 1               | 2         | 22.38        | 22.30 | 22.24 |
|             |           | 1               | 5         | 22.27        | 22.33 | 22.29 |
|             |           | 3               | 0         | 21.36        | 21.54 | 21.47 |
|             |           | 3               | 1         | 21.51        | 21.49 | 21.42 |
|             |           | 3               | 3         | 21.38        | 21.59 | 21.51 |
|             |           | 6               | 0         | 21.59        | 21.51 | 21.45 |

\*ERP = Conducted + antenna gain (1.68dBi)-2.15

| LTE Band 12 |           |                 |           |       |       |              |
|-------------|-----------|-----------------|-----------|-------|-------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High         |
|             |           | Channel         |           | 23025 | 23095 | 23165        |
|             |           | Frequency (MHz) |           | 700.5 | 707.5 | 714.5        |
| 3M          | QPSK      | 1               | 0         | 23.15 | 23.14 | 22.95        |
|             |           | 1               | 7         | 22.96 | 22.93 | <b>23.23</b> |
|             |           | 1               | 14        | 23.15 | 23.01 | 23.09        |
|             |           | 8               | 0         | 22.23 | 22.34 | 22.40        |
|             |           | 8               | 3         | 22.40 | 22.24 | 22.27        |
|             |           | 8               | 7         | 22.31 | 22.28 | 22.40        |
|             |           | 15              | 0         | 22.43 | 22.32 | 22.21        |
| 3M          | 16QAM     | 1               | 0         | 22.41 | 22.39 | 22.25        |
|             |           | 1               | 7         | 22.24 | 22.16 | 22.36        |
|             |           | 1               | 14        | 22.34 | 22.19 | 22.33        |
|             |           | 8               | 0         | 21.34 | 21.42 | 21.40        |
|             |           | 8               | 3         | 21.55 | 21.43 | 21.49        |
|             |           | 8               | 7         | 21.35 | 21.34 | 21.33        |
|             |           | 15              | 0         | 21.50 | 21.37 | 21.43        |

\*ERP = Conducted + antenna gain (1.68dBi)-2.15

| LTE Band 12 |           |                 |           |              |       |       |
|-------------|-----------|-----------------|-----------|--------------|-------|-------|
| BW          | MCS Index | RB Size         | RB Offset | Low          | Mid   | High  |
|             |           | Channel         |           | 23035        | 23095 | 23155 |
|             |           | Frequency (MHz) |           | 701.5        | 707.5 | 713.5 |
| 5M          | QPSK      | 1               | 0         | <b>23.21</b> | 23.15 | 23.02 |
|             |           | 1               | 12        | 23.02        | 23.08 | 23.01 |
|             |           | 1               | 24        | 23.08        | 23.14 | 22.96 |
|             |           | 12              | 0         | 22.35        | 22.29 | 22.23 |
|             |           | 12              | 6         | 22.25        | 22.13 | 22.42 |
|             |           | 12              | 13        | 22.27        | 22.30 | 22.26 |
|             |           | 25              | 0         | 22.35        | 22.42 | 22.19 |
| 5M          | 16QAM     | 1               | 0         | 22.34        | 22.34 | 22.23 |
|             |           | 1               | 12        | 22.27        | 22.29 | 22.13 |
|             |           | 1               | 24        | 22.14        | 22.30 | 22.41 |
|             |           | 12              | 0         | 21.56        | 21.62 | 21.50 |
|             |           | 12              | 6         | 21.57        | 21.59 | 21.45 |
|             |           | 12              | 13        | 21.42        | 21.54 | 21.50 |
|             |           | 25              | 0         | 21.34        | 21.61 | 21.37 |

\*ERP = Conducted + antenna gain (1.68dBi)-2.15

| LTE Band 12 |           |                 |           |       |       |              |
|-------------|-----------|-----------------|-----------|-------|-------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid   | High         |
|             |           | Channel         |           | 23060 | 23095 | 23130        |
|             |           | Frequency (MHz) |           | 704   | 707.5 | 711          |
| 10M         | QPSK      | 1               | 0         | 23.18 | 23.04 | 22.96        |
|             |           | 1               | 24        | 23.05 | 23.13 | <b>23.19</b> |
|             |           | 1               | 49        | 22.96 | 23.15 | 23.08        |
|             |           | 25              | 0         | 22.40 | 22.36 | 22.31        |
|             |           | 25              | 12        | 22.19 | 22.28 | 22.22        |
|             |           | 25              | 25        | 22.34 | 22.23 | 22.23        |
|             |           | 50              | 0         | 22.18 | 22.33 | 22.37        |
| 10M         | 16QAM     | 1               | 0         | 22.39 | 22.38 | 22.32        |
|             |           | 1               | 24        | 22.23 | 22.35 | 22.17        |
|             |           | 1               | 49        | 22.34 | 22.16 | 22.24        |
|             |           | 25              | 0         | 21.38 | 21.54 | 21.54        |
|             |           | 25              | 12        | 21.48 | 21.56 | 21.35        |
|             |           | 25              | 25        | 21.56 | 21.33 | 21.47        |
|             |           | 50              | 0         | 21.52 | 21.38 | 21.38        |

\*ERP = Conducted + antenna gain (1.68dBi)-2.15

| LTE Band 13 |           |                 |           |       |              |              |
|-------------|-----------|-----------------|-----------|-------|--------------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low   | Mid          | High         |
|             |           | Channel         |           | 23205 | 23230        | 23255        |
|             |           | Frequency (MHz) |           | 779.5 | 782          | 784.5        |
| 5M          | QPSK      | 1               | 0         | 21.90 | 21.96        | 21.84        |
|             |           | 1               | 12        | 21.83 | <b>22.06</b> | <b>22.06</b> |
|             |           | 1               | 24        | 21.89 | 21.85        | 21.96        |
|             |           | 12              | 0         | 20.98 | 21.23        | 21.00        |
|             |           | 12              | 6         | 21.00 | 21.02        | 21.19        |
|             |           | 12              | 13        | 21.27 | 21.25        | 21.27        |
|             |           | 25              | 0         | 21.18 | 20.98        | 21.22        |
| 5M          | 16QAM     | 1               | 0         | 21.22 | 21.12        | 20.98        |
|             |           | 1               | 12        | 20.98 | 21.24        | 21.22        |
|             |           | 1               | 24        | 21.00 | 21.11        | 21.26        |
|             |           | 12              | 0         | 20.32 | 20.25        | 20.41        |
|             |           | 12              | 6         | 20.43 | 20.47        | 20.39        |
|             |           | 12              | 13        | 20.18 | 20.47        | 20.22        |
|             |           | 25              | 0         | 20.39 | 20.21        | 20.35        |

\*ERP = Conducted + antenna gain (1.63dBi)-2.15

| LTE Band 13 |           |                 |           |              |
|-------------|-----------|-----------------|-----------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Mid          |
|             |           | Channel         |           | 23230        |
|             |           | Frequency (MHz) |           | 782          |
| 10M         | QPSK      | 1               | 0         | <b>22.02</b> |
|             |           | 1               | 24        | 21.80        |
|             |           | 1               | 49        | 21.96        |
|             |           | 25              | 0         | 21.15        |
|             |           | 25              | 12        | 20.99        |
|             |           | 25              | 25        | 21.05        |
|             |           | 50              | 0         | 21.21        |
| 10M         | 16QAM     | 1               | 0         | 21.00        |
|             |           | 1               | 24        | 21.11        |
|             |           | 1               | 49        | 20.99        |
|             |           | 25              | 0         | 20.22        |
|             |           | 25              | 12        | 20.37        |
|             |           | 25              | 25        | 20.43        |
|             |           | 50              | 0         | 20.27        |

\*ERP = Conducted + antenna gain (1.63dBi)-2.15

| LTE Band 66 |           |                 |           |              |        |        |
|-------------|-----------|-----------------|-----------|--------------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low          | Mid    | High   |
|             |           | Channel         |           | 131979       | 132322 | 132665 |
|             |           | Frequency (MHz) |           | 1710.7       | 1745   | 1779.3 |
| 1.4M        | QPSK      | 1               | 0         | 25.09        | 24.94  | 25.23  |
|             |           | 1               | 2         | <b>25.25</b> | 25.08  | 25.19  |
|             |           | 1               | 5         | 25.03        | 24.95  | 25.17  |
|             |           | 3               | 0         | 24.25        | 24.11  | 24.30  |
|             |           | 3               | 1         | 24.24        | 24.38  | 24.10  |
|             |           | 3               | 3         | 24.33        | 24.25  | 24.38  |
|             |           | 6               | 0         | 24.17        | 24.25  | 24.34  |
| 1.4M        | 16QAM     | 1               | 0         | 24.36        | 24.19  | 24.17  |
|             |           | 1               | 2         | 24.45        | 24.14  | 24.19  |
|             |           | 1               | 5         | 24.34        | 24.07  | 24.12  |
|             |           | 3               | 0         | 23.49        | 23.54  | 23.34  |
|             |           | 3               | 1         | 23.57        | 23.36  | 23.54  |
|             |           | 3               | 3         | 23.45        | 23.54  | 23.49  |
|             |           | 6               | 0         | 23.51        | 23.58  | 23.35  |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 66 |           |                 |           |        |        |              |
|-------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|             |           | Channel         |           | 131987 | 132322 | 132657       |
|             |           | Frequency (MHz) |           | 1711.5 | 1745   | 1778.5       |
| 3M          | QPSK      | 1               | 0         | 24.85  | 24.90  | 24.96        |
|             |           | 1               | 7         | 25.09  | 24.87  | <b>25.24</b> |
|             |           | 1               | 14        | 24.96  | 25.05  | 24.89        |
|             |           | 8               | 0         | 24.14  | 24.11  | 24.19        |
|             |           | 8               | 3         | 24.08  | 24.07  | 24.11        |
|             |           | 8               | 7         | 24.25  | 24.43  | 24.37        |
|             |           | 15              | 0         | 24.28  | 24.41  | 24.07        |
| 3M          | 16QAM     | 1               | 0         | 24.42  | 24.16  | 24.08        |
|             |           | 1               | 7         | 24.34  | 24.44  | 24.16        |
|             |           | 1               | 14        | 24.19  | 24.40  | 24.33        |
|             |           | 8               | 0         | 23.40  | 23.31  | 23.44        |
|             |           | 8               | 3         | 23.29  | 23.28  | 23.31        |
|             |           | 8               | 7         | 23.32  | 23.59  | 23.64        |
|             |           | 15              | 0         | 23.61  | 23.33  | 23.30        |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 66 |           |                 |           |        |        |              |
|-------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|             |           | Channel         |           | 131997 | 132322 | 132647       |
|             |           | Frequency (MHz) |           | 1712.5 | 1745   | 1777.5       |
| 5M          | QPSK      | 1               | 0         | 24.85  | 25.05  | 24.85        |
|             |           | 1               | 12        | 24.87  | 25.18  | 24.96        |
|             |           | 1               | 24        | 24.90  | 24.99  | <b>25.22</b> |
|             |           | 12              | 0         | 24.30  | 24.10  | 24.20        |
|             |           | 12              | 6         | 24.37  | 24.34  | 24.24        |
|             |           | 12              | 13        | 24.39  | 24.24  | 24.05        |
|             |           | 25              | 0         | 24.36  | 24.15  | 24.28        |
| 5M          | 16QAM     | 1               | 0         | 24.28  | 24.22  | 24.08        |
|             |           | 1               | 12        | 24.21  | 24.08  | 24.05        |
|             |           | 1               | 24        | 24.29  | 24.10  | 24.37        |
|             |           | 12              | 0         | 23.58  | 23.53  | 23.53        |
|             |           | 12              | 6         | 23.64  | 23.48  | 23.35        |
|             |           | 12              | 13        | 23.38  | 23.61  | 23.44        |
|             |           | 25              | 0         | 23.62  | 23.38  | 23.27        |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 66 |           |                 |           |        |        |              |
|-------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|             |           | Channel         |           | 132022 | 132322 | 132622       |
|             |           | Frequency (MHz) |           | 1715   | 1745   | 1775         |
| 10M         | QPSK      | 1               | 0         | 25.09  | 25.16  | 24.96        |
|             |           | 1               | 24        | 24.94  | 25.08  | <b>25.22</b> |
|             |           | 1               | 49        | 24.97  | 24.97  | 24.98        |
|             |           | 25              | 0         | 24.20  | 24.16  | 24.26        |
|             |           | 25              | 12        | 24.21  | 24.08  | 24.36        |
|             |           | 25              | 25        | 24.36  | 24.33  | 24.32        |
|             |           | 50              | 0         | 24.30  | 24.07  | 24.35        |
| 10M         | 16QAM     | 1               | 0         | 24.30  | 24.23  | 24.21        |
|             |           | 1               | 24        | 24.16  | 24.27  | 24.06        |
|             |           | 1               | 49        | 24.10  | 24.28  | 24.30        |
|             |           | 25              | 0         | 23.63  | 23.63  | 23.38        |
|             |           | 25              | 12        | 23.42  | 23.60  | 23.48        |
|             |           | 25              | 25        | 23.63  | 23.56  | 23.62        |
|             |           | 50              | 0         | 23.63  | 23.44  | 23.51        |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 66 |           |                 |           |        |              |        |
|-------------|-----------|-----------------|-----------|--------|--------------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid          | High   |
|             |           | Channel         |           | 132047 | 132322       | 132597 |
|             |           | Frequency (MHz) |           | 1717.5 | 1745         | 1772.5 |
| 15M         | QPSK      | 1               | 0         | 25.10  | <b>25.16</b> | 25.04  |
|             |           | 1               | 37        | 25.08  | 25.11        | 24.88  |
|             |           | 1               | 74        | 25.00  | 25.06        | 25.11  |
|             |           | 36              | 0         | 24.40  | 24.31        | 24.39  |
|             |           | 36              | 19        | 24.32  | 24.31        | 24.16  |
|             |           | 36              | 39        | 24.36  | 24.32        | 24.11  |
|             |           | 75              | 0         | 24.25  | 24.22        | 24.08  |
| 15M         | 16QAM     | 1               | 0         | 24.32  | 24.38        | 24.11  |
|             |           | 1               | 37        | 24.39  | 24.32        | 24.20  |
|             |           | 1               | 74        | 24.20  | 24.32        | 24.19  |
|             |           | 36              | 0         | 23.54  | 23.53        | 23.57  |
|             |           | 36              | 19        | 23.33  | 23.48        | 23.44  |
|             |           | 36              | 39        | 23.29  | 23.65        | 23.62  |
|             |           | 75              | 0         | 23.42  | 23.29        | 23.45  |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 66 |           |                 |           |        |              |        |
|-------------|-----------|-----------------|-----------|--------|--------------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid          | High   |
|             |           | Channel         |           | 132072 | 132322       | 132572 |
|             |           | Frequency (MHz) |           | 1720   | 1745         | 1770   |
| 20M         | QPSK      | 1               | 0         | 24.91  | 25.01        | 24.85  |
|             |           | 1               | 50        | 24.94  | <b>25.16</b> | 24.91  |
|             |           | 1               | 99        | 24.95  | 25.09        | 24.94  |
|             |           | 50              | 0         | 24.07  | 24.34        | 24.29  |
|             |           | 50              | 25        | 24.13  | 24.13        | 24.29  |
|             |           | 50              | 50        | 24.08  | 24.22        | 24.37  |
|             |           | 100             | 0         | 24.12  | 24.26        | 24.29  |
| 20M         | 16QAM     | 1               | 0         | 24.37  | 24.23        | 24.31  |
|             |           | 1               | 50        | 24.38  | 24.44        | 24.05  |
|             |           | 1               | 99        | 24.07  | 24.32        | 24.33  |
|             |           | 50              | 0         | 23.26  | 23.28        | 23.49  |
|             |           | 50              | 25        | 23.55  | 23.36        | 23.48  |
|             |           | 50              | 50        | 23.33  | 23.58        | 23.43  |
|             |           | 100             | 0         | 23.60  | 23.29        | 23.28  |

\*EIRP = Conducted + antenna gain (1.95dBi)

| LTE Band 71 |           |                 |           |        |        |              |
|-------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|             |           | Channel         |           | 133147 | 133297 | 133447       |
|             |           | Frequency (MHz) |           | 665.5  | 680.5  | 695.5        |
| 5M          | QPSK      | 1               | 0         | 22.89  | 22.94  | 22.78        |
|             |           | 1               | 12        | 22.85  | 22.80  | <b>23.05</b> |
|             |           | 1               | 24        | 22.67  | 22.71  | 22.94        |
|             |           | 12              | 0         | 21.91  | 22.05  | 22.18        |
|             |           | 12              | 6         | 21.89  | 21.96  | 21.93        |
|             |           | 12              | 13        | 21.95  | 22.17  | 21.89        |
|             |           | 25              | 0         | 22.04  | 21.88  | 22.12        |
| 5M          | 16QAM     | 1               | 0         | 22.08  | 22.00  | 22.21        |
|             |           | 1               | 12        | 22.23  | 21.90  | 21.93        |
|             |           | 1               | 24        | 22.09  | 22.01  | 22.10        |
|             |           | 12              | 0         | 21.30  | 21.10  | 21.25        |
|             |           | 12              | 6         | 21.07  | 21.14  | 21.30        |
|             |           | 12              | 13        | 21.16  | 21.36  | 21.29        |
|             |           | 25              | 0         | 21.17  | 21.14  | 21.38        |

\*ERP = Conducted + antenna gain (1.5dBi)-2.15

| LTE Band 71 |           |                 |           |              |        |        |
|-------------|-----------|-----------------|-----------|--------------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low          | Mid    | High   |
|             |           | Channel         |           | 133172       | 133297 | 133422 |
|             |           | Frequency (MHz) |           | 668          | 680.5  | 693    |
| 10M         | QPSK      | 1               | 0         | 22.97        | 22.67  | 22.67  |
|             |           | 1               | 24        | <b>22.99</b> | 22.89  | 22.67  |
|             |           | 1               | 49        | 22.75        | 22.83  | 22.96  |
|             |           | 25              | 0         | 21.96        | 22.22  | 22.06  |
|             |           | 25              | 12        | 22.19        | 21.98  | 22.14  |
|             |           | 25              | 25        | 22.07        | 21.97  | 22.15  |
|             |           | 50              | 0         | 22.10        | 22.06  | 22.12  |
| 10M         | 16QAM     | 1               | 0         | 22.00        | 22.17  | 22.24  |
|             |           | 1               | 24        | 21.87        | 22.20  | 22.12  |
|             |           | 1               | 49        | 21.93        | 22.12  | 21.85  |
|             |           | 25              | 0         | 21.44        | 21.36  | 21.42  |
|             |           | 25              | 12        | 21.39        | 21.15  | 21.42  |
|             |           | 25              | 25        | 21.43        | 21.09  | 21.21  |
|             |           | 50              | 0         | 21.30        | 21.20  | 21.45  |

\*ERP = Conducted + antenna gain (1.5dBi)-2.15

| LTE Band 71 |           |                 |           |              |        |        |
|-------------|-----------|-----------------|-----------|--------------|--------|--------|
| BW          | MCS Index | RB Size         | RB Offset | Low          | Mid    | High   |
|             |           | Channel         |           | 133197       | 133297 | 133397 |
|             |           | Frequency (MHz) |           | 670.5        | 680.5  | 690.5  |
| 15M         | QPSK      | 1               | 0         | 22.86        | 22.78  | 22.74  |
|             |           | 1               | 37        | <b>23.03</b> | 22.82  | 22.92  |
|             |           | 1               | 74        | 22.73        | 22.80  | 22.90  |
|             |           | 36              | 0         | 22.14        | 21.94  | 22.23  |
|             |           | 36              | 19        | 22.17        | 22.09  | 21.88  |
|             |           | 36              | 39        | 22.11        | 22.08  | 22.06  |
|             |           | 75              | 0         | 21.88        | 22.22  | 22.04  |
| 15M         | 16QAM     | 1               | 0         | 22.16        | 21.93  | 22.06  |
|             |           | 1               | 37        | 22.04        | 22.12  | 22.00  |
|             |           | 1               | 74        | 22.01        | 21.91  | 21.98  |
|             |           | 36              | 0         | 21.24        | 21.35  | 21.29  |
|             |           | 36              | 19        | 21.36        | 21.11  | 21.07  |
|             |           | 36              | 39        | 21.42        | 21.43  | 21.21  |
|             |           | 75              | 0         | 21.39        | 21.30  | 21.41  |

\*ERP = Conducted + antenna gain (1.5dBi)-2.15

| LTE Band 71 |           |                 |           |        |        |              |
|-------------|-----------|-----------------|-----------|--------|--------|--------------|
| BW          | MCS Index | RB Size         | RB Offset | Low    | Mid    | High         |
|             |           | Channel         |           | 133222 | 133297 | 133372       |
|             |           | Frequency (MHz) |           | 673    | 680.5  | 688          |
| 20M         | QPSK      | 1               | 0         | 22.88  | 22.82  | 22.87        |
|             |           | 1               | 50        | 22.72  | 22.81  | 22.92        |
|             |           | 1               | 99        | 23.00  | 22.83  | <b>23.03</b> |
|             |           | 50              | 0         | 22.13  | 21.88  | 22.03        |
|             |           | 50              | 25        | 22.23  | 22.14  | 22.21        |
|             |           | 50              | 50        | 22.04  | 21.89  | 22.05        |
|             |           | 100             | 0         | 21.86  | 21.94  | 22.09        |
| 20M         | 16QAM     | 1               | 0         | 22.08  | 22.11  | 22.10        |
|             |           | 1               | 50        | 21.92  | 21.89  | 22.19        |
|             |           | 1               | 99        | 22.23  | 22.23  | 22.21        |
|             |           | 50              | 0         | 21.23  | 21.44  | 21.17        |
|             |           | 50              | 25        | 21.39  | 21.25  | 21.22        |
|             |           | 50              | 50        | 21.17  | 21.06  | 21.33        |
|             |           | 100             | 0         | 21.41  | 21.39  | 21.31        |

\*ERP = Conducted + antenna gain (1.5dBi)-2.15



## Spectrum Plot of Measurement

LTE Band 4

Channel 20175

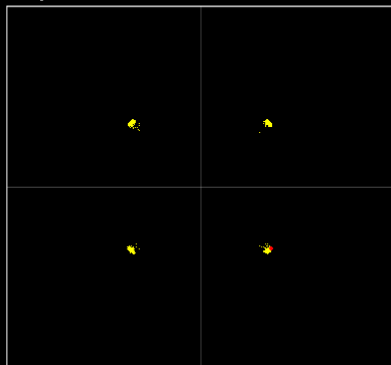
QPSK

16QAM

Fundamental > Constellation

0 Symbol  
I 0.7238 Q -0.6874

Meas. Count : 1/ 1

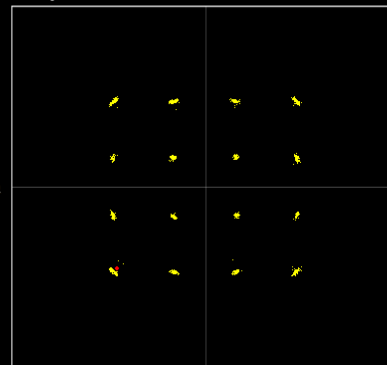


|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.66   | 2.66   | 2.66 %(rms)  | ≤ 17.5 %(rms) |
| Peak Vector Error | 30.60  | 30.60  | 30.60 %      |               |
| Carrier Leakage   | -41.98 | -41.98 | -41.98 dBc   |               |
| IQ Imbalance      | 98.93  | 98.93  | 98.93 %(I/Q) |               |

Fundamental > Constellation

0 Symbol  
I -0.9144 Q -0.9076

Meas. Count : 1/ 1



|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.74   | 2.74   | 2.74 %(rms)  | ≤ 12.5 %(rms) |
| Peak Vector Error | 36.14  | 36.14  | 36.14 %      |               |
| Carrier Leakage   | -40.73 | -40.73 | -40.73 dBc   |               |
| IQ Imbalance      | 98.98  | 98.98  | 98.98 %(I/Q) |               |

## Spectrum Plot of Measurement

LTE Band 12

Channel 23095

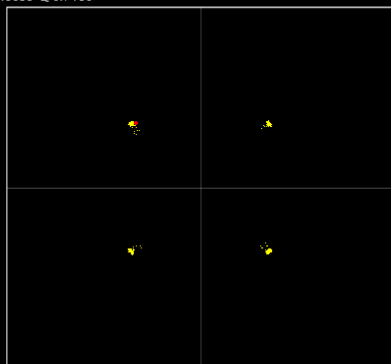
QPSK

16QAM

Fundamental > Constellation

0 Symbol  
I -0.6659 Q 0.7180

Meas. Count : 1/ 1

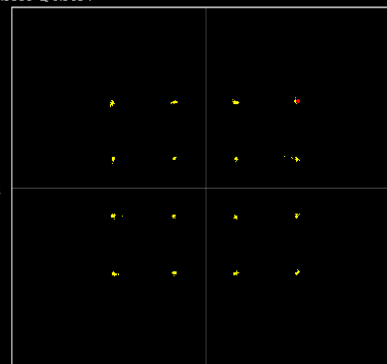


|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.05   | 2.05   | 2.05 %(rms)  | ≤ 17.5 %(rms) |
| Peak Vector Error | 26.19  | 26.19  | 26.19 %      |               |
| Carrier Leakage   | -47.43 | -47.43 | -47.43 dBc   |               |
| IQ Imbalance      | 99.77  | 99.77  | 99.77 %(I/Q) |               |

Fundamental > Constellation

0 Symbol  
I 0.9559 Q 0.9654

Meas. Count : 1/ 1



|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.01   | 2.01   | 2.01 %(rms)  | ≤ 12.5 %(rms) |
| Peak Vector Error | 30.41  | 30.41  | 30.41 %      |               |
| Carrier Leakage   | -48.56 | -48.56 | -48.56 dBc   |               |
| IQ Imbalance      | 99.88  | 99.88  | 99.88 %(I/Q) |               |

### Spectrum Plot of Measurement

LTE Band 13

Channel 23230

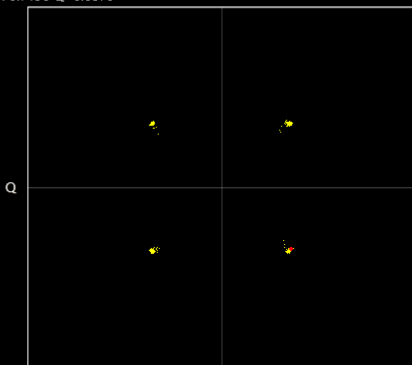
QPSK

16QAM

Fundamental > Constellation

0 Symbol  
I 0.7196 Q -0.6870

Meas. Count : 1/ 1

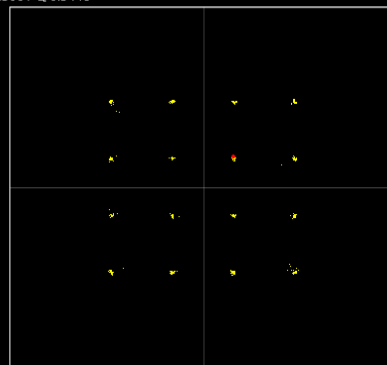


|                   | Avg.   | Max.   | Min.          | Limit         |
|-------------------|--------|--------|---------------|---------------|
| EVM               | 2.06   | 2.06   | 2.06 %(rms)   | ≤ 17.5 %(rms) |
| Peak Vector Error | 22.29  | 22.29  | 22.29 %       |               |
| Carrier Leakage   | -67.02 | -67.02 | -67.02 dBc    |               |
| IQ Imbalance      | 100.23 | 100.23 | 100.23 %(I/Q) |               |

Fundamental > Constellation

0 Symbol  
I 0.3061 Q 0.3448

Meas. Count : 1/ 1



|                   | Avg.   | Max.   | Min.          | Limit         |
|-------------------|--------|--------|---------------|---------------|
| EVM               | 1.96   | 1.96   | 1.96 %(rms)   | ≤ 12.5 %(rms) |
| Peak Vector Error | 26.70  | 26.70  | 26.70 %       |               |
| Carrier Leakage   | -60.44 | -60.44 | -60.44 dBc    |               |
| IQ Imbalance      | 100.05 | 100.05 | 100.05 %(I/Q) |               |

### Spectrum Plot of Measurement

LTE Band 66

Channel 132322

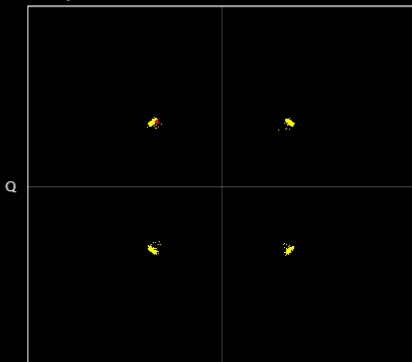
QPSK

16QAM

Fundamental > Constellation

0 Symbol  
I -0.6635 Q 0.7158

Meas. Count : 1/ 1

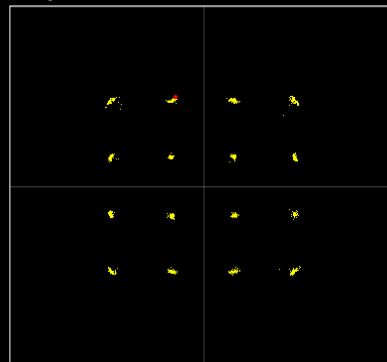


|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.59   | 2.59   | 2.59 %(rms)  | ≤ 17.5 %(rms) |
| Peak Vector Error | 27.71  | 27.71  | 27.71 %      |               |
| Carrier Leakage   | -42.66 | -42.66 | -42.66 dBc   |               |
| IQ Imbalance      | 98.86  | 98.86  | 98.86 %(I/Q) |               |

Fundamental > Constellation

0 Symbol  
I -0.2851 Q 0.9906

Meas. Count : 1/ 1



|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.93   | 2.93   | 2.93 %(rms)  | ≤ 12.5 %(rms) |
| Peak Vector Error | 29.38  | 29.38  | 29.38 %      |               |
| Carrier Leakage   | -41.46 | -41.46 | -41.46 dBc   |               |
| IQ Imbalance      | 98.89  | 98.89  | 98.89 %(I/Q) |               |

## Spectrum Plot of Measurement

LTE Band 71

Channel 133297

QPSK

16QAM

Fundamental > Constellation

0 Symbol  
I 0.7495 Q -0.6531

Meas. Count : 1/ 1

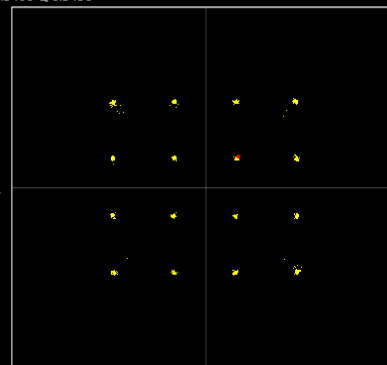


|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.02   | 2.02   | 2.02 %(rms)  | ≤ 17.5 %(rms) |
| Peak Vector Error | 24.89  | 24.89  | 24.89 %      |               |
| Carrier Leakage   | -62.61 | -62.61 | -62.61 dBc   |               |
| IQ Imbalance      | 99.62  | 99.62  | 99.62 %(I/Q) |               |

Fundamental > Constellation

0 Symbol  
I 0.3408 Q 0.3458

Meas. Count : 1/ 1



|                   | Avg.   | Max.   | Min.         | Limit         |
|-------------------|--------|--------|--------------|---------------|
| EVM               | 2.23   | 2.23   | 2.23 %(rms)  | ≤ 12.5 %(rms) |
| Peak Vector Error | 32.59  | 32.59  | 32.59 %      |               |
| Carrier Leakage   | -62.14 | -62.14 | -62.14 dBc   |               |
| IQ Imbalance      | 99.59  | 99.59  | 99.59 %(I/Q) |               |

### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

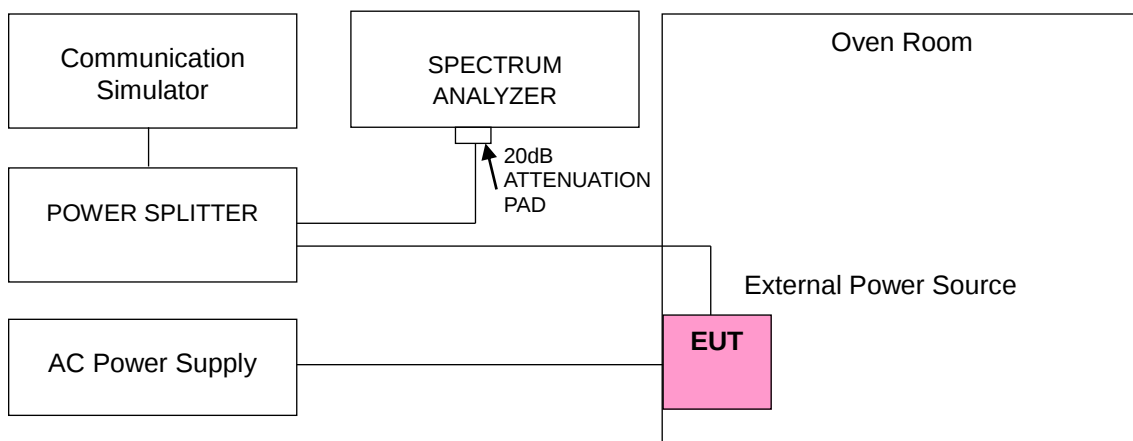
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

#### 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 AC 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

##### Frequency Error vs. Voltage

| Voltage<br>(Volts) | WCDMA           |                       |                 |                       |
|--------------------|-----------------|-----------------------|-----------------|-----------------------|
|                    | Low Channel     |                       | High Channel    |                       |
|                    | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1712.4000019    | 0.001                 | 1752.6000040    | 0.002                 |
| 120                | 1712.4000011    | 0.001                 | 1752.6000011    | 0.001                 |
| 132                | 1712.4000038    | 0.002                 | 1752.6000013    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

##### Frequency Error vs. Temperature

| Temp. (°C) | WCDMA           |                       |                 |                       |
|------------|-----------------|-----------------------|-----------------|-----------------------|
|            | Low Channel     |                       | High Channel    |                       |
|            | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1712.4000011    | 0.001                 | 1752.6000022    | 0.001                 |
| -20        | 1712.4000031    | 0.002                 | 1752.6000035    | 0.002                 |
| -10        | 1712.4000010    | 0.001                 | 1752.6000034    | 0.002                 |
| 0          | 1712.4000017    | 0.001                 | 1752.6000019    | 0.001                 |
| 10         | 1712.4000013    | 0.001                 | 1752.6000039    | 0.002                 |
| 20         | 1712.3999966    | -0.002                | 1752.5999984    | -0.001                |
| 30         | 1712.3999973    | -0.002                | 1752.5999980    | -0.001                |
| 40         | 1712.3999964    | -0.002                | 1752.5999972    | -0.002                |
| 50         | 1712.3999970    | -0.002                | 1752.5999987    | -0.001                |

#### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4                 |                       |                 |                       |
|--------------------|----------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|                    | Low Channel                |                       | High Channel    |                       |
|                    | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1710.7000031               | 0.002                 | 1754.3000025    | 0.001                 |
| 120                | 1710.7000018               | 0.001                 | 1754.3000027    | 0.002                 |
| 132                | 1710.7000039               | 0.002                 | 1754.3000015    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

#### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4                 |                       |                 |                       |
|------------|----------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|            | Low Channel                |                       | High Channel    |                       |
|            | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1710.7000015               | 0.001                 | 1754.3000016    | 0.001                 |
| -20        | 1710.7000017               | 0.001                 | 1754.3000021    | 0.001                 |
| -10        | 1710.7000011               | 0.001                 | 1754.3000023    | 0.001                 |
| 0          | 1710.7000037               | 0.002                 | 1754.3000027    | 0.002                 |
| 10         | 1710.7000040               | 0.002                 | 1754.3000012    | 0.001                 |
| 20         | 1710.6999970               | -0.002                | 1754.2999972    | -0.002                |
| 30         | 1710.6999988               | -0.001                | 1754.2999975    | -0.001                |
| 40         | 1710.6999986               | -0.001                | 1754.2999964    | -0.002                |
| 50         | 1710.6999971               | -0.002                | 1754.2999989    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4               |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 3 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1711.5000035             | 0.002                 | 1753.5000031    | 0.002                 |
| 120                | 1711.5000020             | 0.001                 | 1753.5000018    | 0.001                 |
| 132                | 1711.5000010             | 0.001                 | 1753.5000021    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4               |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 3 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1711.5000038             | 0.002                 | 1753.5000025    | 0.001                 |
| -20        | 1711.5000013             | 0.001                 | 1753.5000036    | 0.002                 |
| -10        | 1711.5000031             | 0.002                 | 1753.5000029    | 0.002                 |
| 0          | 1711.5000019             | 0.001                 | 1753.5000019    | 0.001                 |
| 10         | 1711.5000011             | 0.001                 | 1753.5000038    | 0.002                 |
| 20         | 1711.4999989             | -0.001                | 1753.4999987    | -0.001                |
| 30         | 1711.4999962             | -0.002                | 1753.4999980    | -0.001                |
| 40         | 1711.4999964             | -0.002                | 1753.4999990    | -0.001                |
| 50         | 1711.4999975             | -0.001                | 1753.4999989    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4               |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 5 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1712.5000031             | 0.002                 | 1752.5000026    | 0.001                 |
| 120                | 1712.5000020             | 0.001                 | 1752.5000016    | 0.001                 |
| 132                | 1712.5000017             | 0.001                 | 1752.5000021    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4               |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 5 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1712.5000038             | 0.002                 | 1752.5000014    | 0.001                 |
| -20        | 1712.5000034             | 0.002                 | 1752.5000030    | 0.002                 |
| -10        | 1712.5000014             | 0.001                 | 1752.5000037    | 0.002                 |
| 0          | 1712.5000039             | 0.002                 | 1752.5000028    | 0.002                 |
| 10         | 1712.5000039             | 0.002                 | 1752.5000031    | 0.002                 |
| 20         | 1712.4999971             | -0.002                | 1752.4999988    | -0.001                |
| 30         | 1712.4999976             | -0.001                | 1752.4999969    | -0.002                |
| 40         | 1712.4999971             | -0.002                | 1752.4999971    | -0.002                |
| 50         | 1712.4999981             | -0.001                | 1752.4999964    | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4                |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 10 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1715.0000028              | 0.002                 | 1750.0000033    | 0.002                 |
| 120                | 1715.0000010              | 0.001                 | 1750.0000010    | 0.001                 |
| 132                | 1715.0000010              | 0.001                 | 1750.0000024    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4                |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 10 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1715.0000033              | 0.002                 | 1750.0000038    | 0.002                 |
| -20        | 1715.0000011              | 0.001                 | 1750.0000011    | 0.001                 |
| -10        | 1715.0000017              | 0.001                 | 1750.0000033    | 0.002                 |
| 0          | 1715.0000018              | 0.001                 | 1750.0000019    | 0.001                 |
| 10         | 1715.0000032              | 0.002                 | 1750.0000012    | 0.001                 |
| 20         | 1714.9999988              | -0.001                | 1749.9999982    | -0.001                |
| 30         | 1714.9999968              | -0.002                | 1749.9999974    | -0.001                |
| 40         | 1714.9999988              | -0.001                | 1749.9999983    | -0.001                |
| 50         | 1714.9999986              | -0.001                | 1749.9999985    | -0.001                |

#### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4                |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 15 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1717.5000030              | 0.002                 | 1747.5000021    | 0.001                 |
| 120                | 1717.5000010              | 0.001                 | 1747.5000023    | 0.001                 |
| 132                | 1717.5000034              | 0.002                 | 1747.5000018    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

#### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4                |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 15 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1717.5000011              | 0.001                 | 1747.5000029    | 0.002                 |
| -20        | 1717.5000029              | 0.002                 | 1747.5000031    | 0.002                 |
| -10        | 1717.5000039              | 0.002                 | 1747.5000012    | 0.001                 |
| 0          | 1717.5000024              | 0.001                 | 1747.5000021    | 0.001                 |
| 10         | 1717.5000017              | 0.001                 | 1747.5000016    | 0.001                 |
| 20         | 1717.4999970              | -0.002                | 1747.4999973    | -0.002                |
| 30         | 1717.4999985              | -0.001                | 1747.4999961    | -0.002                |
| 40         | 1717.4999988              | -0.001                | 1747.4999979    | -0.001                |
| 50         | 1717.4999988              | -0.001                | 1747.4999985    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 4                |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 20 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1720.0000027              | 0.002                 | 1745.0000027    | 0.002                 |
| 120                | 1720.0000032              | 0.002                 | 1745.0000012    | 0.001                 |
| 132                | 1720.0000027              | 0.002                 | 1745.0000025    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 4                |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 20 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1720.0000026              | 0.002                 | 1745.0000024    | 0.001                 |
| -20        | 1720.0000036              | 0.002                 | 1745.0000027    | 0.002                 |
| -10        | 1720.0000034              | 0.002                 | 1745.0000035    | 0.002                 |
| 0          | 1720.0000021              | 0.001                 | 1745.0000026    | 0.001                 |
| 10         | 1720.0000031              | 0.002                 | 1745.0000026    | 0.001                 |
| 20         | 1719.9999967              | -0.002                | 1744.9999980    | -0.001                |
| 30         | 1719.9999970              | -0.002                | 1744.9999961    | -0.002                |
| 40         | 1719.9999988              | -0.001                | 1744.9999961    | -0.002                |
| 50         | 1719.9999969              | -0.002                | 1744.9999986    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 12                |                       |                 |                       |
|--------------------|----------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|                    | Low Channel                |                       | High Channel    |                       |
|                    | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 699.7000021                | 0.003                 | 715.3000020     | 0.003                 |
| 120                | 699.7000032                | 0.005                 | 715.3000040     | 0.006                 |
| 132                | 699.7000038                | 0.005                 | 715.3000020     | 0.003                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 12                |                       |                 |                       |
|------------|----------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|            | Low Channel                |                       | High Channel    |                       |
|            | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 699.7000027                | 0.004                 | 715.3000020     | 0.003                 |
| -20        | 699.7000010                | 0.001                 | 715.3000029     | 0.004                 |
| -10        | 699.7000010                | 0.001                 | 715.3000019     | 0.003                 |
| 0          | 699.7000040                | 0.006                 | 715.3000010     | 0.001                 |
| 10         | 699.7000040                | 0.006                 | 715.3000018     | 0.003                 |
| 20         | 699.6999963                | -0.005                | 715.2999985     | -0.002                |
| 30         | 699.6999978                | -0.003                | 715.2999960     | -0.006                |
| 40         | 699.6999974                | -0.004                | 715.2999969     | -0.004                |
| 50         | 699.6999964                | -0.005                | 715.2999982     | -0.003                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 12              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 3 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 700.5000022              | 0.003                 | 714.5000017     | 0.002                 |
| 120                | 700.5000038              | 0.005                 | 714.5000019     | 0.003                 |
| 132                | 700.5000013              | 0.002                 | 714.5000021     | 0.003                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 12              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 3 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 700.5000035              | 0.005                 | 714.5000018     | 0.003                 |
| -20        | 700.5000035              | 0.005                 | 714.5000020     | 0.003                 |
| -10        | 700.5000033              | 0.005                 | 714.5000032     | 0.004                 |
| 0          | 700.5000035              | 0.005                 | 714.5000019     | 0.003                 |
| 10         | 700.5000013              | 0.002                 | 714.5000024     | 0.003                 |
| 20         | 700.4999968              | -0.005                | 714.4999976     | -0.003                |
| 30         | 700.4999990              | -0.001                | 714.4999979     | -0.003                |
| 40         | 700.4999971              | -0.004                | 714.4999961     | -0.005                |
| 50         | 700.4999972              | -0.004                | 714.4999985     | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 12              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 5 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 701.5000015              | 0.002                 | 713.5000017     | 0.002                 |
| 120                | 701.5000021              | 0.003                 | 713.5000010     | 0.001                 |
| 132                | 701.5000022              | 0.003                 | 713.5000026     | 0.004                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 12              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 5 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 701.5000038              | 0.005                 | 713.5000012     | 0.002                 |
| -20        | 701.5000026              | 0.004                 | 713.5000019     | 0.003                 |
| -10        | 701.5000019              | 0.003                 | 713.5000032     | 0.004                 |
| 0          | 701.5000037              | 0.005                 | 713.5000026     | 0.004                 |
| 10         | 701.5000016              | 0.002                 | 713.5000016     | 0.002                 |
| 20         | 701.4999978              | -0.003                | 713.4999962     | -0.005                |
| 30         | 701.4999975              | -0.004                | 713.4999972     | -0.004                |
| 40         | 701.4999975              | -0.004                | 713.4999978     | -0.003                |
| 50         | 701.4999961              | -0.006                | 713.4999988     | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 12               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 10 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 704.0000029               | 0.004                 | 711.0000032     | 0.005                 |
| 120                | 704.0000013               | 0.002                 | 711.0000030     | 0.004                 |
| 132                | 704.0000016               | 0.002                 | 711.0000038     | 0.005                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 12               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 10 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 704.0000038               | 0.005                 | 711.0000024     | 0.003                 |
| -20        | 704.0000027               | 0.004                 | 711.0000028     | 0.004                 |
| -10        | 704.0000036               | 0.005                 | 711.0000016     | 0.002                 |
| 0          | 704.0000032               | 0.005                 | 711.0000011     | 0.002                 |
| 10         | 704.0000031               | 0.004                 | 711.0000030     | 0.004                 |
| 20         | 703.9999986               | -0.002                | 710.9999986     | -0.002                |
| 30         | 703.9999979               | -0.003                | 710.9999960     | -0.006                |
| 40         | 703.9999982               | -0.003                | 710.9999987     | -0.002                |
| 50         | 703.9999962               | -0.005                | 710.9999990     | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 13              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 5 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 779.5000021              | 0.003                 | 784.5000021     | 0.003                 |
| 120                | 779.5000037              | 0.005                 | 784.5000035     | 0.004                 |
| 132                | 779.5000019              | 0.002                 | 784.5000015     | 0.002                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 13              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 5 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 779.5000013              | 0.002                 | 784.5000027     | 0.003                 |
| -20        | 779.5000018              | 0.002                 | 784.5000010     | 0.001                 |
| -10        | 779.5000030              | 0.004                 | 784.5000040     | 0.005                 |
| 0          | 779.5000038              | 0.005                 | 784.5000040     | 0.005                 |
| 10         | 779.5000032              | 0.004                 | 784.5000012     | 0.002                 |
| 20         | 779.4999963              | -0.005                | 784.4999967     | -0.004                |
| 30         | 779.4999982              | -0.002                | 784.4999980     | -0.003                |
| 40         | 779.4999978              | -0.003                | 784.4999984     | -0.002                |
| 50         | 779.4999976              | -0.003                | 784.4999963     | -0.005                |

#### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 13               |                       |
|--------------------|---------------------------|-----------------------|
|                    | Channel Bandwidth: 10 MHz |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) |
| 108                | 782.0000030               | 0.004                 |
| 120                | 782.0000040               | 0.005                 |
| 132                | 782.0000030               | 0.004                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

#### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 13               |                       |
|------------|---------------------------|-----------------------|
|            | Channel Bandwidth: 10 MHz |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) |
| -30        | 782.0000031               | 0.004                 |
| -20        | 782.0000021               | 0.003                 |
| -10        | 782.0000021               | 0.003                 |
| 0          | 782.0000027               | 0.003                 |
| 10         | 782.0000021               | 0.003                 |
| 20         | 781.9999982               | -0.002                |
| 30         | 781.9999972               | -0.004                |
| 40         | 781.9999978               | -0.003                |
| 50         | 781.9999963               | -0.005                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66                |                       |                 |                       |
|--------------------|----------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|                    | Low Channel                |                       | High Channel    |                       |
|                    | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1710.7000022               | 0.001                 | 1779.3000013    | 0.001                 |
| 120                | 1710.7000013               | 0.001                 | 1779.3000036    | 0.002                 |
| 132                | 1710.7000034               | 0.002                 | 1779.3000016    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66                |                       |                 |                       |
|------------|----------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 1.4 MHz |                       |                 |                       |
|            | Low Channel                |                       | High Channel    |                       |
|            | Frequency (MHz)            | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1710.7000033               | 0.002                 | 1779.3000026    | 0.001                 |
| -20        | 1710.7000021               | 0.001                 | 1779.3000037    | 0.002                 |
| -10        | 1710.7000016               | 0.001                 | 1779.3000016    | 0.001                 |
| 0          | 1710.7000026               | 0.002                 | 1779.3000010    | 0.001                 |
| 10         | 1710.7000013               | 0.001                 | 1779.3000013    | 0.001                 |
| 20         | 1710.6999962               | -0.002                | 1779.2999971    | -0.002                |
| 30         | 1710.6999974               | -0.002                | 1779.2999962    | -0.002                |
| 40         | 1710.6999974               | -0.002                | 1779.2999964    | -0.002                |
| 50         | 1710.6999984               | -0.001                | 1779.2999988    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 3 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1711.5000031             | 0.002                 | 1778.5000024    | 0.001                 |
| 120                | 1711.5000034             | 0.002                 | 1778.5000033    | 0.002                 |
| 132                | 1711.5000028             | 0.002                 | 1778.5000021    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 3 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1711.5000032             | 0.002                 | 1778.5000023    | 0.001                 |
| -20        | 1711.5000025             | 0.001                 | 1778.5000018    | 0.001                 |
| -10        | 1711.5000013             | 0.001                 | 1778.5000031    | 0.002                 |
| 0          | 1711.5000018             | 0.001                 | 1778.5000025    | 0.001                 |
| 10         | 1711.5000014             | 0.001                 | 1778.5000022    | 0.001                 |
| 20         | 1711.4999971             | -0.002                | 1778.4999970    | -0.002                |
| 30         | 1711.4999976             | -0.001                | 1778.4999985    | -0.001                |
| 40         | 1711.4999965             | -0.002                | 1778.4999989    | -0.001                |
| 50         | 1711.4999974             | -0.002                | 1778.4999971    | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 5 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1712.5000022             | 0.001                 | 1777.5000034    | 0.002                 |
| 120                | 1712.5000026             | 0.002                 | 1777.5000037    | 0.002                 |
| 132                | 1712.5000012             | 0.001                 | 1777.5000015    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 5 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1712.5000011             | 0.001                 | 1777.5000034    | 0.002                 |
| -20        | 1712.5000026             | 0.002                 | 1777.5000030    | 0.002                 |
| -10        | 1712.5000023             | 0.001                 | 1777.5000030    | 0.002                 |
| 0          | 1712.5000019             | 0.001                 | 1777.5000028    | 0.002                 |
| 10         | 1712.5000034             | 0.002                 | 1777.5000019    | 0.001                 |
| 20         | 1712.4999962             | -0.002                | 1777.4999965    | -0.002                |
| 30         | 1712.4999988             | -0.001                | 1777.4999965    | -0.002                |
| 40         | 1712.4999983             | -0.001                | 1777.4999979    | -0.001                |
| 50         | 1712.4999980             | -0.001                | 1777.4999970    | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 10 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1715.0000024              | 0.001                 | 1775.0000016    | 0.001                 |
| 120                | 1715.0000034              | 0.002                 | 1775.0000028    | 0.002                 |
| 132                | 1715.0000034              | 0.002                 | 1775.0000019    | 0.001                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 10 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1715.0000031              | 0.002                 | 1775.0000025    | 0.001                 |
| -20        | 1715.0000030              | 0.002                 | 1775.0000029    | 0.002                 |
| -10        | 1715.0000022              | 0.001                 | 1775.0000023    | 0.001                 |
| 0          | 1715.0000020              | 0.001                 | 1775.0000018    | 0.001                 |
| 10         | 1715.0000024              | 0.001                 | 1775.0000040    | 0.002                 |
| 20         | 1714.9999968              | -0.002                | 1774.9999976    | -0.001                |
| 30         | 1714.9999971              | -0.002                | 1774.9999979    | -0.001                |
| 40         | 1714.9999989              | -0.001                | 1774.9999990    | -0.001                |
| 50         | 1714.9999981              | -0.001                | 1774.9999980    | -0.001                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 15 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1717.5000011              | 0.001                 | 1772.5000034    | 0.002                 |
| 120                | 1717.5000019              | 0.001                 | 1772.5000033    | 0.002                 |
| 132                | 1717.5000037              | 0.002                 | 1772.5000033    | 0.002                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 15 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1717.5000031              | 0.002                 | 1772.5000025    | 0.001                 |
| -20        | 1717.5000011              | 0.001                 | 1772.5000013    | 0.001                 |
| -10        | 1717.5000038              | 0.002                 | 1772.5000023    | 0.001                 |
| 0          | 1717.5000032              | 0.002                 | 1772.5000019    | 0.001                 |
| 10         | 1717.5000018              | 0.001                 | 1772.5000030    | 0.002                 |
| 20         | 1717.4999971              | -0.002                | 1772.4999990    | -0.001                |
| 30         | 1717.4999981              | -0.001                | 1772.4999970    | -0.002                |
| 40         | 1717.4999985              | -0.001                | 1772.4999985    | -0.001                |
| 50         | 1717.4999980              | -0.001                | 1772.4999968    | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 66               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 20 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 1720.0000022              | 0.001                 | 1770.0000018    | 0.001                 |
| 120                | 1720.0000017              | 0.001                 | 1770.0000039    | 0.002                 |
| 132                | 1720.0000027              | 0.002                 | 1770.0000030    | 0.002                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 66               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 20 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 1720.0000031              | 0.002                 | 1770.0000032    | 0.002                 |
| -20        | 1720.0000031              | 0.002                 | 1770.0000022    | 0.001                 |
| -10        | 1720.0000016              | 0.001                 | 1770.0000038    | 0.002                 |
| 0          | 1720.0000012              | 0.001                 | 1770.0000014    | 0.001                 |
| 10         | 1720.0000013              | 0.001                 | 1770.0000014    | 0.001                 |
| 20         | 1719.9999960              | -0.002                | 1769.9999962    | -0.002                |
| 30         | 1719.9999960              | -0.002                | 1769.9999972    | -0.002                |
| 40         | 1719.9999964              | -0.002                | 1769.9999966    | -0.002                |
| 50         | 1719.9999978              | -0.001                | 1769.9999964    | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 71              |                       |                 |                       |
|--------------------|--------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 5 MHz |                       |                 |                       |
|                    | Low Channel              |                       | High Channel    |                       |
|                    | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 665.5000030              | 0.005                 | 695.5000015     | 0.002                 |
| 120                | 665.5000017              | 0.003                 | 695.5000026     | 0.004                 |
| 132                | 665.5000037              | 0.006                 | 695.5000037     | 0.005                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 71              |                       |                 |                       |
|------------|--------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 5 MHz |                       |                 |                       |
|            | Low Channel              |                       | High Channel    |                       |
|            | Frequency (MHz)          | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 665.5000016              | 0.002                 | 695.5000016     | 0.002                 |
| -20        | 665.5000022              | 0.003                 | 695.5000039     | 0.006                 |
| -10        | 665.5000013              | 0.002                 | 695.5000024     | 0.003                 |
| 0          | 665.5000014              | 0.002                 | 695.5000035     | 0.005                 |
| 10         | 665.5000014              | 0.002                 | 695.5000019     | 0.003                 |
| 20         | 665.4999982              | -0.003                | 695.4999971     | -0.004                |
| 30         | 665.4999990              | -0.002                | 695.4999982     | -0.003                |
| 40         | 665.4999961              | -0.006                | 695.4999986     | -0.002                |
| 50         | 665.4999983              | -0.003                | 695.4999962     | -0.005                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 71               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 10 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 668.0000016               | 0.002                 | 693.0000036     | 0.005                 |
| 120                | 668.0000022               | 0.003                 | 693.0000032     | 0.005                 |
| 132                | 668.0000025               | 0.004                 | 693.0000030     | 0.004                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 71               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 10 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 668.0000022               | 0.003                 | 693.0000017     | 0.002                 |
| -20        | 668.0000011               | 0.002                 | 693.0000026     | 0.004                 |
| -10        | 668.0000026               | 0.004                 | 693.0000027     | 0.004                 |
| 0          | 668.0000018               | 0.003                 | 693.0000036     | 0.005                 |
| 10         | 668.0000024               | 0.004                 | 693.0000038     | 0.005                 |
| 20         | 667.9999982               | -0.003                | 692.9999964     | -0.005                |
| 30         | 667.9999972               | -0.004                | 692.9999964     | -0.005                |
| 40         | 667.9999990               | -0.001                | 692.9999967     | -0.005                |
| 50         | 667.9999963               | -0.006                | 692.9999989     | -0.002                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 71               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 15 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 670.5000013               | 0.002                 | 690.5000012     | 0.002                 |
| 120                | 670.5000028               | 0.004                 | 690.5000023     | 0.003                 |
| 132                | 670.5000024               | 0.004                 | 690.5000039     | 0.006                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 71               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 15 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 670.5000018               | 0.003                 | 690.5000011     | 0.002                 |
| -20        | 670.5000019               | 0.003                 | 690.5000016     | 0.002                 |
| -10        | 670.5000015               | 0.002                 | 690.5000023     | 0.003                 |
| 0          | 670.5000019               | 0.003                 | 690.5000026     | 0.004                 |
| 10         | 670.5000038               | 0.006                 | 690.5000010     | 0.001                 |
| 20         | 670.4999989               | -0.002                | 690.4999969     | -0.004                |
| 30         | 670.4999990               | -0.001                | 690.4999982     | -0.003                |
| 40         | 670.4999968               | -0.005                | 690.4999990     | -0.001                |
| 50         | 670.4999961               | -0.006                | 690.4999966     | -0.005                |

### Frequency Error vs. Voltage

| Voltage<br>(Volts) | LTE Band 71               |                       |                 |                       |
|--------------------|---------------------------|-----------------------|-----------------|-----------------------|
|                    | Channel Bandwidth: 20 MHz |                       |                 |                       |
|                    | Low Channel               |                       | High Channel    |                       |
|                    | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 108                | 673.0000026               | 0.004                 | 688.0000034     | 0.005                 |
| 120                | 673.0000033               | 0.005                 | 688.0000015     | 0.002                 |
| 132                | 673.0000034               | 0.005                 | 688.0000012     | 0.002                 |

**Note:** The applicant defined the normal working voltage is from 108 Vac to 132 Vac.

### Frequency Error vs. Temperature

| Temp. (°C) | LTE Band 71               |                       |                 |                       |
|------------|---------------------------|-----------------------|-----------------|-----------------------|
|            | Channel Bandwidth: 20 MHz |                       |                 |                       |
|            | Low Channel               |                       | High Channel    |                       |
|            | Frequency (MHz)           | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30        | 673.0000036               | 0.005                 | 688.0000025     | 0.004                 |
| -20        | 673.0000030               | 0.004                 | 688.0000039     | 0.006                 |
| -10        | 673.0000035               | 0.005                 | 688.0000016     | 0.002                 |
| 0          | 673.0000037               | 0.005                 | 688.0000032     | 0.005                 |
| 10         | 673.0000018               | 0.003                 | 688.0000027     | 0.004                 |
| 20         | 672.9999975               | -0.004                | 687.9999980     | -0.003                |
| 30         | 672.9999971               | -0.004                | 687.9999967     | -0.005                |
| 40         | 672.9999990               | -0.001                | 687.9999988     | -0.002                |
| 50         | 672.9999988               | -0.002                | 687.9999983     | -0.002                |

## 4.4 Occupied Bandwidth Measurement

### 4.4.1 Limits of Occupied Bandwidth Measurement

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

### 4.4.2 Test Procedure

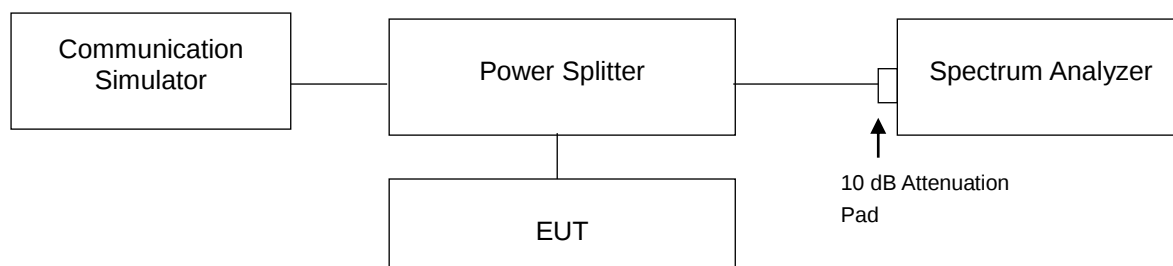
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set  $\geq 3 \times \text{RBW}$ .
- Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- Determine the following reference values: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

### 4.4.3 Test Setup

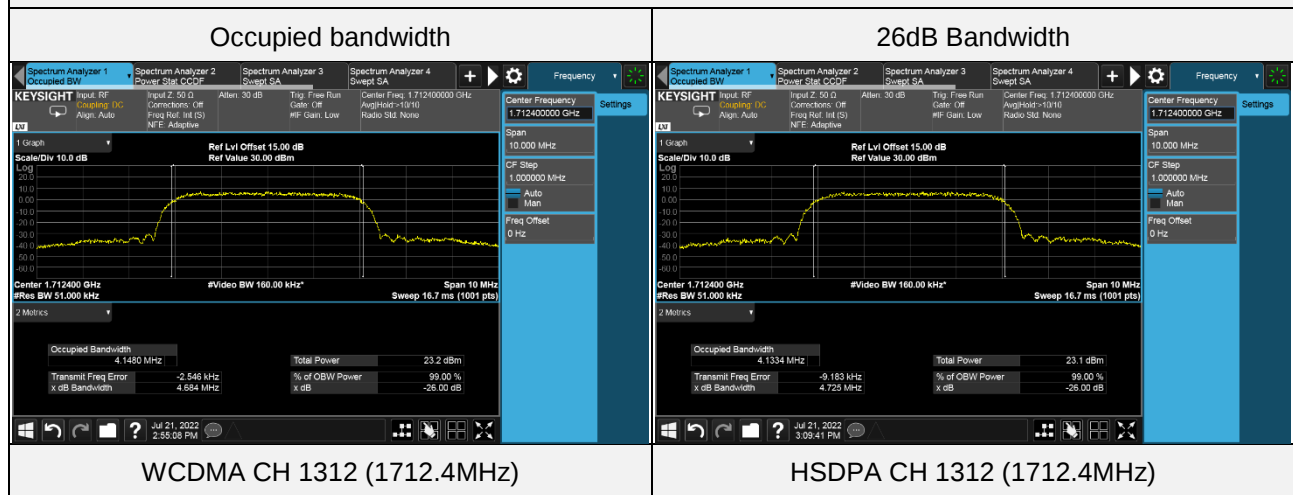


#### 4.4.4 Test Result

##### WCDMA Band 4

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|----------------------|
| WCDMA          | 1312    | 1712.4          | 4.15                     | 4.68                 |
| WCDMA          | 1413    | 1732.6          | 4.14                     | 4.66                 |
| WCDMA          | 1513    | 1752.6          | 4.13                     | 4.71                 |
| HSDPA          | 1312    | 1712.4          | 4.13                     | 4.73                 |
| HSDPA          | 1413    | 1732.6          | 4.13                     | 4.68                 |
| HSDPA          | 1513    | 1752.6          | 4.15                     | 4.70                 |
| HSUPA          | 1312    | 1712.4          | 4.14                     | 4.72                 |
| HSUPA          | 1413    | 1732.6          | 4.13                     | 4.70                 |
| HSUPA          | 1513    | 1752.6          | 4.14                     | 4.69                 |

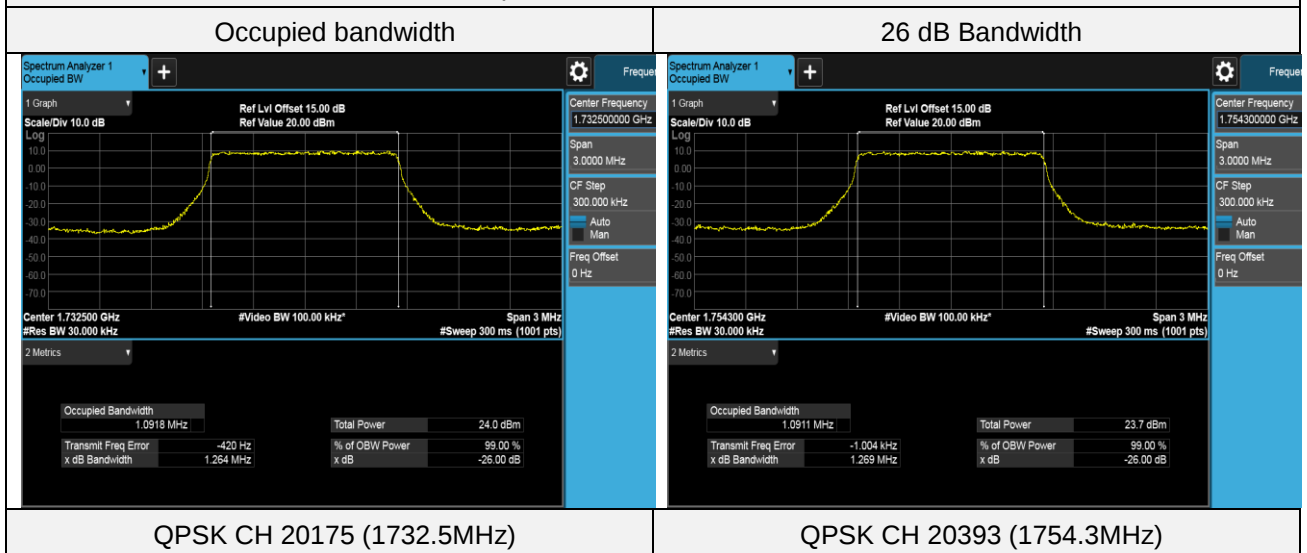
#### Spectrum Plot of Worst Value



### LTE Band 4 (Channel Bandwidth 1.4MHz)

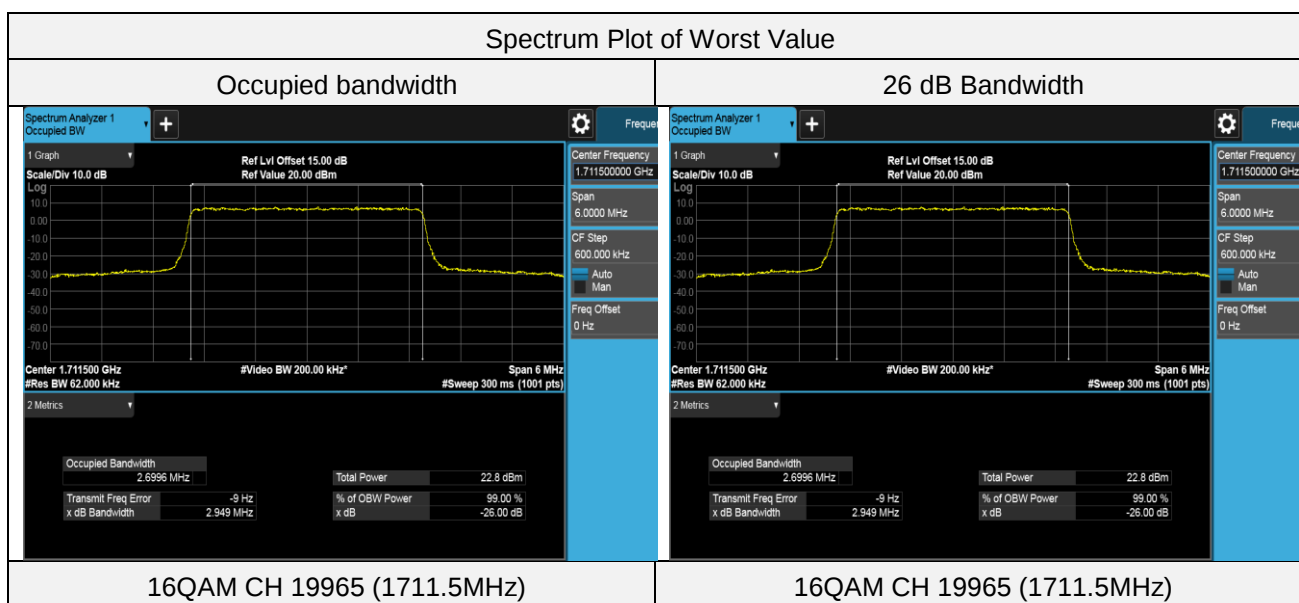
| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 19957   | 1710.7          | 1.0881                   | 1.265                 |
| QPSK           | 20175   | 1732.5          | 1.0918                   | 1.264                 |
| QPSK           | 20393   | 1754.3          | 1.0911                   | 1.269                 |
| 16QAM          | 19957   | 1710.7          | 1.0889                   | 1.259                 |
| 16QAM          | 20175   | 1732.5          | 1.0872                   | 1.253                 |
| 16QAM          | 20393   | 1754.3          | 1.0879                   | 1.251                 |

### Spectrum Plot of Worst Value



### LTE Band 4 (Channel Bandwidth 3MHz)

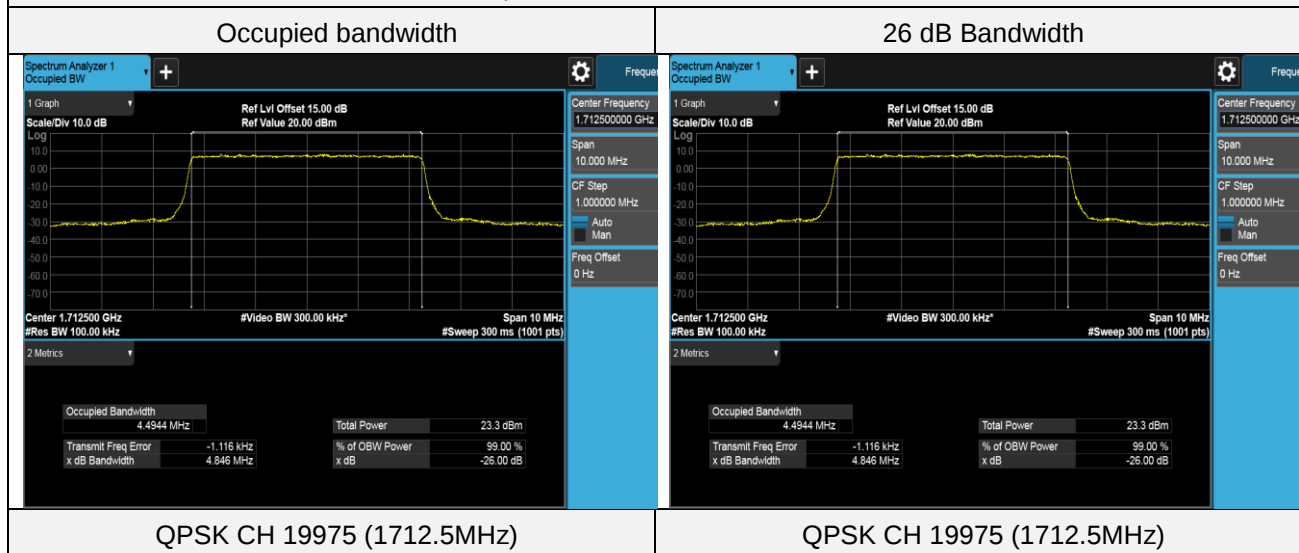
| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 19965   | 1711.5          | 2.6993                   | 2.921                 |
| QPSK           | 20175   | 1732.5          | 2.6985                   | 2.920                 |
| QPSK           | 20385   | 1753.5          | 2.6956                   | 2.921                 |
| 16QAM          | 19965   | 1711.5          | 2.6996                   | 2.949                 |
| 16QAM          | 20175   | 1732.5          | 2.6984                   | 2.918                 |
| 16QAM          | 20385   | 1753.5          | 2.6993                   | 2.931                 |



### LTE Band 4 (Channel Bandwidth 5MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 19975   | 1712.5          | 4.4944                   | 4.846                 |
| QPSK           | 20175   | 1732.5          | 4.4925                   | 4.827                 |
| QPSK           | 20375   | 1752.5          | 4.4901                   | 4.824                 |
| 16QAM          | 19975   | 1712.5          | 4.4922                   | 4.822                 |
| 16QAM          | 20175   | 1732.5          | 4.4907                   | 4.818                 |
| 16QAM          | 20375   | 1752.5          | 4.4921                   | 4.825                 |

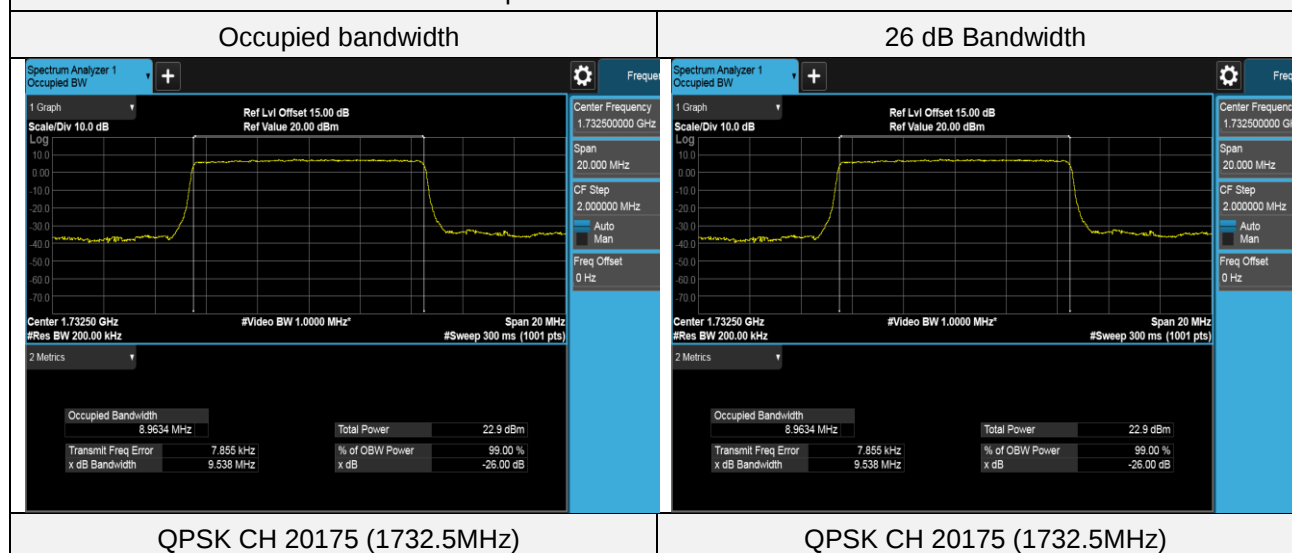
### Spectrum Plot of Worst Value



# LTE Band 4 (Channel Bandwidth 10 MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 20000   | 1715            | 8.9516                   | 9.505                 |
| QPSK           | 20175   | 1732.5          | 8.9634                   | 9.538                 |
| QPSK           | 20350   | 1750            | 8.9496                   | 9.496                 |
| 16QAM          | 20000   | 1715            | 8.9446                   | 9.506                 |
| 16QAM          | 20175   | 1732.5          | 8.9603                   | 9.519                 |
| 16QAM          | 20350   | 1750            | 8.9469                   | 9.493                 |

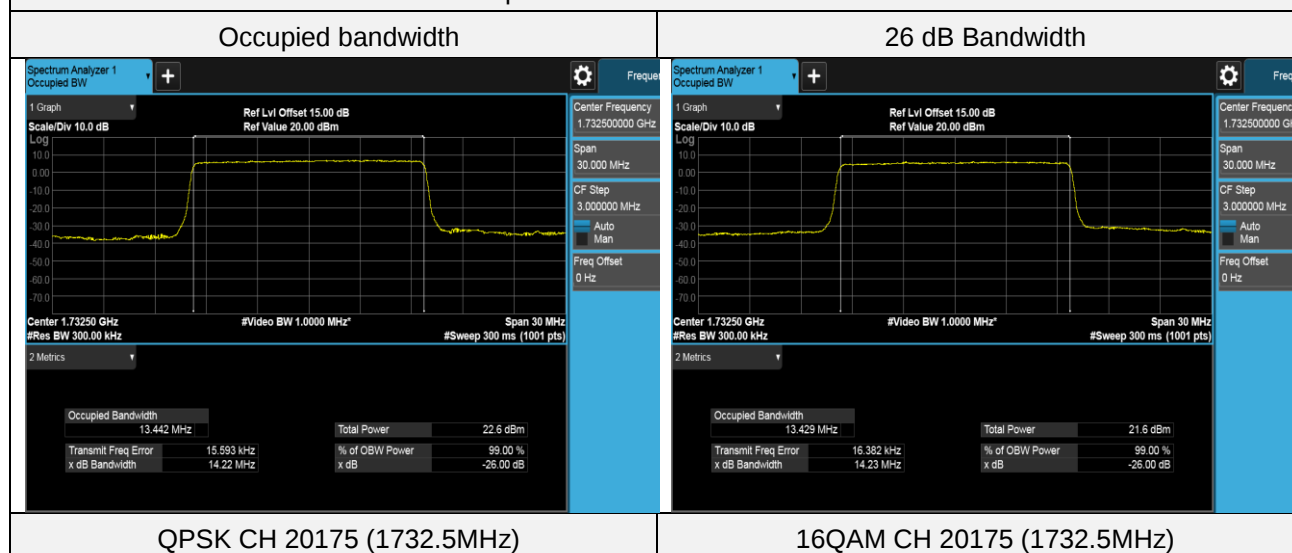
## Spectrum Plot of Worst Value



# LTE Band 4 (Channel Bandwidth 15MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 20025   | 1717.5          | 13.4227                  | 14.216                |
| QPSK           | 20175   | 1732.5          | 13.4417                  | 14.224                |
| QPSK           | 20325   | 1747.5          | 13.4156                  | 14.216                |
| 16QAM          | 20025   | 1717.5          | 13.4162                  | 14.206                |
| 16QAM          | 20175   | 1732.5          | 13.4286                  | 14.225                |
| 16QAM          | 20325   | 1747.5          | 13.4022                  | 14.224                |

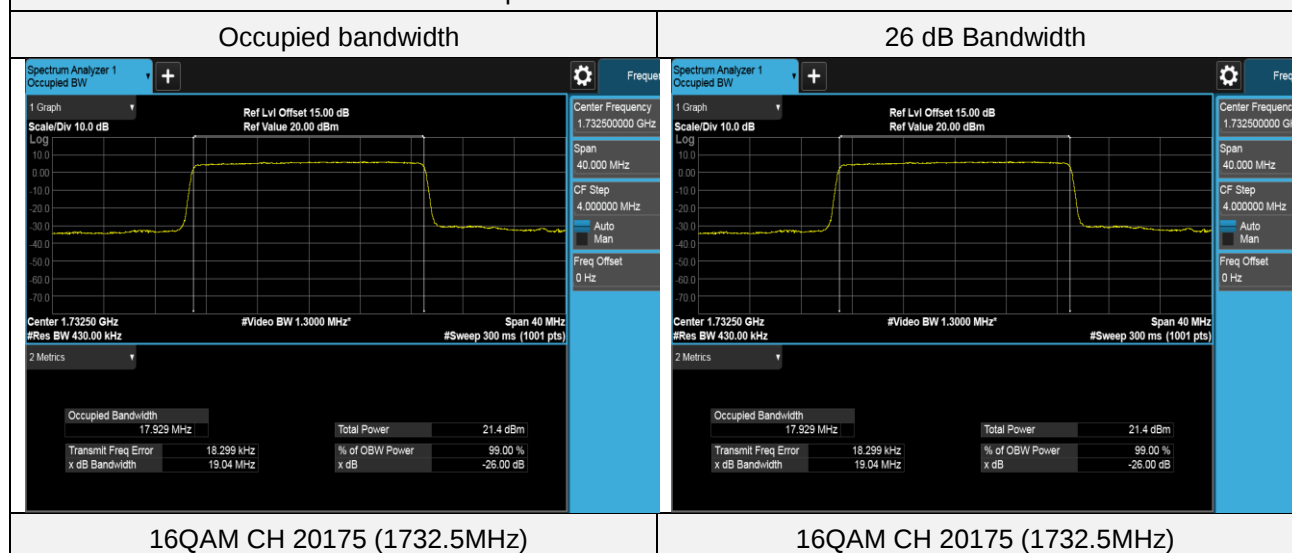
## Spectrum Plot of Worst Value



# LTE Band 4 (Channel Bandwidth 20MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 20050   | 1720            | 17.8903                  | 19.009                |
| QPSK           | 20175   | 1732.5          | 17.9102                  | 19.019                |
| QPSK           | 20300   | 1745            | 17.8598                  | 18.999                |
| 16QAM          | 20050   | 1720            | 17.9052                  | 19.007                |
| 16QAM          | 20175   | 1732.5          | 17.9287                  | 19.042                |
| 16QAM          | 20300   | 1745            | 17.8742                  | 18.990                |

## Spectrum Plot of Worst Value

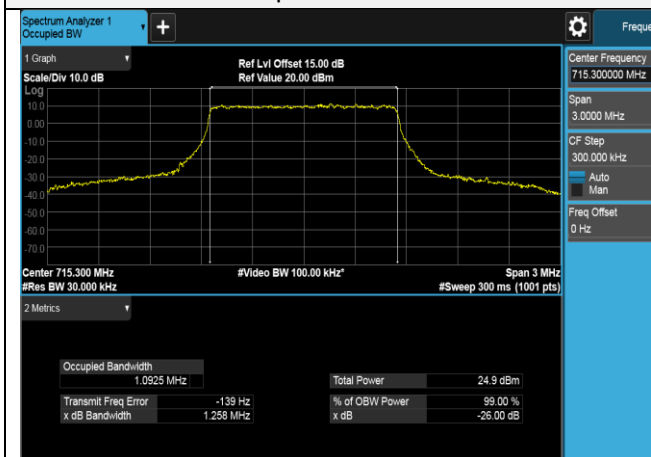


### LTE Band 12 (Channel Bandwidth 1.4MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23017   | 699.7           | 1.0889                   | 1.262                 |
| QPSK           | 23095   | 707.5           | 1.0914                   | 1.261                 |
| QPSK           | 23173   | 715.3           | 1.0925                   | 1.258                 |
| 16QAM          | 23017   | 699.7           | 1.0896                   | 1.253                 |
| 16QAM          | 23095   | 707.5           | 1.0890                   | 1.247                 |
| 16QAM          | 23173   | 715.3           | 1.0892                   | 1.252                 |

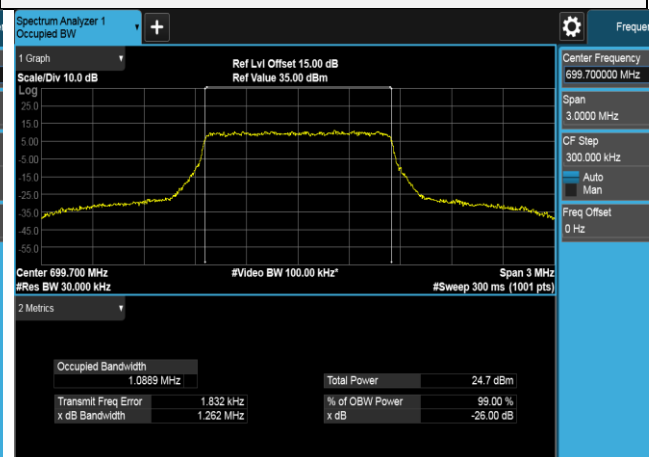
### Spectrum Plot of Worst Value

#### Occupied bandwidth



QPSK CH 23173 (715.3MHz)

#### 26 dB Bandwidth

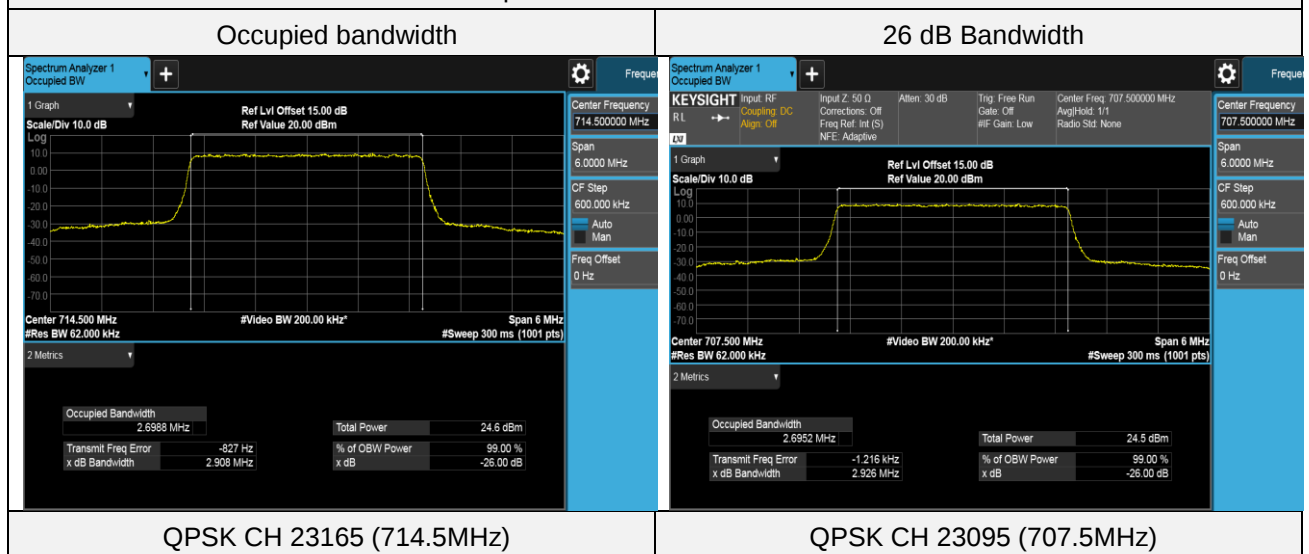


QPSK CH 23017 (699.7MHz)

### LTE Band 12 (Channel Bandwidth 3MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23025   | 700.5           | 2.6974                   | 2.911                 |
| QPSK           | 23095   | 707.5           | 2.6952                   | 2.926                 |
| QPSK           | 23165   | 714.5           | 2.6988                   | 2.908                 |
| 16QAM          | 23025   | 700.5           | 2.6977                   | 2.918                 |
| 16QAM          | 23095   | 707.5           | 2.6975                   | 2.916                 |
| 16QAM          | 23165   | 714.5           | 2.6979                   | 2.918                 |

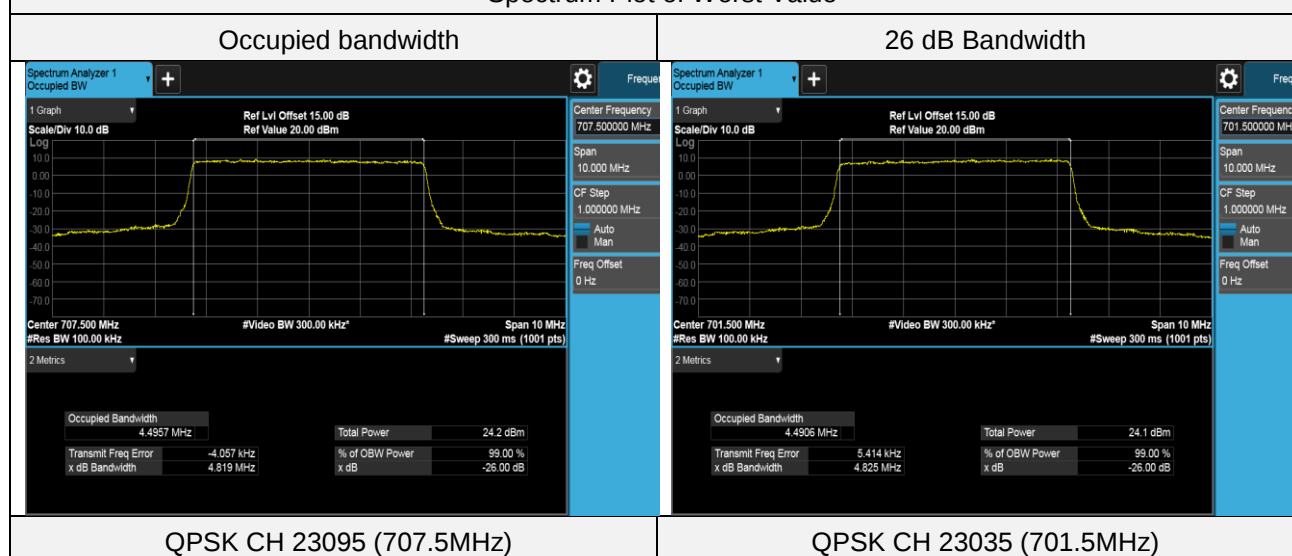
### Spectrum Plot of Worst Value



# LTE Band 12 (Channel Bandwidth 5MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23035   | 701.5           | 4.4906                   | 4.825                 |
| QPSK           | 23095   | 707.5           | 4.4957                   | 4.819                 |
| QPSK           | 23155   | 713.5           | 4.4907                   | 4.820                 |
| 16QAM          | 23035   | 701.5           | 4.4876                   | 4.808                 |
| 16QAM          | 23095   | 707.5           | 4.4900                   | 4.822                 |
| 16QAM          | 23155   | 713.5           | 4.4909                   | 4.806                 |

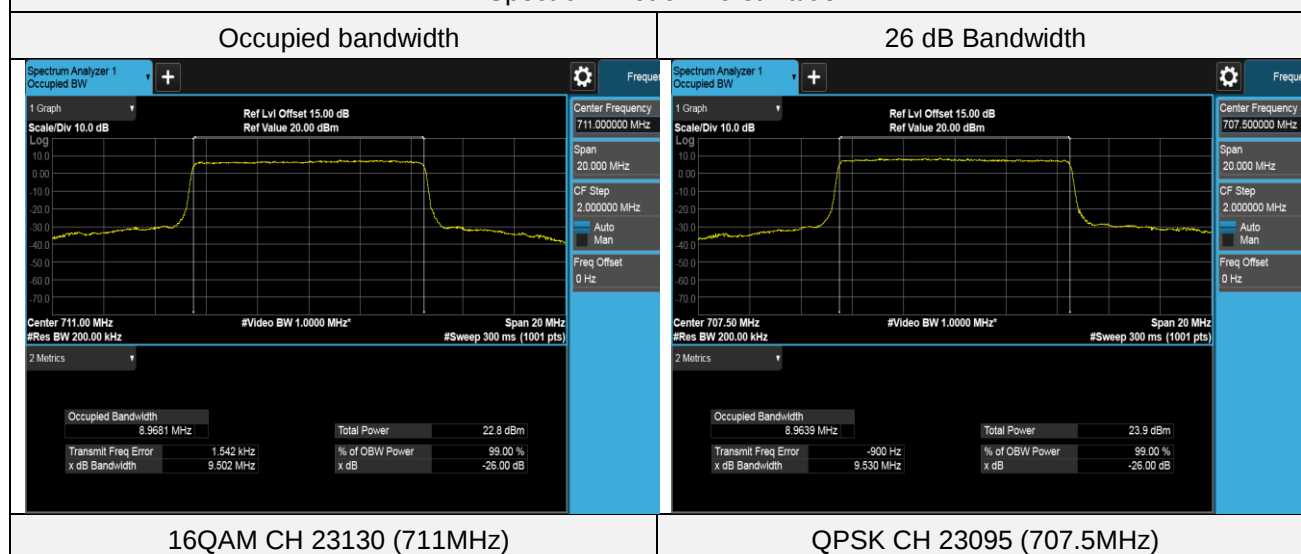
## Spectrum Plot of Worst Value



# LTE Band 12 (Channel Bandwidth 10MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23060   | 704             | 8.9352                   | 9.502                 |
| QPSK           | 23095   | 707.5           | 8.9639                   | 9.530                 |
| QPSK           | 23130   | 711             | 8.9655                   | 9.515                 |
| 16QAM          | 23060   | 704             | 8.9361                   | 9.500                 |
| 16QAM          | 23095   | 707.5           | 8.9595                   | 9.512                 |
| 16QAM          | 23130   | 711             | 8.9681                   | 9.502                 |

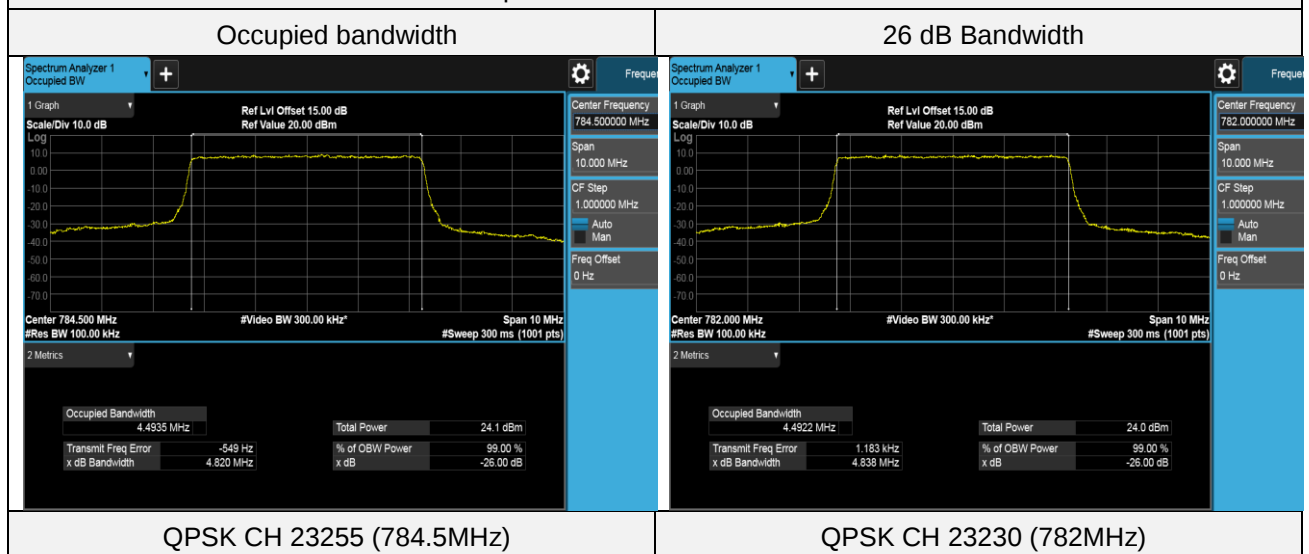
## Spectrum Plot of Worst Value



### LTE Band 13 (Channel Bandwidth 5MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23205   | 779.5           | 4.4875                   | 4.816                 |
| QPSK           | 23230   | 782             | 4.4922                   | 4.838                 |
| QPSK           | 23255   | 784.5           | 4.4935                   | 4.820                 |
| 16QAM          | 23205   | 779.5           | 4.4879                   | 4.814                 |
| 16QAM          | 23230   | 782             | 4.4903                   | 4.819                 |
| 16QAM          | 23255   | 784.5           | 4.4880                   | 4.804                 |

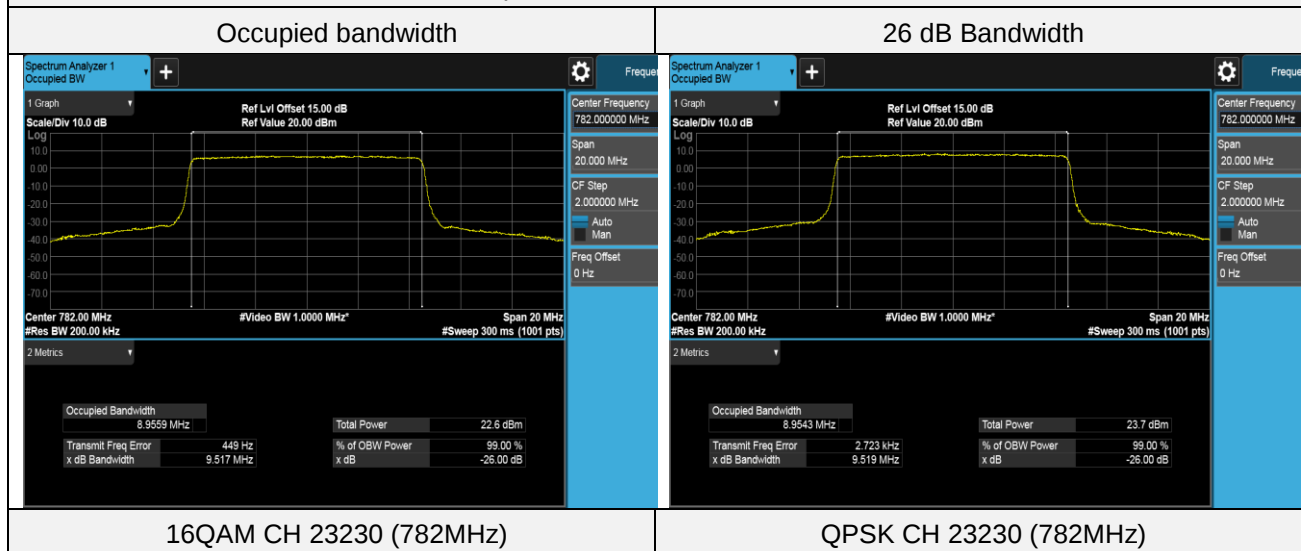
### Spectrum Plot of Worst Value



### LTE Band 13 (Channel Bandwidth 10MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 23230   | 782             | 8.9543                   | 9.519                 |
| 16QAM          | 23230   | 782             | 8.9559                   | 9.517                 |

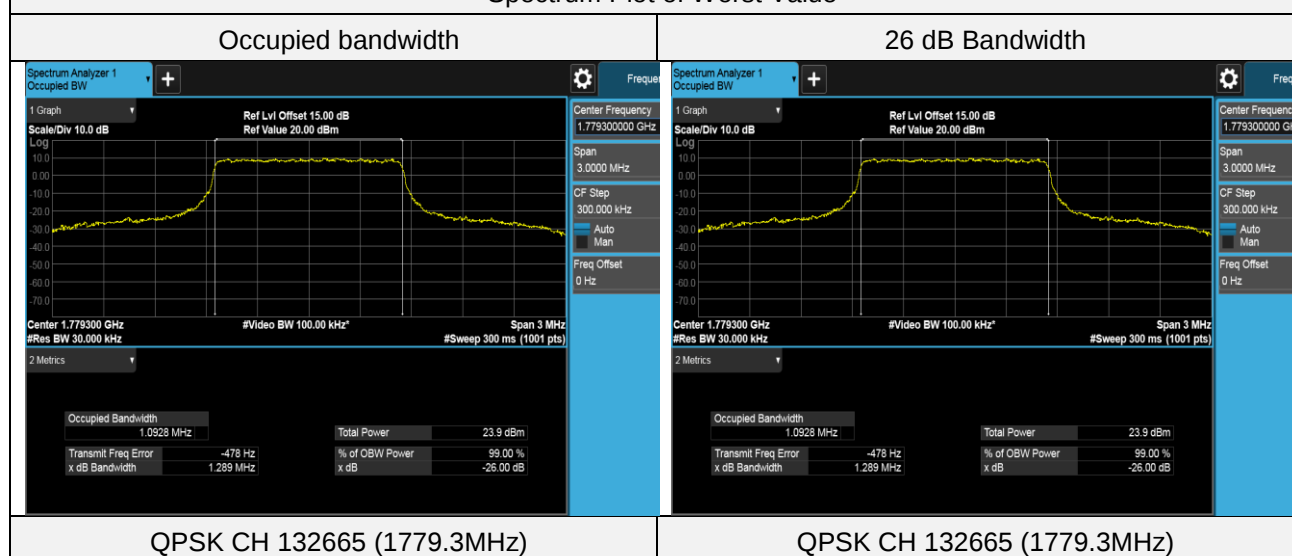
### Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 1.4MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 131979  | 1710.7          | 1.0900                   | 1.263                 |
| QPSK           | 132322  | 1745            | 1.0914                   | 1.259                 |
| QPSK           | 132665  | 1779.3          | 1.0928                   | 1.289                 |
| 16QAM          | 131979  | 1710.7          | 1.0892                   | 1.253                 |
| 16QAM          | 132322  | 1745            | 1.0881                   | 1.252                 |
| 16QAM          | 132665  | 1779.3          | 1.0898                   | 1.254                 |

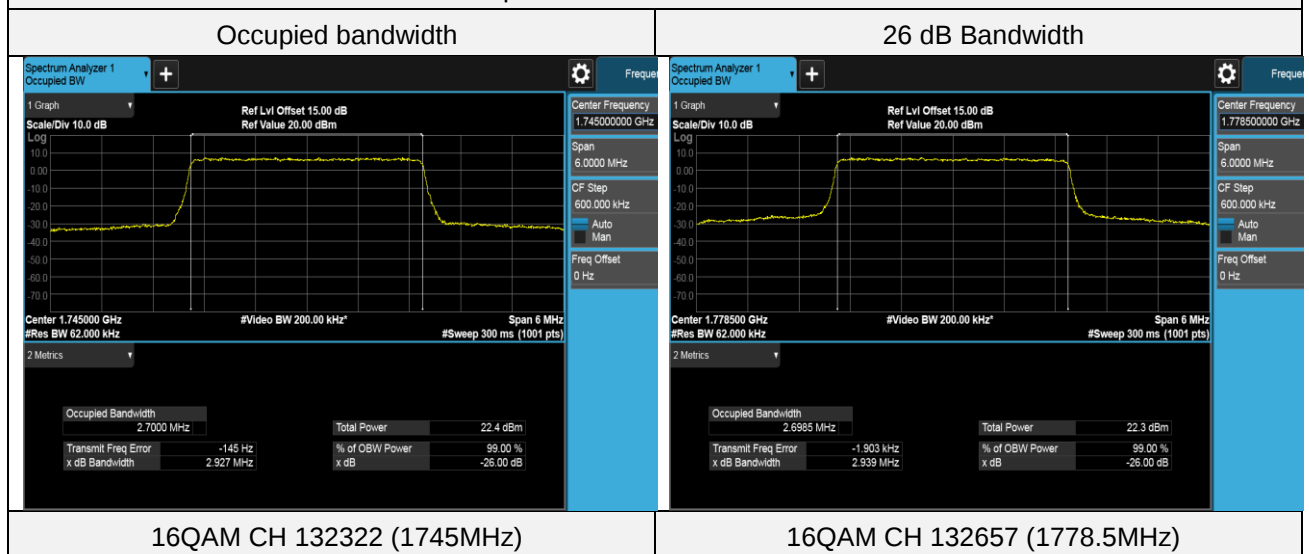
## Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 3MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 131987  | 1711.5          | 2.6986                   | 2.926                 |
| QPSK           | 132322  | 1745            | 2.6983                   | 2.898                 |
| QPSK           | 132657  | 1778.5          | 2.6987                   | 2.935                 |
| 16QAM          | 131987  | 1711.5          | 2.6982                   | 2.931                 |
| 16QAM          | 132322  | 1745            | 2.7000                   | 2.927                 |
| 16QAM          | 132657  | 1778.5          | 2.6985                   | 2.939                 |

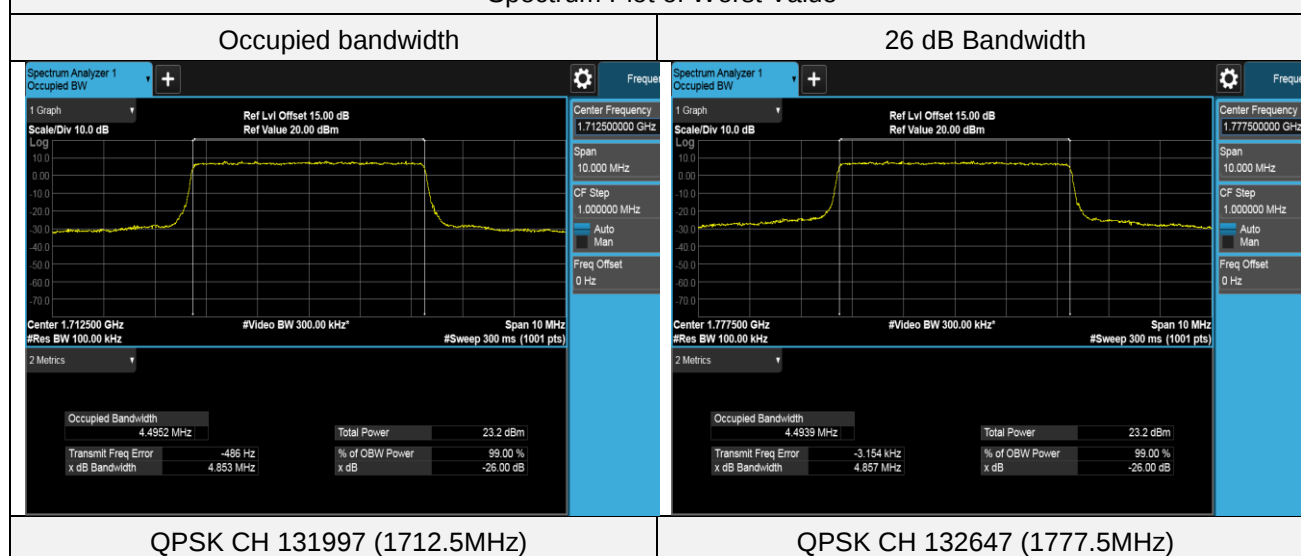
## Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 5MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 131997  | 1712.5          | 4.4952                   | 4.853                 |
| QPSK           | 132322  | 1745            | 4.4941                   | 4.830                 |
| QPSK           | 132647  | 1777.5          | 4.4939                   | 4.857                 |
| 16QAM          | 131997  | 1712.5          | 4.4914                   | 4.838                 |
| 16QAM          | 132322  | 1745            | 4.4923                   | 4.819                 |
| 16QAM          | 132647  | 1777.5          | 4.4916                   | 4.848                 |

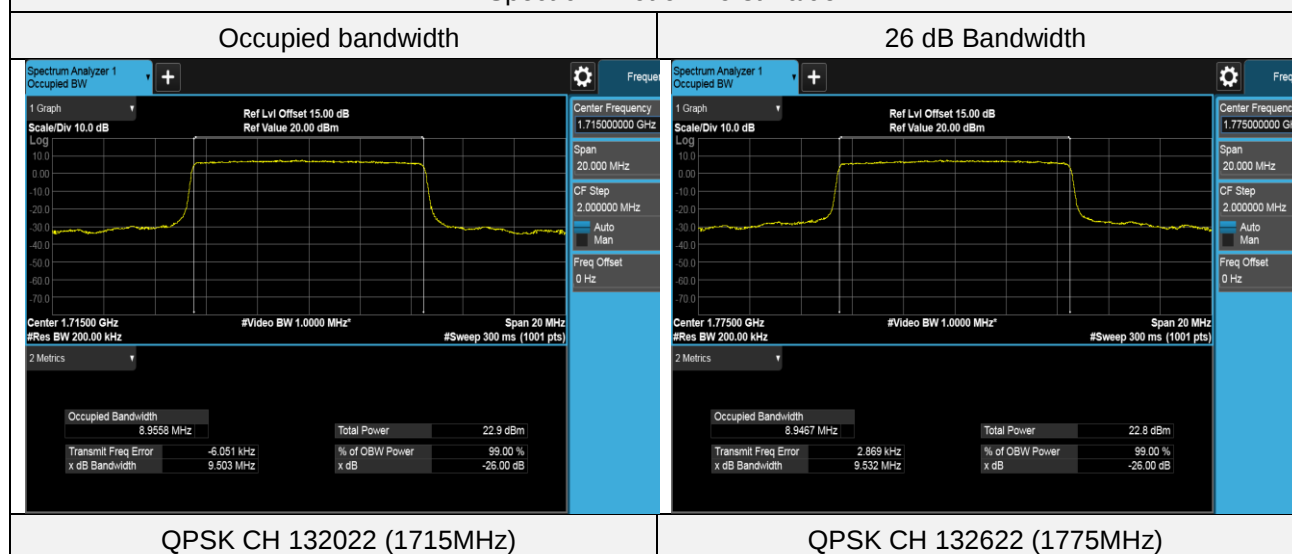
## Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 10MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 132022  | 1715            | 8.9558                   | 9.503                 |
| QPSK           | 132322  | 1745            | 8.9508                   | 9.513                 |
| QPSK           | 132622  | 1775            | 8.9467                   | 9.532                 |
| 16QAM          | 132022  | 1715            | 8.9491                   | 9.515                 |
| 16QAM          | 132322  | 1745            | 8.9517                   | 9.511                 |
| 16QAM          | 132622  | 1775            | 8.9499                   | 9.506                 |

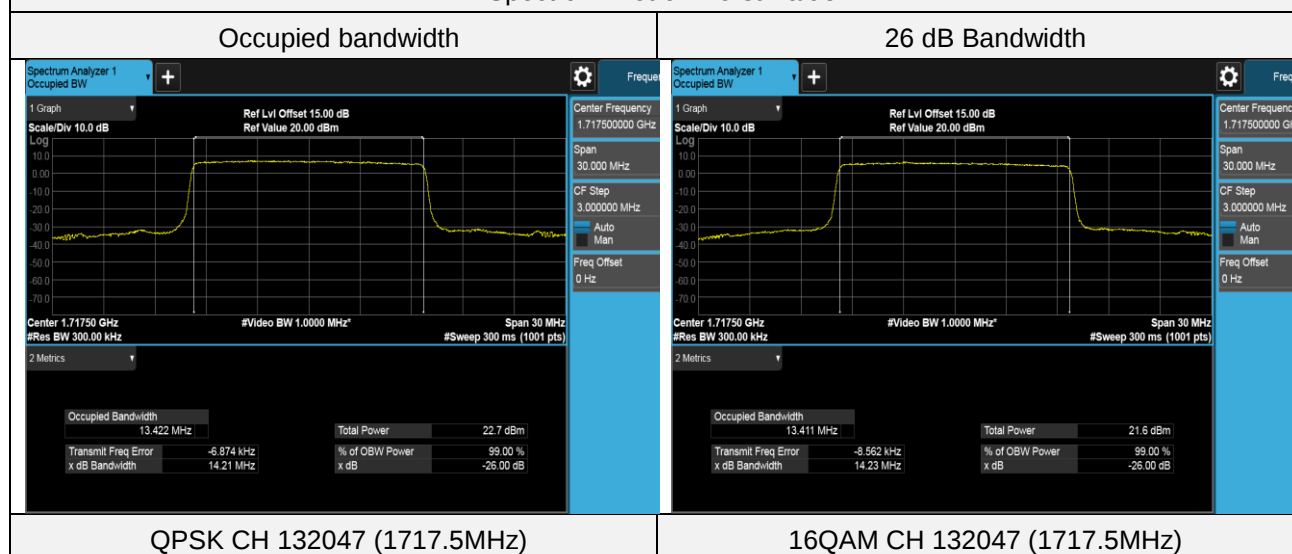
## Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 15MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 132047  | 1717.5          | 13.4218                  | 14.214                |
| QPSK           | 132322  | 1745            | 13.4175                  | 14.225                |
| QPSK           | 132597  | 1772.5          | 13.4088                  | 14.224                |
| 16QAM          | 132047  | 1717.5          | 13.4107                  | 14.228                |
| 16QAM          | 132322  | 1745            | 13.4051                  | 14.221                |
| 16QAM          | 132597  | 1772.5          | 13.4051                  | 14.215                |

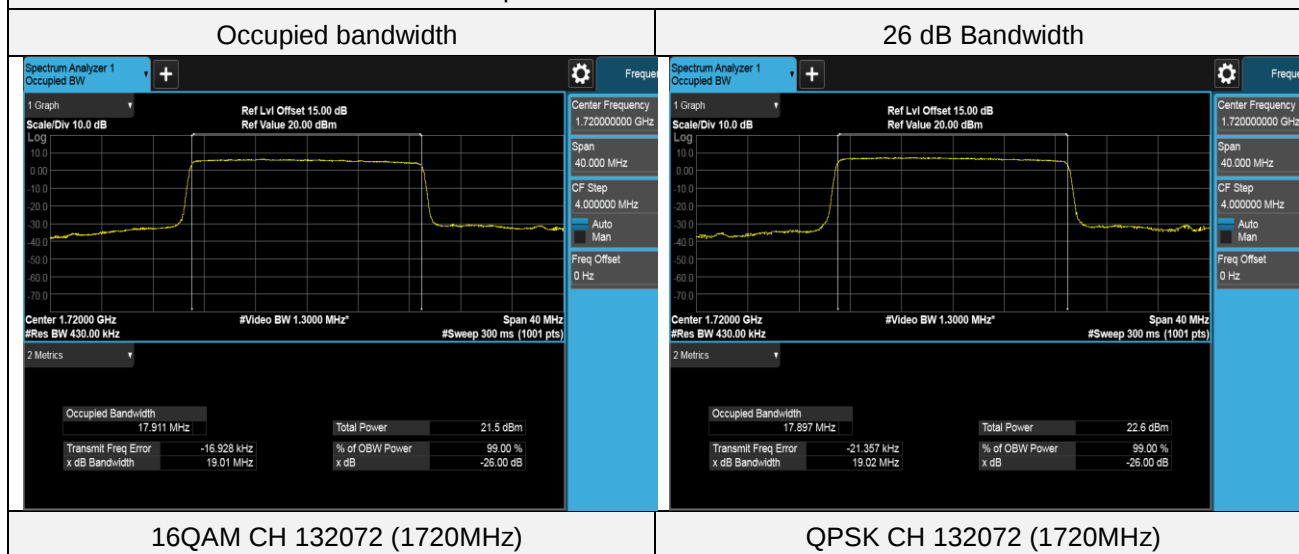
## Spectrum Plot of Worst Value



# LTE Band 66 (Channel Bandwidth 20MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 132072  | 1720            | 17.8969                  | 19.023                |
| QPSK           | 132322  | 1745            | 17.8621                  | 18.995                |
| QPSK           | 132572  | 1770            | 17.8879                  | 19.010                |
| 16QAM          | 132072  | 1720            | 17.9110                  | 19.006                |
| 16QAM          | 132322  | 1745            | 17.8814                  | 18.997                |
| 16QAM          | 132572  | 1770            | 17.8970                  | 19.010                |

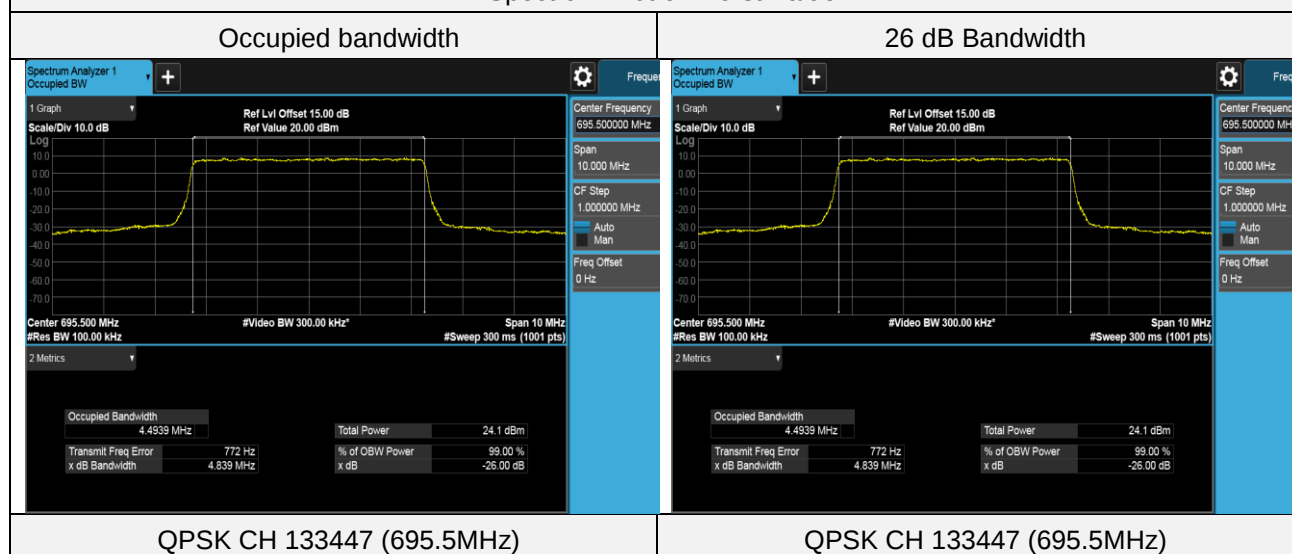
## Spectrum Plot of Worst Value



# LTE Band 71 (Channel Bandwidth 5MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 133147  | 665.5           | 4.4869                   | 4.819                 |
| QPSK           | 133297  | 680.5           | 4.4930                   | 4.816                 |
| QPSK           | 133447  | 695.5           | 4.4939                   | 4.839                 |
| 16QAM          | 133147  | 665.5           | 4.4895                   | 4.810                 |
| 16QAM          | 133297  | 680.5           | 4.4881                   | 4.811                 |
| 16QAM          | 133447  | 695.5           | 4.4892                   | 4.802                 |

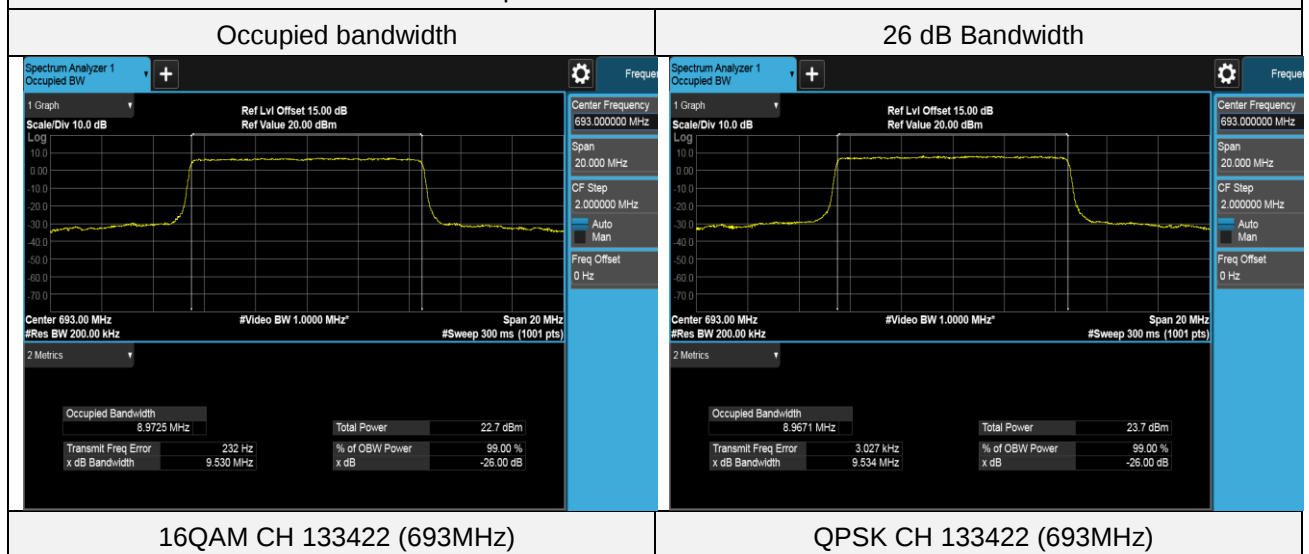
## Spectrum Plot of Worst Value



# LTE Band 71 (Channel Bandwidth 10MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 133172  | 668             | 8.9314                   | 9.505                 |
| QPSK           | 133297  | 680.5           | 8.9405                   | 9.500                 |
| QPSK           | 133422  | 693             | 8.9671                   | 9.534                 |
| 16QAM          | 133172  | 668             | 8.9355                   | 9.487                 |
| 16QAM          | 133297  | 680.5           | 8.9354                   | 9.497                 |
| 16QAM          | 133422  | 693             | 8.9725                   | 9.530                 |

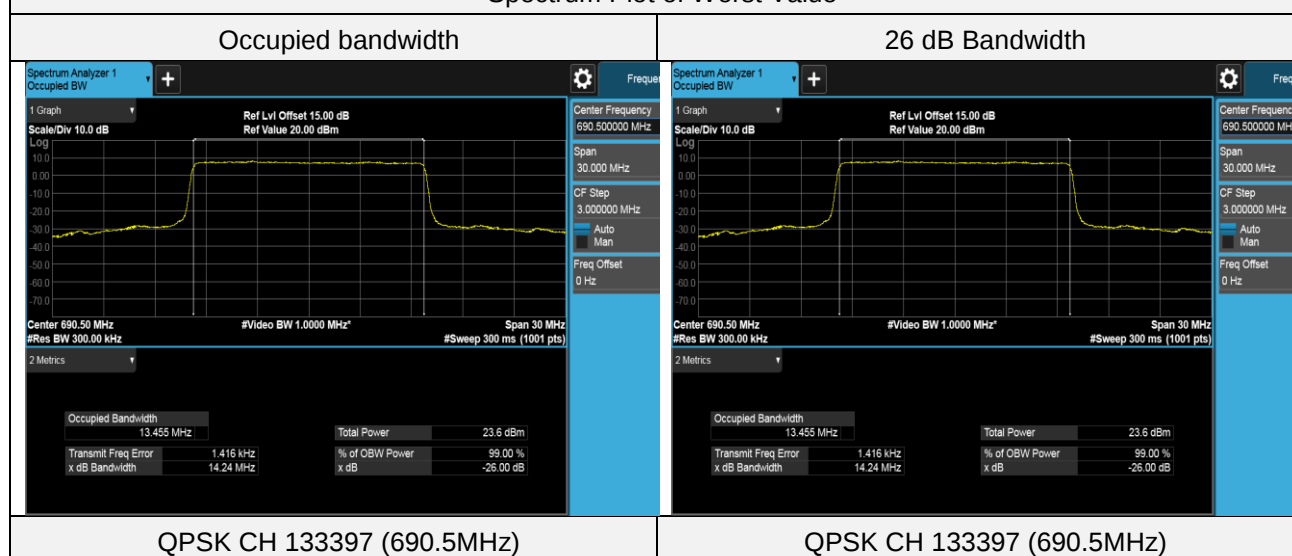
## Spectrum Plot of Worst Value



# LTE Band 71 (Channel Bandwidth 15MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 133197  | 670.5           | 13.4179                  | 14.215                |
| QPSK           | 133297  | 680.5           | 13.4109                  | 14.221                |
| QPSK           | 133397  | 690.5           | 13.4553                  | 14.237                |
| 16QAM          | 133197  | 670.5           | 13.4090                  | 14.212                |
| 16QAM          | 133297  | 680.5           | 13.3977                  | 14.223                |
| 16QAM          | 133397  | 690.5           | 13.4396                  | 14.228                |

## Spectrum Plot of Worst Value



# LTE Band 71 (Channel Bandwidth 20MHz)

| Test Condition | Channel | Frequency (MHz) | Occupied bandwidth (MHz) | 26 dB Bandwidth (MHz) |
|----------------|---------|-----------------|--------------------------|-----------------------|
| QPSK           | 133222  | 673             | 17.8737                  | 19.012                |
| QPSK           | 133297  | 680.5           | 17.8581                  | 18.970                |
| QPSK           | 133372  | 688             | 17.8862                  | 18.999                |
| 16QAM          | 133222  | 673             | 17.8891                  | 19.018                |
| 16QAM          | 133297  | 680.5           | 17.8635                  | 18.968                |
| 16QAM          | 133372  | 688             | 17.8908                  | 19.004                |

## Spectrum Plot of Worst Value

