

## FCC Test Report

### (PART 27)

**Report No.:** RFBGSN-WTW-P20080589-2

**FCC ID:** NKS-PA1

**Test Model:** Trimble Gateway-PA1

**Received Date:** Aug. 29, 2020

**Test Date:** Sep. 23, 2020 ~ Oct. 17, 2020

**Issued Date:** Oct. 28, 2020

**Applicant:** PeopleNet Communications Corporation

**Address:** 4400 Baker Road, Minnetonka Minnesota 55343-8684 United States

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

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

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



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### Release Control Record

| Issue No.              | Description      | Date Issued   |
|------------------------|------------------|---------------|
| RFBGSN-WTW-P20080589-2 | Original Release | Oct. 28, 2020 |

## 1 Certificate of Conformity

**Product:** Trimble Gateway NA

**Brand:** Trimble

**Test Model:** Trimble Gateway-PA1

**Sample Status:** Engineering Sample

**Applicant:** PeopleNet Communications Corporation

**Test Date:** Sep. 23, 2020 ~ Oct. 17, 2020

**Standards:** FCC Part 27, Subpart C, H, 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:** Oct. 28, 2020  
Vera Huang / Specialist

**Approved by :** Dylan Chiou, **Date:** Oct. 28, 2020  
Dylan Chiou / Senior 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)(4)                          | Equivalent Isotropic 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                                         | Occupied Bandwidth                  | Pass   | Meet the requirement of limit.                                                        |
| 27.50(d)(5)                                    | Peak to Average Ratio               | Pass   | Meet the requirement of limit.                                                        |
| 27.53(h)                                       | Band Edge Measurements              | 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 -23.85 dB at 5257.80 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 4) |                                     |        |                                                                                       |
|------------------------------------------------|-------------------------------------|--------|---------------------------------------------------------------------------------------|
| FCC Clause                                     | Test Item                           | Result | Remarks                                                                               |
| 2.1046<br>27.50(d)(4)                          | Equivalent Isotropic 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                                         | Occupied Bandwidth                  | Pass   | Meet the requirement of limit.                                                        |
| 27.50(d)(5)                                    | Peak to Average Ratio               | Pass   | Meet the requirement of limit.                                                        |
| 27.53(h)                                       | Band Edge Measurements              | 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 -17.54 dB at 5160.00 MHz. |

| Applied Standard: FCC Part 27 & Part 2 (LTE 12) |                              |        |                                                                                     |
|-------------------------------------------------|------------------------------|--------|-------------------------------------------------------------------------------------|
| FCC Clause                                      | Test Item                    | Result | Remarks                                                                             |
| 2.1046<br>27.50(c)(10)                          | 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                                          | Occupied Bandwidth           | Pass   | Meet the requirement of limit.                                                      |
| ---                                             | Peak to Average Ratio        | Pass   | Meet the requirement of limit.                                                      |
| 27.53(g)                                        | Band Edge Measurements       | 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 -25.48 dB at 43.58 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 (k=2) (±) |
|--------------------------------|--------------------|--------------------------------|
| Radiated Emissions up to 1 GHz | 9 kHz ~ 30 MHz     | 3.04 dB                        |
|                                | 30 MHz ~ 200 MHz   | 2.93 dB                        |
|                                | 200 MHz ~ 1000 MHz | 2.95 dB                        |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz     | 2.26 dB                        |
|                                | 18 GHz ~ 40 GHz    | 1.94 dB                        |

## 2.2 Test Site and Instruments

| Description & Manufacturer                     | Model No.         | Serial No.                | Date of Calibration | Due Date of Calibration |
|------------------------------------------------|-------------------|---------------------------|---------------------|-------------------------|
| Test Receiver<br>Agilent                       | N9038A            | MY51210203                | Mar. 18, 2020       | Mar. 17, 2021           |
| Spectrum Analyzer<br>Agilent                   | N9010A            | MY52220314                | Dec. 12, 2019       | Dec. 11, 2020           |
| Spectrum Analyzer<br>ROHDE & SCHWARZ           | FSU43             | 101261                    | Apr. 16, 2020       | Apr. 15, 2021           |
| HORN Antenna<br>SCHWARZBECK                    | BBHA 9120D        | 9120D-969                 | Nov. 24, 2019       | Nov. 23, 2020           |
| BILOG Antenna<br>SCHWARZBECK                   | VULB 9168         | 9168-472                  | Nov. 08, 2019       | Nov. 07, 2020           |
| Fixed Attenuator<br>WOKEN                      | MDCS18N-10        | MDCS18N-10-01             | Apr. 14, 2020       | Apr. 13, 2021           |
| BILOG Antenna<br>SCHWARZBECK                   | VULB 9168         | 9168-160                  | Nov. 07, 2019       | Nov. 06, 2020           |
| HORN Antenna<br>SCHWARZBECK                    | 9120D             | 9120D-1169                | Nov. 24, 2019       | Nov. 23, 2020           |
| MXG Vector signal generator<br>Agilent         | N5182B            | MY53050430                | Oct. 25, 2019       | Oct. 24, 2020           |
| Preamplifier<br>EMCI                           | EMC001340         | 980201                    | Oct. 14, 2019       | Oct. 13, 2020           |
|                                                |                   |                           | Oct. 21, 2020       | Oct. 20, 2021           |
| Preamplifier<br>EMCI                           | EMC 012645        | 980115                    | Oct. 08, 2019       | Oct. 07, 2020           |
|                                                |                   |                           | Oct. 07, 2020       | Oct. 06, 2021           |
| Preamplifier<br>EMCI                           | EMC 330H          | 980112                    | Oct. 08, 2019       | Oct. 07, 2020           |
|                                                |                   |                           | Oct. 07, 2020       | Oct. 06, 2021           |
| RF Coaxial Cable<br>EMCI                       | EMC104-SM-SM-8000 | 180409                    | Jan. 18, 2020       | Jan. 17, 2021           |
| RF Coaxial Cable<br>HUBER+SUHNNER              | SUCOFLEX 104      | EMC104-SM-SM-1000(140807) | Oct. 08, 2019       | Oct. 07, 2020           |
|                                                |                   |                           | Oct. 07, 2020       | Oct. 06, 2021           |
| RF Coaxial Cable<br>WOKEN                      | 8D-FB             | Cable-Ch10-01             | Oct. 08, 2019       | Oct. 07, 2020           |
|                                                |                   |                           | Oct. 07, 2020       | Oct. 06, 2021           |
| Boresight Antenna Fixture                      | FBA-01            | FBA-SIP01                 | NA                  | NA                      |
| Software<br>BV ADT                             | E3<br>6.120103    | NA                        | NA                  | NA                      |
| Antenna Tower<br>MF                            | MFA-440H          | NA                        | NA                  | NA                      |
| Turn Table<br>MF                               | MFT-201SS         | NA                        | NA                  | NA                      |
| Antenna Tower & Turn Table<br>Controller<br>MF | MF-7802           | NA                        | NA                  | NA                      |
| Radio Communication<br>Analyzer<br>Anritsu     | MT8821C           | 6201462755                | Feb. 13, 2020       | Feb. 12, 2021           |
| Radio Communication<br>Analyzer<br>Anritsu     | MT8820C           | 6201300640                | Aug. 19, 2019       | Aug. 18, 2021           |
| Temperature & Humidity<br>Chamber              | GTH-120-40-CP-AR  | MAA1306-019               | Sep. 09, 2020       | Sep. 08, 2021           |
| DC Power Supply<br>Topward                     | 33010D            | 807748                    | NA                  | NA                      |

- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.



### 3 General Information

#### 3.1 General Description of EUT

|                                |                                          |                     |
|--------------------------------|------------------------------------------|---------------------|
| <b>Product</b>                 | Trimble Gateway NA                       |                     |
| <b>Brand</b>                   | Trimble                                  |                     |
| <b>Test Model</b>              | Trimble Gateway-PA1                      |                     |
| <b>Status of EUT</b>           | Engineering Sample                       |                     |
| <b>Power Supply Rating</b>     | 12 Vdc (adapter)                         |                     |
| <b>Modulation Type</b>         | WCDMA                                    | QPSK                |
|                                | LTE                                      | QPSK, 16QAM         |
| <b>Frequency Range</b>         | WCDMA                                    | 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   |
| <b>Emission Designator</b>     | WCDMA                                    | 4M16F9W             |
|                                | LTE Band 4 (Channel Bandwidth: 1.4 MHz)  | 1M09D7W             |
|                                | LTE Band 4 (Channel Bandwidth: 3 MHz)    | 2M71G7D             |
|                                | LTE Band 4 (Channel Bandwidth: 5 MHz)    | 4M50G7D             |
|                                | LTE Band 4 (Channel Bandwidth: 10 MHz)   | 8M96D7W             |
|                                | LTE Band 4 (Channel Bandwidth: 15 MHz)   | 13M4D7W             |
|                                | LTE Band 4 (Channel Bandwidth: 20 MHz)   | 17M9G7D             |
|                                | LTE Band 12 (Channel Bandwidth: 1.4 MHz) | 1M10D7W             |
|                                | LTE Band 12 (Channel Bandwidth: 3 MHz)   | 2M71D7W             |
|                                | LTE Band 12 (Channel Bandwidth: 5 MHz)   | 4M50D7W             |
|                                | LTE Band 12 (Channel Bandwidth: 10 MHz)  | 8M99G7D             |
| <b>Max. ERP Power (Mode A)</b> | LTE Band 12 (Channel Bandwidth: 1.4 MHz) | 90.16 mW            |
|                                | LTE Band 12 (Channel Bandwidth: 3 MHz)   | 97.72 mW            |
|                                | LTE Band 12 (Channel Bandwidth: 5 MHz)   | 102.57 mW           |
|                                | LTE Band 12 (Channel Bandwidth: 10 MHz)  | 104.23 mW           |
| <b>Max. ERP Power (Mode B)</b> | LTE Band 12 (Channel Bandwidth: 1.4 MHz) | 139.00 mW           |
|                                | LTE Band 12 (Channel Bandwidth: 3 MHz)   | 146.89 mW           |
|                                | LTE Band 12 (Channel Bandwidth: 5 MHz)   | 155.24 mW           |
|                                | LTE Band 12 (Channel Bandwidth: 10 MHz)  | 159.59 mW           |

|                                 |                                         |           |
|---------------------------------|-----------------------------------------|-----------|
| <b>Max. EIRP Power (Mode A)</b> | WCDMA                                   | 458.14 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 1.4 MHz) | 399.94 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 3 MHz)   | 412.10 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 5 MHz)   | 419.76 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 10 MHz)  | 443.61 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 15 MHz)  | 451.86 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 20 MHz)  | 465.59 mW |
| <b>Max. EIRP Power (Mode B)</b> | WCDMA                                   | 280.54 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 1.4 MHz) | 246.04 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 3 MHz)   | 248.89 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 5 MHz)   | 252.35 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 10 MHz)  | 267.92 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 15 MHz)  | 276.69 mW |
|                                 | LTE Band 4 (Channel Bandwidth: 20 MHz)  | 283.79 mW |
| <b>Antenna Type</b>             | Refer to Note as below                  |           |
| <b>Accessory Device</b>         | N/A                                     |           |
| <b>Data Cable Supplied</b>      | N/A                                     |           |

Note:

1. The information of module collocated in this EUT is listed as below.

| Product        | Brand   | Model    |
|----------------|---------|----------|
| BT/WLAN Module | msi     | BM25     |
| WWAN Module    | Quectel | EC25-A   |
| AH Module      | silex   | SX-NEWAH |

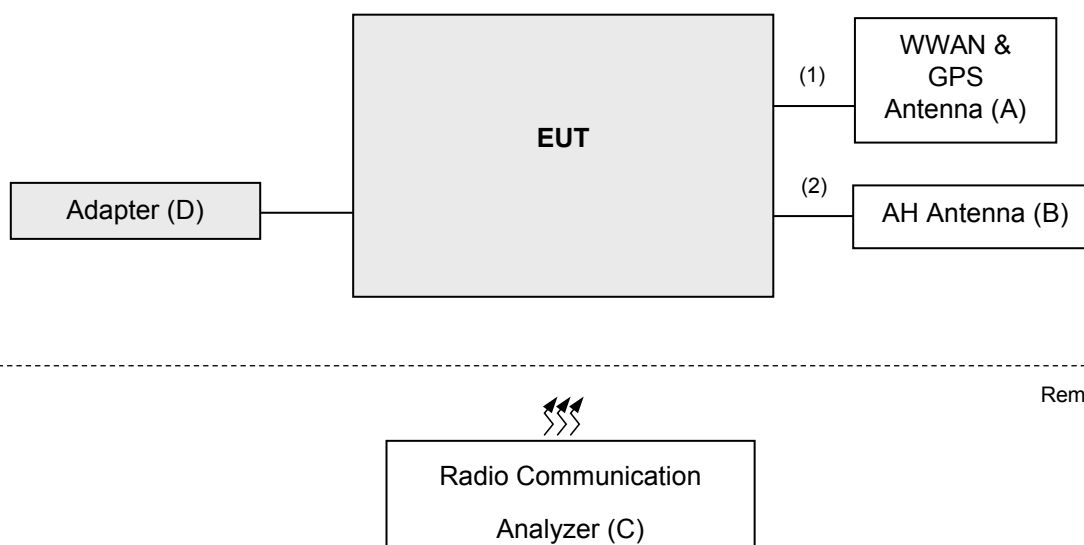
2. The antenna information is listed as below.

| Ant. | Brand   | Model         | Antenna Type                          | Antenna Gain (dBi) |        | Remark                    |
|------|---------|---------------|---------------------------------------|--------------------|--------|---------------------------|
|      |         |               |                                       | WCDMA 4 /<br>LTE 4 | LTE 12 |                           |
| 1    | TAOGLAS | PCS.06.A      | SMD Antenna                           | 3.82               | -0.03  | Internal,<br>Main Antenna |
| 2    | TAOGLAS | PCS.06.B      | SMD Antenna                           | 4.04               | 0.06   | Internal,<br>Aux. Antenna |
| 3    | TAOGLAS | MA240.LBI.001 | Adhesive Mount<br>Combination Antenna | 1.93               | 1.6    | External,<br>Main Antenna |
| 4    | TAOGLAS | MA240.LBI.001 | Adhesive Mount<br>Combination Antenna | 1.2                | 1.2    | External,<br>Aux. Antenna |

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

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  | WWAN & GPS Antenna           | TAOGLAS | MA240.LBI.001  | NA         | NA      | Provided by client                                                                   |
| B  | AH Antenna                   | TAOGLAS | IS.05.B.301111 | NA         | NA      | Provided by client                                                                   |
| C  | Radio Communication Analyzer | ANRITSU | MT8821C        | 6201462755 | ANRITSU | --                                                                                   |
| D  | Adapter                      | TPT     | PMW120300W8    | NA         | NA      | Provided by client<br>AC Input: 100-240V~, 50-60Hz, 1.1A MAX<br>DC Output: 12V, 3.0A |

Note:

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

| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|--------------|------|------------|--------------------|--------------|---------|
| 1. | RF Cable     | 3    | 3          | N                  | 0            | -       |
| 2. | RF Cable     | 1    | 3          | N                  | 0            | -       |

### 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:

| EUT Configure Mode | Description         |
|--------------------|---------------------|
| A                  | EUT + Antenna 1 & 2 |
| B                  | EUT + Antenna 3 & 4 |

| Band        | EUT Configure Mode | ERP / EIRP | Radiated Emission |
|-------------|--------------------|------------|-------------------|
| WCDMA       | A                  | Z-plane    | Z-plane           |
|             | B                  | Z-plane    | Z-plane           |
| LTE Band 4  | A                  | Z-plane    | Z-plane           |
|             | B                  | X-plane    | X-plane           |
| LTE Band 12 | A                  | Z-plane    | Z-plane           |
|             | B                  | Z-plane    | Z-plane           |

#### WCDMA

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel   | Mode  |
|--------------------|----------------------------|-------------------|------------------|-------|
| A, B               | 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 |
| A, B               | Radiated Emission          | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |

Note:

1. This device was tested under all modulations. The worst case of conducted output power was found in WCDMA modulation. Therefore, all test items were performed under WCDMA mode only.
2. For radiated emissions below 1 GHz, select the worst radiated emission channel (above 1GHz) for final testing.

## LTE Band 4

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode                 |
|--------------------|----------------------------|-------------------|---------------------|-------------------|-------------|----------------------|
| A, B               | EIRP                       | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |
| -                  | Modulation Characteristics | 20050 to 20300    | 20175               | 20 MHz            | QPSK, 16QAM | 100 RB / 0 RB Offset |
| -                  | Frequency Stability        | 19957 to 20393    | 19957, 20393        | 1.4 MHz           | QPSK        | 6 RB / 0 RB Offset   |
|                    |                            | 19965 to 20385    | 19965, 20385        | 3 MHz             | QPSK        | 15 RB / 0 RB Offset  |
|                    |                            | 19975 to 20375    | 19975, 20375        | 5 MHz             | QPSK        | 25 RB / 0 RB Offset  |
|                    |                            | 20000 to 20350    | 20000, 20350        | 10 MHz            | QPSK        | 50 RB / 0 RB Offset  |
|                    |                            | 20025 to 20325    | 20025, 20325        | 15 MHz            | QPSK        | 75 RB / 0 RB Offset  |
|                    |                            | 20050 to 20300    | 20050, 20300        | 20 MHz            | QPSK        | 100 RB / 0 RB Offset |
| -                  | Occupied Bandwidth         | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK, 16QAM | 6 RB / 0 RB Offset   |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK, 16QAM | 15 RB / 0 RB Offset  |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK, 16QAM | 25 RB / 0 RB Offset  |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK, 16QAM | 50 RB / 0 RB Offset  |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK, 16QAM | 75 RB / 0 RB Offset  |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK, 16QAM | 100 RB / 0 RB Offset |
| -                  | Peak to Average Ratio      | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 19965 to 20385    | 19965, 20175, 20385 | 3 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20000 to 20350    | 20000, 20175, 20350 | 10 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |
|                    |                            | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset   |

| EUT Configure Mode | Test Item         | Available Channel | Tested Channel      | Channel Bandwidth | Modulation | Mode                |
|--------------------|-------------------|-------------------|---------------------|-------------------|------------|---------------------|
| -                  | Band Edge         | 19957 to 20393    | 19957               | 1.4 MHz           | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 20393               | 1.4 MHz           | QPSK       | 6 RB / 0 RB Offset  |
|                    |                   | 19965 to 20385    | 19965               | 3 MHz             | QPSK       | 1 RB / 5 RB Offset  |
|                    |                   |                   | 20385               | 3 MHz             | QPSK       | 6 RB / 0 RB Offset  |
|                    |                   | 19975 to 20375    | 19975               | 5 MHz             | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 20375               | 5 MHz             | QPSK       | 15 RB / 0 RB Offset |
|                    |                   | 20000 to 20350    | 20000               | 10 MHz            | QPSK       | 1 RB / 14 RB Offset |
|                    |                   |                   | 20350               | 10 MHz            | QPSK       | 15 RB / 0 RB Offset |
|                    |                   | 20025 to 20325    | 20025               | 15 MHz            | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 20325               | 15 MHz            | QPSK       | 25 RB / 0 RB Offset |
|                    |                   | 20050 to 20300    | 20050               | 20 MHz            | QPSK       | 1 RB / 24 RB Offset |
|                    |                   |                   | 20300               | 20 MHz            | QPSK       | 25 RB / 0 RB Offset |
|                    |                   | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 19965, 20175, 20385 | 3 MHz             | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 20000, 20175, 20350 | 10 MHz            | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   | 20025 to 20325    | 20025, 20175, 20325 | 15 MHz            | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   |                   | 20050, 20175, 20300 | 20 MHz            | QPSK       | 1 RB / 0 RB Offset  |
| A, B               | Radiated Emission | 19957 to 20393    | 19957, 20175, 20393 | 1.4 MHz           | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   | 19975 to 20375    | 19975, 20175, 20375 | 5 MHz             | QPSK       | 1 RB / 0 RB Offset  |
|                    |                   | 20050 to 20300    | 20050, 20175, 20300 | 20 MHz            | QPSK       | 1 RB / 0 RB Offset  |

**Note:**

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only EIRP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel (above 1GHz) for final testing

## LTE Band 12

| EUT Configure Mode | Test Item                  | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode                |
|--------------------|----------------------------|-------------------|---------------------|-------------------|-------------|---------------------|
| A, B               | ERP                        | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset  |
| -                  | Modulation Characteristics | 23060 to 23130    | 23095               | 10 MHz            | QPSK, 16QAM | 50 RB / 0 RB Offset |
| -                  | Frequency Stability        | 23017 to 23173    | 23017, 23173        | 1.4 MHz           | QPSK        | 6 RB / 0 RB Offset  |
|                    |                            | 23025 to 23165    | 23025, 23165        | 3 MHz             | QPSK        | 15 RB / 0 RB Offset |
|                    |                            | 23035 to 23155    | 23035, 23155        | 5 MHz             | QPSK        | 25 RB / 0 RB Offset |
|                    |                            | 23060 to 23130    | 23060, 23130        | 10 MHz            | QPSK        | 50 RB / 0 RB Offset |
| -                  | Occupied Bandwidth         | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK, 16QAM | 6 RB / 0 RB Offset  |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK, 16QAM | 15 RB / 0 RB Offset |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK, 16QAM | 25 RB / 0 RB Offset |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK, 16QAM | 50 RB / 0 RB Offset |
| -                  | Peak to Average Ratio      | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23025 to 23165    | 23025, 23095, 23165 | 3 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK, 16QAM | 1 RB / 0 RB Offset  |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK, 16QAM | 1 RB / 0 RB Offset  |
| -                  | Band Edge                  | 23017 to 23173    | 23017               | 1.4 MHz           | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   |                     |                   |             | 6 RB / 0 RB Offset  |
|                    |                            |                   | 23173               | 1.4 MHz           | QPSK        | 1 RB / 5 RB Offset  |
|                    |                            |                   |                     |                   |             | 6 RB / 0 RB Offset  |
|                    |                            | 23025 to 23165    | 23025               | 3 MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   |                     |                   |             | 15 RB / 0 RB Offset |
|                    |                            |                   | 23165               | 3 MHz             | QPSK        | 1 RB / 14 RB Offset |
|                    |                            |                   |                     |                   |             | 15 RB / 0 RB Offset |
|                    |                            | 23035 to 23155    | 23035               | 5 MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   |                     |                   |             | 25 RB / 0 RB Offset |
|                    |                            |                   | 23155               | 5 MHz             | QPSK        | 1 RB / 24 RB Offset |
|                    |                            |                   |                     |                   |             | 25 RB / 0 RB Offset |
| -                  | Conducted Emission         | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   | 23025, 23095, 23165 | 3 MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   | 23035, 23095, 23155 | 5 MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   | 23060, 23095, 23130 | 10 MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            | 23060 to 23130    | 23060               | 10 MHz            | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            |                   | 23130               | 10 MHz            | QPSK        | 50 RB / 0 RB Offset |
| A, B               | Radiated Emission          | 23017 to 23173    | 23017, 23095, 23173 | 1.4 MHz           | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            | 23035 to 23155    | 23035, 23095, 23155 | 5 MHz             | QPSK        | 1 RB / 0 RB Offset  |
|                    |                            | 23060 to 23130    | 23060, 23095, 23130 | 10 MHz            | QPSK        | 1 RB / 0 RB Offset  |

### Note:

1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation. Therefore, only ERP, modulation characteristics, occupied bandwidth and peak to average ratio items had been tested under QPSK, 16QAM mode, the other items were performed under QPSK mode only.
2. For radiated emission above 1 GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5 MHz & highest channel bandwidth for final test.
3. For radiated emissions below 1 GHz, select the worst radiated emission channel (above 1GHz) for final testing.

**Test Condition:**

| Test Item                  | Environmental Conditions | Input Power    | Tested By                |
|----------------------------|--------------------------|----------------|--------------------------|
| ERP / EIRP                 | 26 deg. C, 58 % RH       | 12 Vdc         | Cyril Chen /<br>Tim Chen |
| Modulation Characteristics | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Frequency Stability        | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Occupied Bandwidth         | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Band Edge                  | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Peak to Average Ratio      | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Conducted Emission         | 26 deg. C, 58 % RH       | 12 Vdc         | Getaz Yang               |
| Radiated Emission          | 25 deg. C, 65 % RH       | 120 Vac, 60 Hz | Cyril Chen /<br>Tim Chen |

**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 63.26-2015**

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

**References Test Guidance:**

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

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

**Note:** 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

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.

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

Portable stations (hand-held device) operating 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.

#### 4.1.2 Test Procedures

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

- All measurements were done at low, middle and high operational frequency range. RBW is 5 MHz for WCDMA and 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz for LTE mode, and VBW  $\geq 3 \times$  RBW.
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ . E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15 \text{ dB}$ .

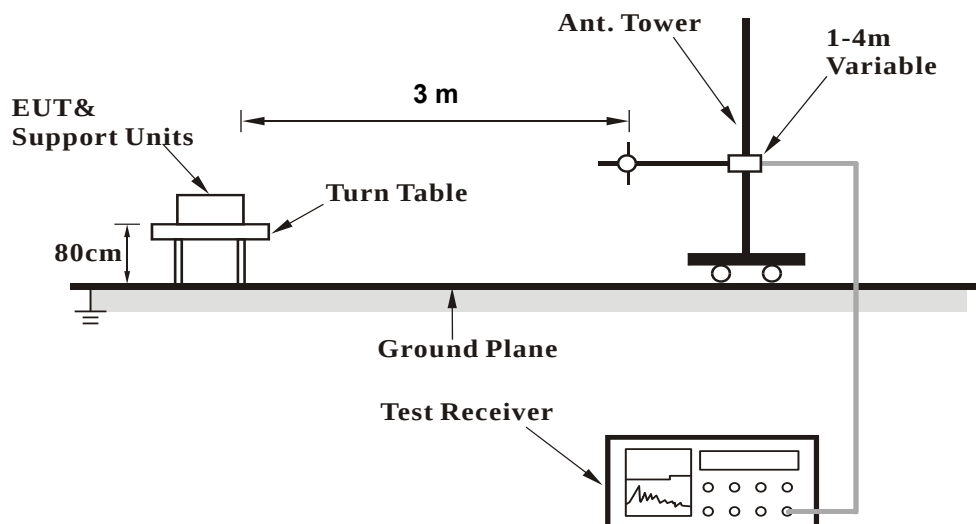
##### **Conducted Power Measurement:**

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

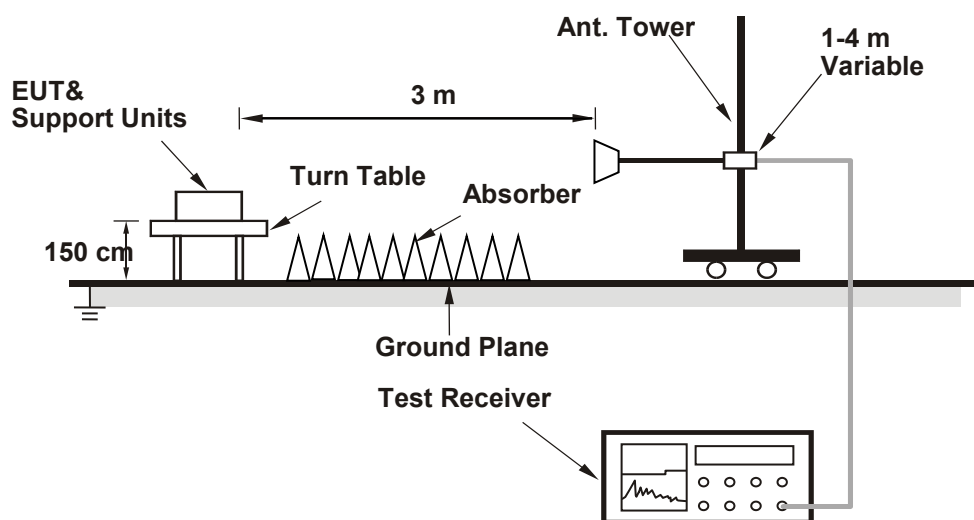
#### 4.1.3 Test Setup

##### EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

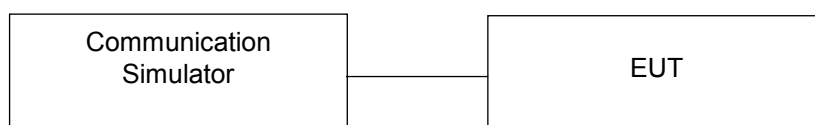


<Radiated Emission above 1 GHz>



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

##### Conducted Power Measurement:



#### 4.1.4 Test Results

##### Conducted Output Power (dBm)

| Band            | WCDMA IV |        |        |
|-----------------|----------|--------|--------|
| Channel         | 1312     | 1413   | 1513   |
| Frequency (MHz) | 1712.4   | 1732.6 | 1752.6 |
| RMC 12.2K       | 22.51    | 22.47  | 22.57  |
| HSDPA Subtest-1 | 21.65    | 21.61  | 21.64  |
| HSDPA Subtest-2 | 21.61    | 21.58  | 21.61  |
| HSDPA Subtest-3 | 21.54    | 21.51  | 21.54  |
| HSDPA Subtest-4 | 21.51    | 21.50  | 21.51  |
| HSUPA Subtest-1 | 21.61    | 21.58  | 21.61  |
| HSUPA Subtest-2 | 19.58    | 19.60  | 19.64  |
| HSUPA Subtest-3 | 20.63    | 20.64  | 20.66  |
| HSUPA Subtest-4 | 19.54    | 19.50  | 19.56  |
| HSUPA Subtest-5 | 21.56    | 21.54  | 21.55  |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 19957 | Mid Ch 20175 | High Ch 20393 |               | Low Ch 19957 | Mid Ch 20175 | High Ch 20393 |               |
|           |         |           | 1710.7 MHz   | 1732.5 MHz   | 1754.3 MHz    |               | 1710.7 MHz   | 1732.5 MHz   | 1754.3 MHz    |               |
| 4 / 1.4M  | 1       | 0         | 21.82        | 21.99        | 21.97         | 0             | 20.87        | 20.99        | 20.82         | 1             |
|           | 1       | 2         | 21.77        | 21.84        | 21.87         | 0             | 20.60        | 20.74        | 20.95         | 1             |
|           | 1       | 5         | 21.47        | 21.82        | 21.75         | 0             | 20.48        | 20.56        | 20.63         | 1             |
|           | 3       | 0         | 21.65        | 21.68        | 21.77         | 0             | 20.50        | 20.60        | 20.82         | 1             |
|           | 3       | 1         | 21.35        | 21.73        | 21.60         | 0             | 20.34        | 20.40        | 20.50         | 1             |
|           | 3       | 3         | 21.52        | 21.59        | 21.65         | 0             | 20.38        | 20.42        | 20.66         | 1             |
|           | 6       | 0         | 20.70        | 20.89        | 20.78         | 1             | 19.82        | 19.85        | 19.65         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 19965 | Mid Ch 20175 | High Ch 20385 |               | Low Ch 19965 | Mid Ch 20175 | High Ch 20385 |               |
|           |         |           | 1711.5 MHz   | 1732.5 MHz   | 1753.5 MHz    |               | 1711.5 MHz   | 1732.5 MHz   | 1753.5 MHz    |               |
| 4 / 3M    | 1       | 0         | 21.96        | 22.12        | 22.10         | 0             | 20.84        | 21.00        | 21.07         | 1             |
|           | 1       | 7         | 21.79        | 21.98        | 22.10         | 0             | 20.80        | 20.91        | 20.93         | 1             |
|           | 1       | 14        | 21.71        | 21.78        | 21.81         | 0             | 20.52        | 20.69        | 20.73         | 1             |
|           | 8       | 0         | 20.89        | 20.95        | 21.00         | 1             | 19.77        | 19.82        | 19.87         | 2             |
|           | 8       | 3         | 20.65        | 20.64        | 20.82         | 1             | 19.53        | 19.71        | 19.64         | 2             |
|           | 8       | 7         | 20.49        | 20.77        | 20.69         | 1             | 19.52        | 19.48        | 19.76         | 2             |
|           | 15      | 0         | 20.77        | 20.82        | 20.97         | 1             | 19.73        | 19.80        | 19.89         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 19975 | Mid Ch 20175 | High Ch 20375 |               | Low CH 19975 | Mid CH 20175 | High CH 20375 |               |
|           |         |           | 1712.5 MHz   | 1732.5 MHz   | 1752.5 MHz    |               | 1712.5 MHz   | 1732.5 MHz   | 1752.5 MHz    |               |
| 4 / 5M    | 1       | 0         | 21.99        | 22.16        | 22.16         | 0             | 21.05        | 21.09        | 21.16         | 1             |
|           | 1       | 12        | 21.97        | 22.02        | 22.08         | 0             | 20.99        | 21.03        | 21.02         | 1             |
|           | 1       | 24        | 21.82        | 21.85        | 21.88         | 0             | 20.77        | 20.81        | 20.92         | 1             |
|           | 12      | 0         | 21.06        | 21.01        | 21.07         | 1             | 19.95        | 19.96        | 19.98         | 2             |
|           | 12      | 6         | 20.75        | 20.79        | 20.86         | 1             | 19.72        | 19.86        | 19.83         | 2             |
|           | 12      | 13        | 20.67        | 20.86        | 20.85         | 1             | 19.64        | 19.73        | 19.77         | 2             |
|           | 25      | 0         | 21.00        | 21.05        | 21.11         | 1             | 19.89        | 19.99        | 19.96         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 20000 | Mid Ch 20175 | High Ch 20350 |               | Low Ch 20000 | Mid Ch 20175 | High Ch 20350 |               |
|           |         |           | 1715.0 MHz   | 1732.5 MHz   | 1750.0 MHz    |               | 1715.0 MHz   | 1732.5 MHz   | 1750.0 MHz    |               |
| 4 / 10M   | 1       | 0         | 22.20        | 22.32        | 22.39         | 0             | 21.11        | 21.19        | 21.29         | 1             |
|           | 1       | 24        | 22.09        | 22.15        | 22.22         | 0             | 21.07        | 21.24        | 21.28         | 1             |
|           | 1       | 49        | 21.98        | 22.12        | 22.17         | 0             | 20.99        | 21.04        | 20.94         | 1             |
|           | 25      | 0         | 21.07        | 21.21        | 21.31         | 1             | 20.04        | 20.07        | 20.20         | 2             |
|           | 25      | 12        | 20.91        | 20.99        | 21.04         | 1             | 19.79        | 19.84        | 20.08         | 2             |
|           | 25      | 25        | 20.84        | 20.94        | 20.93         | 1             | 19.73        | 19.80        | 19.83         | 2             |
|           | 50      | 0         | 21.06        | 21.08        | 21.25         | 1             | 19.94        | 19.98        | 20.13         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 20025 | Mid Ch 20175 | High Ch 20325 |               | Low Ch 20025 | Mid Ch 20175 | High Ch 20325 |               |
|           |         |           | 1717.5 MHz   | 1732.5 MHz   | 1747.5 MHz    |               | 1717.5 MHz   | 1732.5 MHz   | 1747.5 MHz    |               |
| 4 / 15M   | 1       | 0         | 22.34        | 22.43        | 22.52         | 0             | 21.31        | 21.43        | 21.44         | 1             |
|           | 1       | 37        | 22.16        | 22.32        | 22.35         | 0             | 21.20        | 21.21        | 21.37         | 1             |
|           | 1       | 74        | 22.10        | 22.11        | 22.24         | 0             | 20.97        | 21.11        | 21.24         | 1             |
|           | 36      | 0         | 21.21        | 21.37        | 21.37         | 1             | 20.22        | 20.17        | 20.35         | 2             |
|           | 36      | 19        | 21.01        | 21.13        | 21.16         | 1             | 19.96        | 20.10        | 20.18         | 2             |
|           | 36      | 39        | 20.97        | 21.05        | 21.01         | 1             | 19.86        | 19.99        | 20.06         | 2             |
|           | 75      | 0         | 21.15        | 21.23        | 21.31         | 1             | 20.18        | 20.27        | 20.30         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 20050 | Mid Ch 20175 | High Ch 20300 |               | Low Ch 20050 | Mid Ch 20175 | High Ch 20300 |               |
|           |         |           | 1720.0 MHz   | 1732.5 MHz   | 1745.0 MHz    |               | 1720.0 MHz   | 1732.5 MHz   | 1745.0 MHz    |               |
| 4 / 20M   | 1       | 0         | 22.46        | 22.56        | 22.62         | 0             | 21.39        | 21.47        | 21.55         | 1             |
|           | 1       | 50        | 22.32        | 22.47        | 22.49         | 0             | 21.26        | 21.40        | 21.44         | 1             |
|           | 1       | 99        | 22.20        | 22.28        | 22.35         | 0             | 21.06        | 21.11        | 21.23         | 1             |
|           | 50      | 0         | 21.33        | 21.42        | 21.51         | 1             | 20.29        | 20.39        | 20.41         | 2             |
|           | 50      | 25        | 21.11        | 21.24        | 21.34         | 1             | 20.10        | 20.19        | 20.25         | 2             |
|           | 50      | 50        | 21.02        | 21.16        | 21.17         | 1             | 19.99        | 20.03        | 20.11         | 2             |
|           | 100     | 0         | 21.31        | 21.45        | 21.40         | 1             | 20.18        | 20.33        | 20.52         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 23017 | Mid Ch 23095 | High Ch 23173 |               | Low Ch 23017 | Mid Ch 23095 | High Ch 23173 |               |
|           |         |           | 699.7 MHz    | 707.5 MHz    | 715.3 MHz     |               | 699.7 MHz    | 707.5 MHz    | 715.3 MHz     |               |
| 12 / 1.4M | 1       | 0         | 21.96        | 21.75        | 21.79         | 0             | 20.87        | 20.65        | 20.76         | 1             |
|           | 1       | 2         | 21.92        | 21.60        | 21.69         | 0             | 20.75        | 20.44        | 20.66         | 1             |
|           | 1       | 5         | 21.73        | 21.39        | 21.41         | 0             | 20.55        | 20.35        | 20.36         | 1             |
|           | 3       | 0         | 21.82        | 21.50        | 21.54         | 0             | 20.68        | 20.27        | 20.54         | 1             |
|           | 3       | 1         | 21.64        | 21.29        | 21.26         | 0             | 20.45        | 20.24        | 20.22         | 1             |
|           | 3       | 3         | 21.67        | 21.41        | 21.40         | 0             | 20.62        | 20.11        | 20.41         | 1             |
|           | 6       | 0         | 20.95        | 20.67        | 20.63         | 1             | 19.69        | 19.55        | 19.48         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 23025 | Mid Ch 23095 | High Ch 23165 |               | Low Ch 23025 | Mid Ch 23095 | High Ch 23165 |               |
|           |         |           | 700.5 MHz    | 707.5 MHz    | 714.5 MHz     |               | 700.5 MHz    | 707.5 MHz    | 714.5 MHz     |               |
| 12 / 3M   | 1       | 0         | 22.25        | 21.97        | 22.05         | 0             | 21.14        | 20.92        | 21.07         | 1             |
|           | 1       | 7         | 22.07        | 21.87        | 21.86         | 0             | 21.03        | 20.77        | 20.91         | 1             |
|           | 1       | 14        | 21.96        | 21.65        | 21.64         | 0             | 20.72        | 20.59        | 20.69         | 1             |
|           | 8       | 0         | 21.09        | 20.83        | 20.89         | 1             | 19.95        | 19.82        | 19.77         | 2             |
|           | 8       | 3         | 20.97        | 20.57        | 20.63         | 1             | 19.79        | 19.70        | 19.72         | 2             |
|           | 8       | 7         | 20.86        | 20.58        | 20.67         | 1             | 19.64        | 19.59        | 19.51         | 2             |
|           | 15      | 0         | 21.02        | 20.73        | 20.87         | 1             | 20.02        | 19.81        | 19.75         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 23035 | Mid Ch 23095 | High Ch 23155 |               | Low Ch 23035 | Mid Ch 23095 | High Ch 23155 |               |
|           |         |           | 701.5 MHz    | 707.5 MHz    | 713.5 MHz     |               | 701.5 MHz    | 707.5 MHz    | 713.5 MHz     |               |
| 12 / 5M   | 1       | 0         | 22.44        | 22.24        | 22.29         | 0             | 21.44        | 21.21        | 21.19         | 1             |
|           | 1       | 12        | 22.29        | 22.13        | 22.13         | 0             | 21.30        | 21.04        | 21.04         | 1             |
|           | 1       | 24        | 22.13        | 21.99        | 21.97         | 0             | 21.03        | 20.78        | 20.88         | 1             |
|           | 12      | 0         | 21.33        | 21.04        | 21.13         | 1             | 20.14        | 20.03        | 19.97         | 2             |
|           | 12      | 6         | 21.12        | 20.88        | 20.95         | 1             | 20.13        | 19.90        | 19.91         | 2             |
|           | 12      | 13        | 21.04        | 20.85        | 20.84         | 1             | 20.03        | 19.79        | 19.79         | 2             |
|           | 25      | 0         | 21.26        | 21.08        | 21.13         | 1             | 20.31        | 20.00        | 20.05         | 2             |

| Band / BW | RB Size | RB Offset | QPSK         |              |               | 3GPP MPR (dB) | 16QAM        |              |               | 3GPP MPR (dB) |
|-----------|---------|-----------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|
|           |         |           | Low Ch 23060 | Mid Ch 23095 | High Ch 23130 |               | Low Ch 23060 | Mid Ch 23095 | High Ch 23130 |               |
|           |         |           | 704.0 MHz    | 707.5 MHz    | 711.0 MHz     |               | 704.0 MHz    | 707.5 MHz    | 711.0 MHz     |               |
| 12 / 10M  | 1       | 0         | 22.56        | 22.34        | 22.40         | 0             | 21.51        | 21.30        | 21.33         | 1             |
|           | 1       | 24        | 22.47        | 22.21        | 22.25         | 0             | 21.44        | 21.21        | 21.19         | 1             |
|           | 1       | 49        | 22.26        | 22.09        | 22.04         | 0             | 21.27        | 20.91        | 21.01         | 1             |
|           | 25      | 0         | 21.41        | 21.20        | 21.28         | 1             | 20.33        | 20.04        | 20.29         | 2             |
|           | 25      | 12        | 21.21        | 21.02        | 21.07         | 1             | 20.17        | 20.03        | 20.07         | 2             |
|           | 25      | 25        | 21.17        | 20.96        | 21.03         | 1             | 20.08        | 19.89        | 19.98         | 2             |
|           | 50      | 0         | 21.42        | 21.22        | 21.20         | 1             | 20.37        | 20.06        | 20.10         | 2             |

# Mode A

## ERP Power (dBm)

| LTE Band 12                        |         |                 |               |                        |           |          |                    |
|------------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 1.4 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                              | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                  | 23017   | 699.7           | -18.37        | 30.36                  | 11.99     | 15.81    | H                  |
|                                    | 23095   | 707.5           | -17.80        | 30.17                  | 12.37     | 17.26    |                    |
|                                    | 23173   | 715.3           | -17.56        | 30.17                  | 12.61     | 18.24    |                    |
|                                    | 23017   | 699.7           | -13.31        | 32.03                  | 18.72     | 74.47    | V                  |
|                                    | 23095   | 707.5           | -12.82        | 31.98                  | 19.16     | 82.41    |                    |
|                                    | 23173   | 715.3           | -12.51        | 32.06                  | 19.55     | 90.16    |                    |
| Channel Bandwidth: 1.4 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                  | 23017   | 699.7           | -19.73        | 30.36                  | 10.63     | 11.56    | H                  |
|                                    | 23095   | 707.5           | -19.11        | 30.17                  | 11.06     | 12.76    |                    |
|                                    | 23173   | 715.3           | -18.68        | 30.17                  | 11.49     | 14.09    |                    |
|                                    | 23017   | 699.7           | -14.28        | 32.03                  | 17.75     | 59.57    | V                  |
|                                    | 23095   | 707.5           | -13.79        | 31.98                  | 18.19     | 65.92    |                    |
|                                    | 23173   | 715.3           | -13.52        | 32.06                  | 18.54     | 71.45    |                    |

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

| LTE Band 12                      |         |                 |               |                        |           |          |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 3 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                | 23025   | 700.5           | -18.10        | 30.17                  | 12.07     | 16.11    | H                  |
|                                  | 23095   | 707.5           | -17.66        | 30.17                  | 12.51     | 17.82    |                    |
|                                  | 23165   | 714.5           | -17.25        | 30.18                  | 12.93     | 19.63    |                    |
|                                  | 23025   | 700.5           | -12.90        | 31.96                  | 19.06     | 80.54    | V                  |
|                                  | 23095   | 707.5           | -12.50        | 31.98                  | 19.48     | 88.72    |                    |
|                                  | 23165   | 714.5           | -12.13        | 32.03                  | 19.90     | 97.72    |                    |
| Channel Bandwidth: 3 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                | 23025   | 700.5           | -19.23        | 30.17                  | 10.94     | 12.42    | H                  |
|                                  | 23095   | 707.5           | -18.81        | 30.17                  | 11.36     | 13.68    |                    |
|                                  | 23165   | 714.5           | -18.41        | 30.18                  | 11.77     | 15.03    |                    |
|                                  | 23025   | 700.5           | -13.95        | 31.96                  | 18.01     | 63.24    | V                  |
|                                  | 23095   | 707.5           | -13.55        | 31.98                  | 18.43     | 69.66    |                    |
|                                  | 23165   | 714.5           | -13.22        | 32.03                  | 18.81     | 76.03    |                    |

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

| LTE Band 12                      |         |                 |               |                        |           |          |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 5 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                | 23035   | 701.5           | -17.91        | 30.17                  | 12.26     | 16.83    | H                  |
|                                  | 23095   | 707.5           | -17.48        | 30.17                  | 12.69     | 18.58    |                    |
|                                  | 23155   | 713.5           | -17.17        | 30.18                  | 13.01     | 20.00    |                    |
|                                  | 23035   | 701.5           | -12.69        | 31.96                  | 19.27     | 84.53    | V                  |
|                                  | 23095   | 707.5           | -12.29        | 31.98                  | 19.69     | 93.11    |                    |
|                                  | 23155   | 713.5           | -11.92        | 32.03                  | 20.11     | 102.57   |                    |
| Channel Bandwidth: 5 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                | 23035   | 701.5           | -14.04        | 30.17                  | 16.13     | 41.02    | H                  |
|                                  | 23095   | 707.5           | -13.60        | 30.17                  | 16.57     | 45.39    |                    |
|                                  | 23155   | 713.5           | -13.19        | 30.18                  | 16.99     | 50.00    |                    |
|                                  | 23035   | 701.5           | -13.77        | 31.96                  | 18.19     | 65.92    | V                  |
|                                  | 23095   | 707.5           | -13.37        | 31.98                  | 18.61     | 72.61    |                    |
|                                  | 23155   | 713.5           | -12.98        | 32.03                  | 19.05     | 80.35    |                    |

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

| LTE Band 12                       |         |                 |               |                        |           |          |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 10 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                 | 23060   | 704.0           | -17.95        | 30.17                  | 12.22     | 16.67    | H                  |
|                                   | 23095   | 707.5           | -17.50        | 30.17                  | 12.67     | 18.49    |                    |
|                                   | 23130   | 711.0           | -17.06        | 30.18                  | 13.12     | 20.51    |                    |
|                                   | 23060   | 704.0           | -12.62        | 31.96                  | 19.34     | 85.90    | V                  |
|                                   | 23095   | 707.5           | -12.22        | 31.98                  | 19.76     | 94.62    |                    |
|                                   | 23130   | 711.0           | -11.85        | 32.03                  | 20.18     | 104.23   |                    |
| Channel Bandwidth: 10 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                 | 23060   | 704.0           | -18.80        | 30.17                  | 11.37     | 13.71    | H                  |
|                                   | 23095   | 707.5           | -18.38        | 30.17                  | 11.79     | 15.10    |                    |
|                                   | 23130   | 711.0           | -17.96        | 30.18                  | 12.22     | 16.67    |                    |
|                                   | 23060   | 704.0           | -13.65        | 31.96                  | 18.31     | 67.76    | V                  |
|                                   | 23095   | 707.5           | -13.26        | 31.98                  | 18.72     | 74.47    |                    |
|                                   | 23130   | 711.0           | -12.85        | 32.03                  | 19.18     | 82.79    |                    |

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

# EIRP Power (dBm)

| WCDMA |         |                 |               |                        |            |           |                    |
|-------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z     | 1312    | 1712.4          | -9.68         | 36.29                  | 26.61      | 458.14    | H                  |
|       | 1413    | 1732.6          | -10.16        | 36.69                  | 26.53      | 449.78    |                    |
|       | 1513    | 1752.6          | -10.51        | 36.98                  | 26.47      | 443.61    |                    |
|       | 1312    | 1712.4          | -17.83        | 37.11                  | 19.28      | 84.72     | V                  |
|       | 1413    | 1732.6          | -18.38        | 37.60                  | 19.22      | 83.56     |                    |
|       | 1513    | 1752.6          | -18.48        | 37.65                  | 19.17      | 82.60     |                    |

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

| LTE Band 4                         |         |                 |               |                        |            |           |                    |
|------------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 1.4 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                              | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                  | 19957   | 1710.7          | -18.49        | 36.45                  | 17.96      | 62.52     | H                  |
|                                    | 20175   | 1732.5          | -19.26        | 36.80                  | 17.54      | 56.75     |                    |
|                                    | 20393   | 1754.3          | -19.82        | 36.94                  | 17.12      | 51.52     |                    |
|                                    | 19957   | 1710.7          | -11.26        | 37.28                  | 26.02      | 399.94    | V                  |
|                                    | 20175   | 1732.5          | -11.97        | 37.63                  | 25.66      | 368.13    |                    |
|                                    | 20393   | 1754.3          | -12.37        | 37.64                  | 25.27      | 336.51    |                    |
| Channel Bandwidth: 1.4 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                  | 19957   | 1710.7          | -19.53        | 36.45                  | 16.92      | 49.20     | H                  |
|                                    | 20175   | 1732.5          | -20.32        | 36.80                  | 16.48      | 44.46     |                    |
|                                    | 20393   | 1754.3          | -20.91        | 36.94                  | 16.03      | 40.09     |                    |
|                                    | 19957   | 1710.7          | -12.27        | 37.28                  | 25.01      | 316.96    | V                  |
|                                    | 20175   | 1732.5          | -12.96        | 37.63                  | 24.67      | 293.09    |                    |
|                                    | 20393   | 1754.3          | -13.39        | 37.64                  | 24.25      | 266.07    |                    |

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



| LTE Band 4                       |         |                 |               |                        |            |           |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 3 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                | 19965   | 1711.5          | -18.22        | 36.45                  | 18.23      | 66.53     | H                  |
|                                  | 20175   | 1732.5          | -18.99        | 36.80                  | 17.81      | 60.39     |                    |
|                                  | 20385   | 1753.5          | -19.57        | 36.94                  | 17.37      | 54.58     |                    |
|                                  | 19965   | 1711.5          | -11.13        | 37.28                  | 26.15      | 412.10    | V                  |
|                                  | 20175   | 1732.5          | -11.90        | 37.63                  | 25.73      | 374.11    |                    |
|                                  | 20385   | 1753.5          | -12.33        | 37.64                  | 25.31      | 339.63    |                    |
| Channel Bandwidth: 3 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                | 19965   | 1711.5          | -19.38        | 36.45                  | 17.07      | 50.93     | H                  |
|                                  | 20175   | 1732.5          | -20.15        | 36.80                  | 16.65      | 46.24     |                    |
|                                  | 20385   | 1753.5          | -20.71        | 36.94                  | 16.23      | 41.98     |                    |
|                                  | 19965   | 1711.5          | -12.17        | 37.28                  | 25.11      | 324.34    | V                  |
|                                  | 20175   | 1732.5          | -12.91        | 37.63                  | 24.72      | 296.48    |                    |
|                                  | 20385   | 1753.5          | -13.29        | 37.64                  | 24.35      | 272.27    |                    |

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

| LTE Band 4                       |         |                 |               |                        |            |           |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 5 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                | 19975   | 1712.5          | -18.28        | 36.45                  | 18.17      | 65.61     | H                  |
|                                  | 20175   | 1732.5          | -19.05        | 36.80                  | 17.75      | 59.57     |                    |
|                                  | 20375   | 1752.5          | -19.63        | 36.94                  | 17.31      | 53.83     |                    |
|                                  | 19975   | 1712.5          | -11.05        | 37.28                  | 26.23      | 419.76    | V                  |
|                                  | 20175   | 1732.5          | -11.82        | 37.63                  | 25.81      | 381.07    |                    |
|                                  | 20375   | 1752.5          | -12.22        | 37.64                  | 25.42      | 348.34    |                    |
| Channel Bandwidth: 5 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                | 19975   | 1712.5          | -19.24        | 36.45                  | 17.21      | 52.60     | H                  |
|                                  | 20175   | 1732.5          | -20.03        | 36.80                  | 16.77      | 47.53     |                    |
|                                  | 20375   | 1752.5          | -20.58        | 36.94                  | 16.36      | 43.25     |                    |
|                                  | 19975   | 1712.5          | -12.03        | 37.28                  | 25.25      | 334.97    | V                  |
|                                  | 20175   | 1732.5          | -12.77        | 37.63                  | 24.86      | 306.20    |                    |
|                                  | 20375   | 1752.5          | -13.19        | 37.64                  | 24.45      | 278.61    |                    |

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

| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 10 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                 | 20000   | 1715.0          | -18.11        | 36.64                  | 18.53      | 71.29     | H                  |
|                                   | 20175   | 1732.5          | -18.69        | 36.80                  | 18.11      | 64.71     |                    |
|                                   | 20350   | 1750.0          | -19.07        | 36.80                  | 17.73      | 59.29     |                    |
|                                   | 20000   | 1715.0          | -10.97        | 37.44                  | 26.47      | 443.61    | V                  |
|                                   | 20175   | 1732.5          | -11.58        | 37.63                  | 26.05      | 402.72    |                    |
|                                   | 20350   | 1750.0          | -11.98        | 37.64                  | 25.66      | 368.13    |                    |
| Channel Bandwidth: 10 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                 | 20000   | 1715.0          | -19.33        | 36.64                  | 17.31      | 53.83     | H                  |
|                                   | 20175   | 1732.5          | -19.95        | 36.80                  | 16.85      | 48.42     |                    |
|                                   | 20350   | 1750.0          | -20.39        | 36.80                  | 16.41      | 43.75     |                    |
|                                   | 20000   | 1715.0          | -12.08        | 37.44                  | 25.36      | 343.56    | V                  |
|                                   | 20175   | 1732.5          | -12.65        | 37.63                  | 24.98      | 314.77    |                    |
|                                   | 20350   | 1750.0          | -13.09        | 37.64                  | 24.55      | 285.10    |                    |

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

| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 15 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                 | 20025   | 1717.5          | -17.83        | 36.45                  | 18.62      | 72.78     | H                  |
|                                   | 20175   | 1732.5          | -18.56        | 36.80                  | 18.24      | 66.68     |                    |
|                                   | 20325   | 1747.5          | -19.13        | 36.94                  | 17.81      | 60.39     |                    |
|                                   | 20025   | 1717.5          | -10.73        | 37.28                  | 26.55      | 451.86    | V                  |
|                                   | 20175   | 1732.5          | -11.47        | 37.63                  | 26.16      | 413.05    |                    |
|                                   | 20325   | 1747.5          | -11.90        | 37.64                  | 25.74      | 374.97    |                    |
| Channel Bandwidth: 15 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                 | 20025   | 1717.5          | -19.09        | 36.45                  | 17.36      | 54.45     | H                  |
|                                   | 20175   | 1732.5          | -19.83        | 36.80                  | 16.97      | 49.77     |                    |
|                                   | 20325   | 1747.5          | -20.36        | 36.94                  | 16.58      | 45.50     |                    |
|                                   | 20025   | 1717.5          | -11.80        | 37.28                  | 25.48      | 353.18    | V                  |
|                                   | 20175   | 1732.5          | -12.54        | 37.63                  | 25.09      | 322.85    |                    |
|                                   | 20325   | 1747.5          | -12.98        | 37.64                  | 24.66      | 292.42    |                    |

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

| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 20 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z                                 | 20050   | 1720.0          | -17.92        | 36.45                  | 18.53      | 71.29     | H                  |
|                                   | 20175   | 1732.5          | -18.66        | 36.80                  | 18.14      | 65.16     |                    |
|                                   | 20300   | 1745.0          | -19.17        | 36.94                  | 17.77      | 59.84     |                    |
|                                   | 20050   | 1720.0          | -10.60        | 37.28                  | 26.68      | 465.59    | V                  |
|                                   | 20175   | 1732.5          | -11.39        | 37.63                  | 26.24      | 420.73    |                    |
|                                   | 20300   | 1745.0          | -11.79        | 37.64                  | 25.85      | 384.59    |                    |
| Channel Bandwidth: 20 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| Z                                 | 20050   | 1720.0          | -18.77        | 36.45                  | 17.68      | 58.61     | H                  |
|                                   | 20175   | 1732.5          | -19.56        | 36.80                  | 17.24      | 52.97     |                    |
|                                   | 20300   | 1745.0          | -20.36        | 36.94                  | 16.58      | 45.50     |                    |
|                                   | 20050   | 1720.0          | -11.71        | 37.28                  | 25.57      | 360.58    | V                  |
|                                   | 20175   | 1732.5          | -12.44        | 37.63                  | 25.19      | 330.37    |                    |
|                                   | 20300   | 1745.0          | -12.87        | 37.64                  | 24.77      | 299.92    |                    |

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

## Mode B

### ERP Power (dBm)

| LTE Band 12                        |         |                 |               |                        |           |          |                    |
|------------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 1.4 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                              | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                  | 23017   | 699.7           | -16.83        | 30.36                  | 13.53     | 22.54    | H                  |
|                                    | 23095   | 707.5           | -16.21        | 30.17                  | 13.96     | 24.89    |                    |
|                                    | 23173   | 715.3           | -15.80        | 30.17                  | 14.37     | 27.35    |                    |
|                                    | 23017   | 699.7           | -11.36        | 32.03                  | 20.67     | 116.68   | V                  |
|                                    | 23095   | 707.5           | -10.97        | 31.98                  | 21.01     | 126.18   |                    |
|                                    | 23173   | 715.3           | -10.63        | 32.06                  | 21.43     | 139.00   |                    |
| Channel Bandwidth: 1.4 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                  | 23017   | 699.7           | -17.83        | 30.36                  | 12.53     | 17.91    | H                  |
|                                    | 23095   | 707.5           | -17.19        | 30.17                  | 12.98     | 19.86    |                    |
|                                    | 23173   | 715.3           | -16.76        | 30.17                  | 13.41     | 21.93    |                    |
|                                    | 23017   | 699.7           | -12.34        | 32.03                  | 19.69     | 93.11    | V                  |
|                                    | 23095   | 707.5           | -11.85        | 31.98                  | 20.13     | 103.04   |                    |
|                                    | 23173   | 715.3           | -11.49        | 32.06                  | 20.57     | 114.02   |                    |

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

| LTE Band 12                      |         |                 |               |                        |           |          |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 3 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                | 23025   | 700.5           | -16.31        | 30.17                  | 13.86     | 24.32    | H                  |
|                                  | 23095   | 707.5           | -15.88        | 30.17                  | 14.29     | 26.85    |                    |
|                                  | 23165   | 714.5           | -15.47        | 30.18                  | 14.71     | 29.58    |                    |
|                                  | 23025   | 700.5           | -11.15        | 31.96                  | 20.81     | 120.50   | V                  |
|                                  | 23095   | 707.5           | -10.74        | 31.98                  | 21.24     | 133.05   |                    |
|                                  | 23165   | 714.5           | -10.36        | 32.03                  | 21.67     | 146.89   |                    |
| Channel Bandwidth: 3 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                | 23025   | 700.5           | -17.60        | 30.17                  | 12.57     | 18.07    | H                  |
|                                  | 23095   | 707.5           | -17.15        | 30.17                  | 13.02     | 20.04    |                    |
|                                  | 23165   | 714.5           | -16.72        | 30.18                  | 13.46     | 22.18    |                    |
|                                  | 23025   | 700.5           | -12.23        | 31.96                  | 19.73     | 93.97    | V                  |
|                                  | 23095   | 707.5           | -11.84        | 31.98                  | 20.14     | 103.28   |                    |
|                                  | 23165   | 714.5           | -11.45        | 32.03                  | 20.58     | 114.29   |                    |

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

| LTE Band 12                      |         |                 |               |                        |           |          |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 5 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                | 23035   | 701.5           | -16.16        | 30.17                  | 14.01     | 25.18    | H                  |
|                                  | 23095   | 707.5           | -15.74        | 30.17                  | 14.43     | 27.73    |                    |
|                                  | 23155   | 713.5           | -15.30        | 30.18                  | 14.88     | 30.76    |                    |
|                                  | 23035   | 701.5           | -10.93        | 31.96                  | 21.03     | 126.77   | V                  |
|                                  | 23095   | 707.5           | -10.51        | 31.98                  | 21.47     | 140.28   |                    |
|                                  | 23155   | 713.5           | -10.12        | 32.03                  | 21.91     | 155.24   |                    |
| Channel Bandwidth: 5 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                | 23035   | 701.5           | -17.14        | 30.17                  | 13.03     | 20.09    | H                  |
|                                  | 23095   | 707.5           | -16.70        | 30.17                  | 13.47     | 22.23    |                    |
|                                  | 23155   | 713.5           | -16.29        | 30.18                  | 13.89     | 24.49    |                    |
|                                  | 23035   | 701.5           | -11.93        | 31.96                  | 20.03     | 100.69   | V                  |
|                                  | 23095   | 707.5           | -11.49        | 31.98                  | 20.49     | 111.94   |                    |
|                                  | 23155   | 713.5           | -11.11        | 32.03                  | 20.92     | 123.59   |                    |

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

| LTE Band 12                       |         |                 |               |                        |           |          |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|-----------|----------|--------------------|
| Channel Bandwidth: 10 MHz / QPSK  |         |                 |               |                        |           |          |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| Z                                 | 23060   | 704.0           | -15.98        | 30.17                  | 14.19     | 26.24    | H                  |
|                                   | 23095   | 707.5           | -15.55        | 30.17                  | 14.62     | 28.97    |                    |
|                                   | 23130   | 711.0           | -15.18        | 30.18                  | 15.00     | 31.62    |                    |
|                                   | 23060   | 704.0           | -10.71        | 31.96                  | 21.25     | 133.35   | V                  |
|                                   | 23095   | 707.5           | -10.31        | 31.98                  | 21.67     | 146.89   |                    |
|                                   | 23130   | 711.0           | -10.00        | 32.03                  | 22.03     | 159.59   |                    |
| Channel Bandwidth: 10 MHz / 16QAM |         |                 |               |                        |           |          |                    |
| Z                                 | 23060   | 704.0           | -17.11        | 30.17                  | 13.06     | 20.23    | H                  |
|                                   | 23095   | 707.5           | -16.69        | 30.17                  | 13.48     | 22.28    |                    |
|                                   | 23130   | 711.0           | -16.26        | 30.18                  | 13.92     | 24.66    |                    |
|                                   | 23060   | 704.0           | -11.88        | 31.96                  | 20.08     | 101.86   | V                  |
|                                   | 23095   | 707.5           | -11.47        | 31.98                  | 20.51     | 112.46   |                    |
|                                   | 23130   | 711.0           | -11.09        | 32.03                  | 20.94     | 124.17   |                    |

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

# EIRP Power (dBm)

| WCDMA |         |                 |               |                        |            |           |                    |
|-------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| Z     | 1312    | 1712.4          | -18.53        | 36.29                  | 17.76      | 59.70     | H                  |
|       | 1413    | 1732.6          | -18.88        | 36.69                  | 17.81      | 60.39     |                    |
|       | 1513    | 1752.6          | -19.10        | 36.98                  | 17.88      | 61.38     |                    |
|       | 1312    | 1712.4          | -12.74        | 37.11                  | 24.37      | 273.53    | V                  |
|       | 1413    | 1732.6          | -13.18        | 37.60                  | 24.42      | 276.69    |                    |
|       | 1513    | 1752.6          | -13.17        | 37.65                  | 24.48      | 280.54    |                    |

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

| LTE Band 4                         |         |                 |               |                        |            |           |                    |
|------------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 1.4 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                              | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                  | 19957   | 1710.7          | -19.57        | 36.45                  | 16.88      | 48.75     | H                  |
|                                    | 20175   | 1732.5          | -20.37        | 36.80                  | 16.43      | 43.95     |                    |
|                                    | 20393   | 1754.3          | -20.93        | 36.94                  | 16.01      | 39.90     |                    |
|                                    | 19957   | 1710.7          | -13.37        | 37.28                  | 23.91      | 246.04    | V                  |
|                                    | 20175   | 1732.5          | -14.15        | 37.63                  | 23.48      | 222.84    |                    |
|                                    | 20393   | 1754.3          | -14.58        | 37.64                  | 23.06      | 202.30    |                    |
| Channel Bandwidth: 1.4 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                  | 19957   | 1710.7          | -20.60        | 36.45                  | 15.85      | 38.46     | H                  |
|                                    | 20175   | 1732.5          | -21.37        | 36.80                  | 15.43      | 34.91     |                    |
|                                    | 20393   | 1754.3          | -21.98        | 36.94                  | 14.96      | 31.33     |                    |
|                                    | 19957   | 1710.7          | -14.34        | 37.28                  | 22.94      | 196.79    | V                  |
|                                    | 20175   | 1732.5          | -15.14        | 37.63                  | 22.49      | 177.42    |                    |
|                                    | 20393   | 1754.3          | -15.63        | 37.64                  | 22.01      | 158.85    |                    |

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

| LTE Band 4                       |         |                 |               |                        |            |           |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 3 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                | 19965   | 1711.5          | -19.52        | 36.45                  | 16.93      | 49.32     | H                  |
|                                  | 20175   | 1732.5          | -20.31        | 36.80                  | 16.49      | 44.57     |                    |
|                                  | 20385   | 1753.5          | -20.86        | 36.94                  | 16.08      | 40.55     |                    |
|                                  | 19965   | 1711.5          | -13.32        | 37.28                  | 23.96      | 248.89    | V                  |
|                                  | 20175   | 1732.5          | -14.01        | 37.63                  | 23.62      | 230.14    |                    |
|                                  | 20385   | 1753.5          | -14.45        | 37.64                  | 23.19      | 208.45    |                    |
| Channel Bandwidth: 3 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                | 19965   | 1711.5          | -20.51        | 36.45                  | 15.94      | 39.26     | H                  |
|                                  | 20175   | 1732.5          | -21.29        | 36.80                  | 15.51      | 35.56     |                    |
|                                  | 20385   | 1753.5          | -21.87        | 36.94                  | 15.07      | 32.14     |                    |
|                                  | 19965   | 1711.5          | -14.31        | 37.28                  | 22.97      | 198.15    | V                  |
|                                  | 20175   | 1732.5          | -15.11        | 37.63                  | 22.52      | 178.65    |                    |
|                                  | 20385   | 1753.5          | -15.56        | 37.64                  | 22.08      | 161.44    |                    |

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

| LTE Band 4                       |         |                 |               |                        |            |           |                    |
|----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 5 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                            | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                | 19975   | 1712.5          | -19.52        | 36.45                  | 16.93      | 49.32     | H                  |
|                                  | 20175   | 1732.5          | -20.29        | 36.80                  | 16.51      | 44.77     |                    |
|                                  | 20375   | 1752.5          | -20.87        | 36.94                  | 16.07      | 40.46     |                    |
|                                  | 19975   | 1712.5          | -13.26        | 37.28                  | 24.02      | 252.35    | V                  |
|                                  | 20175   | 1732.5          | -14.02        | 37.63                  | 23.61      | 229.61    |                    |
|                                  | 20375   | 1752.5          | -14.47        | 37.64                  | 23.17      | 207.49    |                    |
| Channel Bandwidth: 5 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                | 19975   | 1712.5          | -20.47        | 36.45                  | 15.98      | 39.63     | H                  |
|                                  | 20175   | 1732.5          | -21.24        | 36.80                  | 15.56      | 35.97     |                    |
|                                  | 20375   | 1752.5          | -21.83        | 36.94                  | 15.11      | 32.43     |                    |
|                                  | 19975   | 1712.5          | -14.23        | 37.28                  | 23.05      | 201.84    | V                  |
|                                  | 20175   | 1732.5          | -14.97        | 37.63                  | 22.66      | 184.50    |                    |
|                                  | 20375   | 1752.5          | -15.41        | 37.64                  | 22.23      | 167.11    |                    |

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

| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 10 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                 | 20000   | 1715.0          | -19.45        | 36.64                  | 17.19      | 52.36     | H                  |
|                                   | 20175   | 1732.5          | -20.03        | 36.80                  | 16.77      | 47.53     |                    |
|                                   | 20350   | 1750.0          | -20.48        | 36.80                  | 16.32      | 42.85     |                    |
|                                   | 20000   | 1715.0          | -13.16        | 37.44                  | 24.28      | 267.92    | V                  |
|                                   | 20175   | 1732.5          | -13.77        | 37.63                  | 23.86      | 243.22    |                    |
|                                   | 20350   | 1750.0          | -14.17        | 37.64                  | 23.47      | 222.33    |                    |
| Channel Bandwidth: 10 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                 | 20000   | 1715.0          | -20.46        | 36.64                  | 16.18      | 41.50     | H                  |
|                                   | 20175   | 1732.5          | -21.07        | 36.80                  | 15.73      | 37.41     |                    |
|                                   | 20350   | 1750.0          | -21.49        | 36.80                  | 15.31      | 33.96     |                    |
|                                   | 20000   | 1715.0          | -14.19        | 37.44                  | 23.25      | 211.35    | V                  |
|                                   | 20175   | 1732.5          | -14.82        | 37.63                  | 22.81      | 190.99    |                    |
|                                   | 20350   | 1750.0          | -15.27        | 37.64                  | 22.37      | 172.58    |                    |

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

| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 15 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                 | 20025   | 1717.5          | -19.07        | 36.45                  | 17.38      | 54.70     | H                  |
|                                   | 20175   | 1732.5          | -19.83        | 36.80                  | 16.97      | 49.77     |                    |
|                                   | 20325   | 1747.5          | -20.40        | 36.94                  | 16.54      | 45.08     |                    |
|                                   | 20025   | 1717.5          | -12.86        | 37.28                  | 24.42      | 276.69    | V                  |
|                                   | 20175   | 1732.5          | -13.67        | 37.63                  | 23.96      | 248.89    |                    |
|                                   | 20325   | 1747.5          | -14.09        | 37.64                  | 23.55      | 226.46    |                    |
| Channel Bandwidth: 15 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                 | 20025   | 1717.5          | -20.07        | 36.45                  | 16.38      | 43.45     | H                  |
|                                   | 20175   | 1732.5          | -20.83        | 36.80                  | 15.97      | 39.54     |                    |
|                                   | 20325   | 1747.5          | -21.43        | 36.94                  | 15.51      | 35.56     |                    |
|                                   | 20025   | 1717.5          | -13.93        | 37.28                  | 23.35      | 216.27    | V                  |
|                                   | 20175   | 1732.5          | -14.72        | 37.63                  | 22.91      | 195.43    |                    |
|                                   | 20325   | 1747.5          | -15.12        | 37.64                  | 22.52      | 178.65    |                    |

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



| LTE Band 4                        |         |                 |               |                        |            |           |                    |
|-----------------------------------|---------|-----------------|---------------|------------------------|------------|-----------|--------------------|
| Channel Bandwidth: 20 MHz / QPSK  |         |                 |               |                        |            |           |                    |
| Plane                             | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | EIRP (dBm) | EIRP (mW) | Polarization (H/V) |
| X                                 | 20050   | 1720.0          | -18.98        | 36.45                  | 17.47      | 55.85     | H                  |
|                                   | 20175   | 1732.5          | -19.77        | 36.80                  | 17.03      | 50.47     |                    |
|                                   | 20300   | 1745.0          | -20.29        | 36.94                  | 16.65      | 46.24     |                    |
|                                   | 20050   | 1720.0          | -12.75        | 37.28                  | 24.53      | 283.79    | V                  |
|                                   | 20175   | 1732.5          | -13.51        | 37.63                  | 24.12      | 258.23    |                    |
|                                   | 20300   | 1745.0          | -13.90        | 37.64                  | 23.74      | 236.59    |                    |
| Channel Bandwidth: 20 MHz / 16QAM |         |                 |               |                        |            |           |                    |
| X                                 | 20050   | 1720.0          | -20.07        | 36.45                  | 16.38      | 43.45     | H                  |
|                                   | 20175   | 1732.5          | -20.79        | 36.80                  | 16.01      | 39.90     |                    |
|                                   | 20300   | 1745.0          | -21.31        | 36.94                  | 15.63      | 36.56     |                    |
|                                   | 20050   | 1720.0          | -13.83        | 37.28                  | 23.45      | 221.31    | V                  |
|                                   | 20175   | 1732.5          | -14.61        | 37.63                  | 23.02      | 200.45    |                    |
|                                   | 20300   | 1745.0          | -15.01        | 37.64                  | 22.63      | 183.23    |                    |

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

## 4.2 Modulation Characteristics Measurement

### 4.2.1 Limits of Modulation Characteristics

N/A

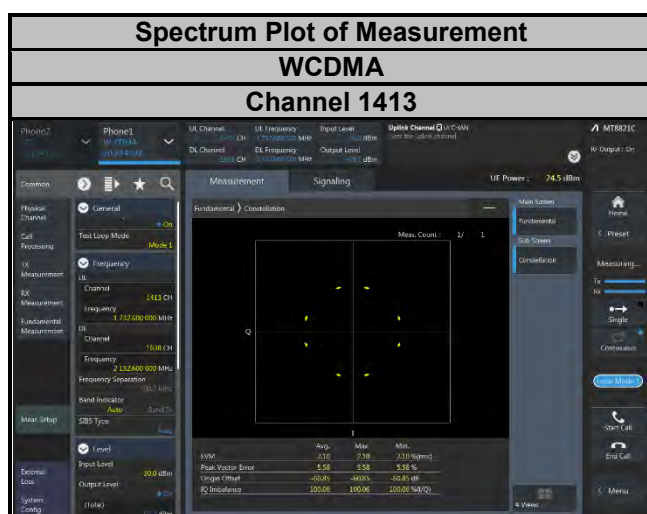
### 4.2.2 Test Setup

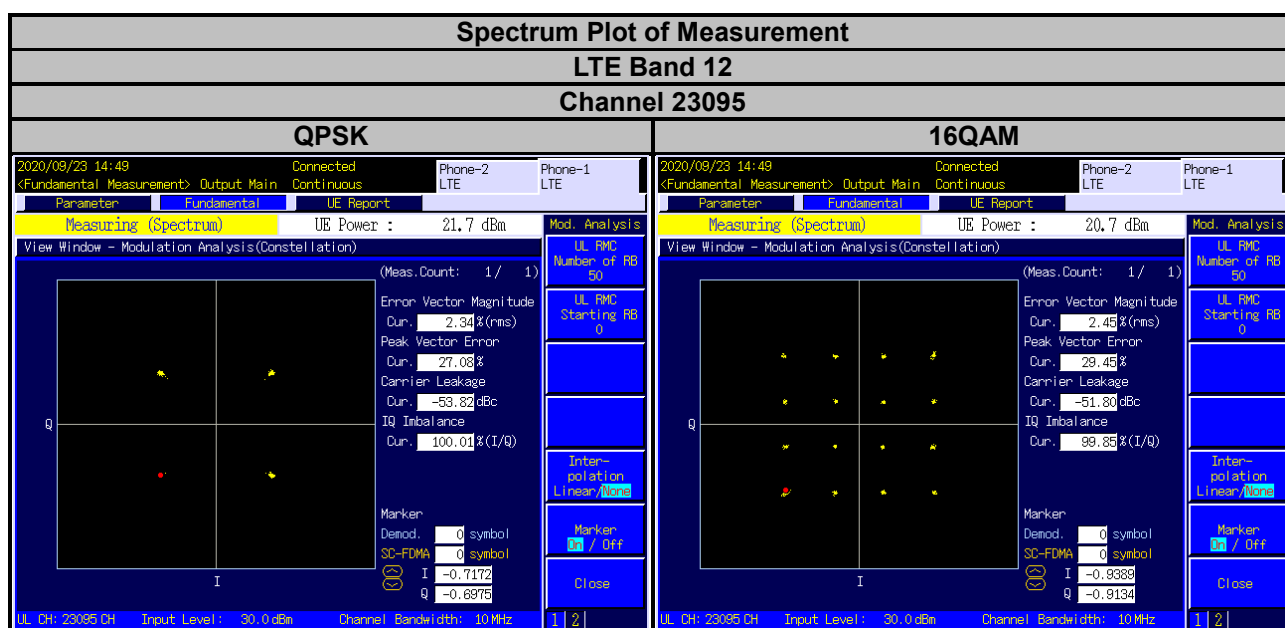
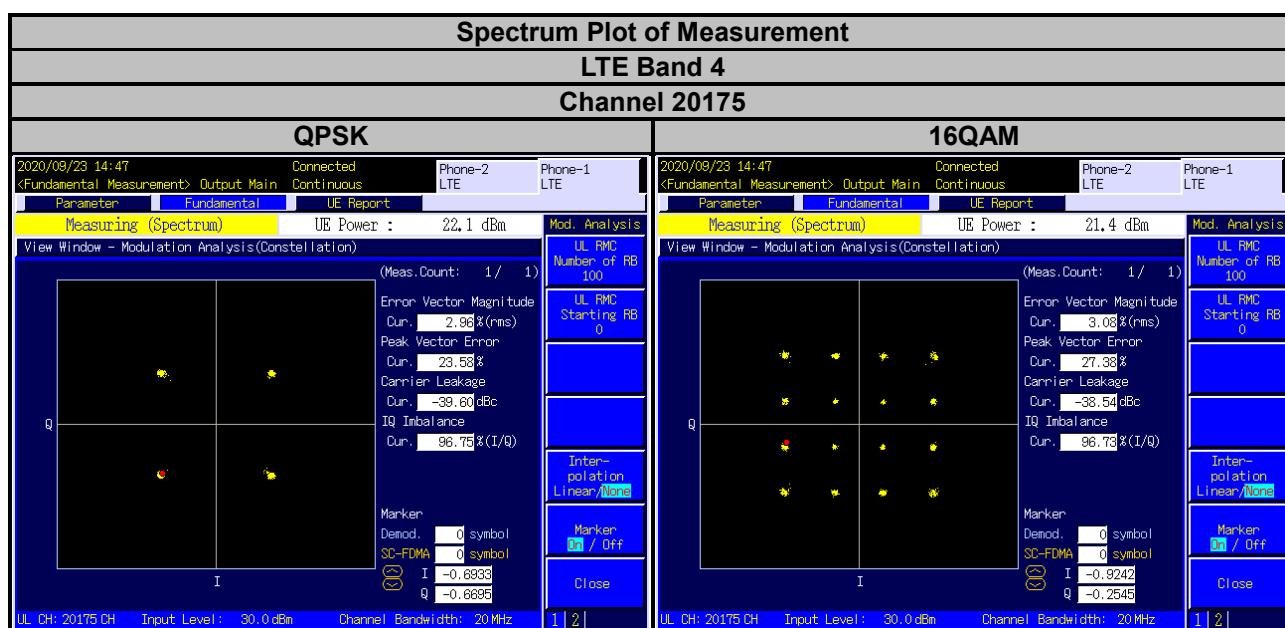


### 4.2.3 Test Procedure

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

### 4.2.4 Test Results





### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

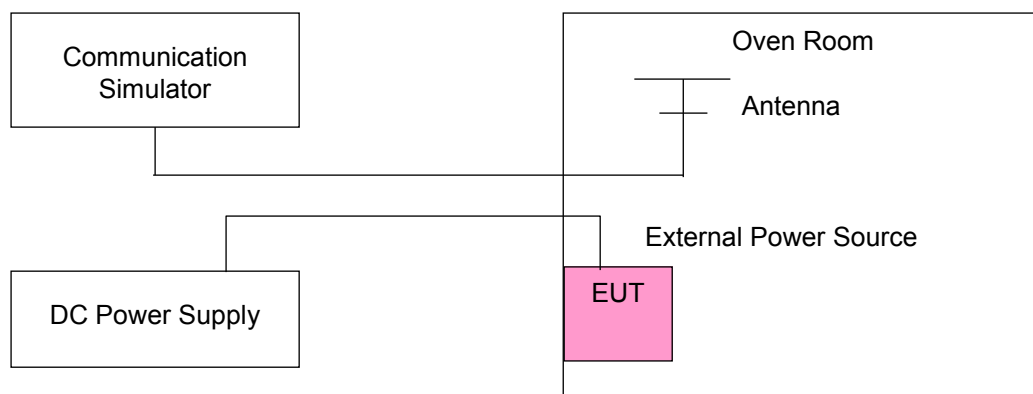
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

#### 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 DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

#### 4.3.3 Test Setup



#### 4.3.4 Test Results

##### Frequency Error vs. Voltage

| Voltage<br>(Volts) | WCDMA           |                       |                 |                       |
|--------------------|-----------------|-----------------------|-----------------|-----------------------|
|                    | Low Channel     |                       | High Channel    |                       |
|                    | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 12                 | 1712.400002     | 0.001                 | 1752.600002     | 0.001                 |
| 10.2               | 1712.400002     | 0.001                 | 1752.600003     | 0.002                 |
| 13.8               | 1712.400004     | 0.002                 | 1752.600004     | 0.002                 |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

##### Frequency Error vs. Temperature

| Temp. (°C) | WCDMA           |                       |                 |                       |
|------------|-----------------|-----------------------|-----------------|-----------------------|
|            | Low Channel     |                       | High Channel    |                       |
|            | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -40        | 1712.400002     | 0.001                 | 1752.600004     | 0.002                 |
| -30        | 1712.400002     | 0.001                 | 1752.600002     | 0.001                 |
| -20        | 1712.400001     | 0.001                 | 1752.600002     | 0.001                 |
| -10        | 1712.400001     | 0.001                 | 1752.600001     | 0.001                 |
| 0          | 1712.400003     | 0.002                 | 1752.600002     | 0.001                 |
| 10         | 1712.399997     | -0.002                | 1752.599999     | -0.001                |
| 20         | 1712.399997     | -0.002                | 1752.599999     | -0.001                |
| 30         | 1712.399997     | -0.002                | 1752.599997     | -0.002                |
| 40         | 1712.399999     | -0.001                | 1752.599998     | -0.001                |
| 50         | 1712.399999     | -0.001                | 1752.599997     | -0.002                |
| 60         | 1712.399998     | -0.001                | 1752.599997     | -0.002                |
| 70         | 1712.399996     | -0.002                | 1752.599996     | -0.002                |
| 80         | 1712.399999     | -0.001                | 1752.599997     | -0.002                |
| 85         | 1712.399997     | -0.002                | 1752.599998     | -0.001                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 1710.700004                | 0.002                 | 1754.299996     | -0.002                |
| 10.2               | 1710.700003                | 0.002                 | 1754.299999     | -0.001                |
| 13.8               | 1710.700001                | 0.001                 | 1754.299997     | -0.002                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1710.700004                | 0.002                 | 1754.300004     | 0.002                 |
| -30        | 1710.700004                | 0.002                 | 1754.300002     | 0.001                 |
| -20        | 1710.700001                | 0.001                 | 1754.300004     | 0.002                 |
| -10        | 1710.700004                | 0.002                 | 1754.300003     | 0.002                 |
| 0          | 1710.700003                | 0.002                 | 1754.300003     | 0.002                 |
| 10         | 1710.699998                | -0.001                | 1754.300002     | 0.001                 |
| 20         | 1710.699997                | -0.002                | 1754.300001     | 0.001                 |
| 30         | 1710.699996                | -0.002                | 1754.300003     | 0.002                 |
| 40         | 1710.699998                | -0.001                | 1754.299997     | -0.001                |
| 50         | 1710.699998                | -0.001                | 1754.299999     | -0.001                |
| 60         | 1710.699997                | -0.002                | 1754.299999     | -0.001                |
| 70         | 1710.699997                | -0.002                | 1754.299998     | -0.001                |
| 80         | 1710.699997                | -0.002                | 1754.299999     | -0.001                |
| 85         | 1710.699998                | -0.001                | 1754.299999     | -0.001                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 1711.500003              | 0.002                 | 1753.499996     | -0.002                |
| 10.2               | 1711.500004              | 0.002                 | 1753.499998     | -0.001                |
| 13.8               | 1711.500003              | 0.002                 | 1753.499998     | -0.001                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1711.500003              | 0.002                 | 1753.500002     | 0.001                 |
| -30        | 1711.500003              | 0.002                 | 1753.500002     | 0.001                 |
| -20        | 1711.500004              | 0.002                 | 1753.500003     | 0.002                 |
| -10        | 1711.500002              | 0.001                 | 1753.500003     | 0.002                 |
| 0          | 1711.500004              | 0.002                 | 1753.500004     | 0.002                 |
| 10         | 1711.499996              | -0.002                | 1753.500002     | 0.001                 |
| 20         | 1711.499997              | -0.002                | 1753.500002     | 0.001                 |
| 30         | 1711.499999              | -0.001                | 1753.500002     | 0.001                 |
| 40         | 1711.499998              | -0.001                | 1753.499998     | -0.001                |
| 50         | 1711.499997              | -0.002                | 1753.499996     | -0.002                |
| 60         | 1711.499999              | -0.001                | 1753.499997     | -0.002                |
| 70         | 1711.499997              | -0.002                | 1753.499999     | -0.001                |
| 80         | 1711.499998              | -0.001                | 1753.499997     | -0.002                |
| 85         | 1711.499999              | -0.001                | 1753.499998     | -0.001                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 1712.500002              | 0.001                 | 1752.499998     | -0.001                |
| 10.2               | 1712.500003              | 0.002                 | 1752.499999     | -0.001                |
| 13.8               | 1712.500002              | 0.001                 | 1752.499999     | -0.001                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1712.500004              | 0.002                 | 1752.500002     | 0.001                 |
| -30        | 1712.500001              | 0.001                 | 1752.500001     | 0.001                 |
| -20        | 1712.500001              | 0.001                 | 1752.500002     | 0.001                 |
| -10        | 1712.500003              | 0.002                 | 1752.500002     | 0.001                 |
| 0          | 1712.500002              | 0.001                 | 1752.500004     | 0.002                 |
| 10         | 1712.499998              | -0.001                | 1752.500004     | 0.002                 |
| 20         | 1712.499998              | -0.001                | 1752.500002     | 0.001                 |
| 30         | 1712.499997              | -0.002                | 1752.500003     | 0.002                 |
| 40         | 1712.499997              | -0.002                | 1752.499996     | -0.002                |
| 50         | 1712.499998              | -0.001                | 1752.499996     | -0.002                |
| 60         | 1712.499996              | -0.002                | 1752.499998     | -0.001                |
| 70         | 1712.499999              | -0.001                | 1752.499998     | -0.001                |
| 80         | 1712.499997              | -0.002                | 1752.499996     | -0.002                |
| 85         | 1712.499996              | -0.002                | 1752.499996     | -0.002                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.



#### 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) |
| 12                 | 1715.000001               | 0.001                 | 1749.999997     | -0.002                |
| 10.2               | 1715.000002               | 0.001                 | 1749.999997     | -0.002                |
| 13.8               | 1715.000002               | 0.001                 | 1749.999996     | -0.002                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1715.000004               | 0.002                 | 1750.000003     | 0.002                 |
| -30        | 1715.000002               | 0.001                 | 1750.000002     | 0.001                 |
| -20        | 1715.000003               | 0.002                 | 1750.000004     | 0.002                 |
| -10        | 1715.000004               | 0.002                 | 1750.000002     | 0.001                 |
| 0          | 1715.000002               | 0.001                 | 1750.000003     | 0.002                 |
| 10         | 1714.999997               | -0.002                | 1750.000003     | 0.002                 |
| 20         | 1714.999999               | -0.001                | 1750.000004     | 0.002                 |
| 30         | 1714.999997               | -0.002                | 1750.000003     | 0.002                 |
| 40         | 1714.999999               | -0.001                | 1749.999998     | -0.001                |
| 50         | 1714.999998               | -0.001                | 1749.999998     | -0.001                |
| 60         | 1714.999997               | -0.002                | 1749.999996     | -0.002                |
| 70         | 1714.999999               | -0.001                | 1749.999996     | -0.002                |
| 80         | 1714.999998               | -0.001                | 1749.999998     | -0.001                |
| 85         | 1714.999999               | -0.001                | 1749.999996     | -0.002                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 1717.500004               | 0.002                 | 1747.499998     | -0.001                |
| 10.2               | 1717.500003               | 0.002                 | 1747.499998     | -0.001                |
| 13.8               | 1717.500002               | 0.001                 | 1747.499998     | -0.001                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1717.500003               | 0.002                 | 1747.500004     | 0.002                 |
| -30        | 1717.500002               | 0.001                 | 1747.500002     | 0.001                 |
| -20        | 1717.500004               | 0.002                 | 1747.500003     | 0.002                 |
| -10        | 1717.500002               | 0.001                 | 1747.500002     | 0.001                 |
| 0          | 1717.500001               | 0.001                 | 1747.500003     | 0.002                 |
| 10         | 1717.499999               | -0.001                | 1747.500002     | 0.001                 |
| 20         | 1717.499998               | -0.001                | 1747.500004     | 0.002                 |
| 30         | 1717.499997               | -0.002                | 1747.500002     | 0.001                 |
| 40         | 1717.499998               | -0.001                | 1747.499998     | -0.001                |
| 50         | 1717.499999               | -0.001                | 1747.499998     | -0.001                |
| 60         | 1717.499998               | -0.001                | 1747.499999     | -0.001                |
| 70         | 1717.499997               | -0.002                | 1747.499998     | -0.001                |
| 80         | 1717.499999               | -0.001                | 1747.499998     | -0.001                |
| 85         | 1717.499999               | -0.001                | 1747.499996     | -0.002                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 1720.000002               | 0.001                 | 1744.999998     | -0.001                |
| 10.2               | 1720.000002               | 0.001                 | 1744.999997     | -0.002                |
| 13.8               | 1720.000003               | 0.002                 | 1744.999996     | -0.002                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 1720.000004               | 0.002                 | 1745.000002     | 0.001                 |
| -30        | 1720.000001               | 0.001                 | 1745.000003     | 0.002                 |
| -20        | 1720.000003               | 0.002                 | 1745.000002     | 0.001                 |
| -10        | 1720.000003               | 0.002                 | 1745.000002     | 0.001                 |
| 0          | 1720.000002               | 0.001                 | 1745.000002     | 0.001                 |
| 10         | 1719.999997               | -0.002                | 1745.000001     | 0.001                 |
| 20         | 1719.999999               | -0.001                | 1745.000001     | 0.001                 |
| 30         | 1719.999999               | -0.001                | 1745.000002     | 0.001                 |
| 40         | 1719.999998               | -0.001                | 1744.999998     | -0.001                |
| 50         | 1719.999999               | -0.001                | 1744.999998     | -0.001                |
| 60         | 1719.999997               | -0.002                | 1744.999996     | -0.002                |
| 70         | 1719.999998               | -0.001                | 1744.999997     | -0.002                |
| 80         | 1719.999998               | -0.001                | 1744.999996     | -0.002                |
| 85         | 1719.999997               | -0.002                | 1744.999999     | -0.001                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 699.700003                 | 0.004                 | 715.299996      | -0.005                |
| 10.2               | 699.700003                 | 0.004                 | 715.299998      | -0.002                |
| 13.8               | 699.700001                 | 0.001                 | 715.299997      | -0.005                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 699.700003                 | 0.004                 | 715.300003      | 0.004                 |
| -30        | 699.700001                 | 0.002                 | 715.300001      | 0.001                 |
| -20        | 699.700002                 | 0.002                 | 715.300004      | 0.005                 |
| -10        | 699.700004                 | 0.005                 | 715.300004      | 0.005                 |
| 0          | 699.700001                 | 0.002                 | 715.300002      | 0.003                 |
| 10         | 699.699998                 | -0.003                | 715.300001      | 0.002                 |
| 20         | 699.699996                 | -0.006                | 715.300003      | 0.004                 |
| 30         | 699.699999                 | -0.002                | 715.300002      | 0.002                 |
| 40         | 699.699999                 | -0.002                | 715.299997      | -0.004                |
| 50         | 699.699999                 | -0.001                | 715.299999      | -0.002                |
| 60         | 699.699997                 | -0.005                | 715.299998      | -0.003                |
| 70         | 699.699999                 | -0.002                | 715.299998      | -0.003                |
| 80         | 699.699997                 | -0.004                | 715.299997      | -0.004                |
| 85         | 699.699998                 | -0.003                | 715.299999      | -0.002                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 700.500001               | 0.002                 | 714.499998      | -0.003                |
| 10.2               | 700.500003               | 0.004                 | 714.499998      | -0.003                |
| 13.8               | 700.500001               | 0.002                 | 714.499999      | -0.002                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 700.500004               | 0.005                 | 714.500003      | 0.004                 |
| -30        | 700.500003               | 0.004                 | 714.500003      | 0.004                 |
| -20        | 700.500004               | 0.005                 | 714.500002      | 0.003                 |
| -10        | 700.500003               | 0.004                 | 714.500002      | 0.003                 |
| 0          | 700.500004               | 0.005                 | 714.500002      | 0.003                 |
| 10         | 700.499997               | -0.005                | 714.500002      | 0.003                 |
| 20         | 700.499998               | -0.003                | 714.500002      | 0.002                 |
| 30         | 700.499997               | -0.004                | 714.500001      | 0.002                 |
| 40         | 700.499996               | -0.005                | 714.499996      | -0.005                |
| 50         | 700.499997               | -0.004                | 714.499997      | -0.004                |
| 60         | 700.499997               | -0.004                | 714.499997      | -0.004                |
| 70         | 700.499998               | -0.003                | 714.499998      | -0.002                |
| 80         | 700.499998               | -0.003                | 714.499997      | -0.004                |
| 85         | 700.499999               | -0.002                | 714.499997      | -0.005                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 701.500002               | 0.002                 | 713.499998      | -0.003                |
| 10.2               | 701.500002               | 0.002                 | 713.499999      | -0.002                |
| 13.8               | 701.500001               | 0.002                 | 713.499998      | -0.003                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 701.500004               | 0.006                 | 713.500004      | 0.006                 |
| -30        | 701.500004               | 0.006                 | 713.500003      | 0.004                 |
| -20        | 701.500003               | 0.005                 | 713.500004      | 0.005                 |
| -10        | 701.500004               | 0.005                 | 713.500002      | 0.002                 |
| 0          | 701.500004               | 0.005                 | 713.500002      | 0.003                 |
| 10         | 701.499999               | -0.002                | 713.500003      | 0.005                 |
| 20         | 701.499997               | -0.004                | 713.500001      | 0.002                 |
| 30         | 701.499996               | -0.005                | 713.500002      | 0.003                 |
| 40         | 701.499999               | -0.002                | 713.499997      | -0.004                |
| 50         | 701.499998               | -0.003                | 713.499997      | -0.004                |
| 60         | 701.499997               | -0.005                | 713.499999      | -0.002                |
| 70         | 701.499998               | -0.003                | 713.499997      | -0.004                |
| 80         | 701.499998               | -0.003                | 713.499998      | -0.002                |
| 85         | 701.499997               | -0.005                | 713.499997      | -0.004                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 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) |
| 12                 | 704.000001                | 0.002                 | 710.999997      | -0.004                |
| 10.2               | 704.000003                | 0.004                 | 710.999997      | -0.005                |
| 13.8               | 704.000003                | 0.004                 | 710.999997      | -0.005                |

**Note:** The applicant defined the normal working voltage is from 10.2 Vdc to 13.8 Vdc.

#### 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) |
| -40        | 704.000002                | 0.003                 | 711.000001      | 0.002                 |
| -30        | 704.000001                | 0.002                 | 711.000001      | 0.002                 |
| -20        | 704.000002                | 0.002                 | 711.000001      | 0.002                 |
| -10        | 704.000004                | 0.006                 | 711.000003      | 0.005                 |
| 0          | 704.000004                | 0.005                 | 711.000001      | 0.002                 |
| 10         | 703.999997                | -0.005                | 711.000003      | 0.005                 |
| 20         | 703.999999                | -0.001                | 711.000003      | 0.005                 |
| 30         | 703.999998                | -0.003                | 711.000001      | 0.002                 |
| 40         | 703.999997                | -0.005                | 710.999997      | -0.004                |
| 50         | 703.999998                | -0.002                | 710.999997      | -0.004                |
| 60         | 703.999996                | -0.005                | 710.999997      | -0.004                |
| 70         | 703.999998                | -0.004                | 710.999997      | -0.004                |
| 80         | 703.999997                | -0.005                | 710.999998      | -0.003                |
| 85         | 703.999999                | -0.002                | 710.999998      | -0.004                |

**Note:**

1. The applicant declared that the normal operating temperature of the EUT is from -40°C to 85°C.
2. The EUT would shut down automatically as below -40°C.

#### 4.4 Occupied Bandwidth Measurement

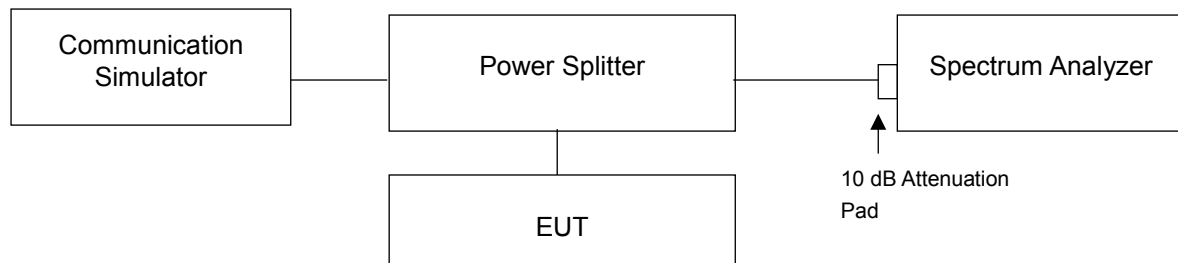
##### 4.4.1 Limits of Occupied Bandwidth Measurement

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 conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

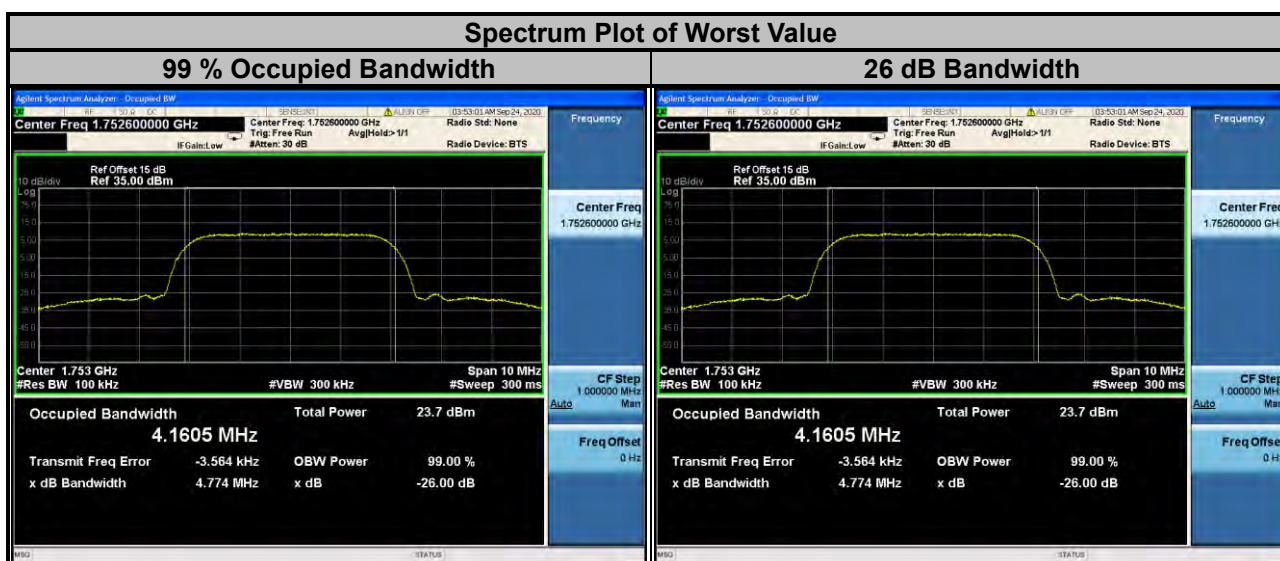
##### 4.4.3 Test Setup



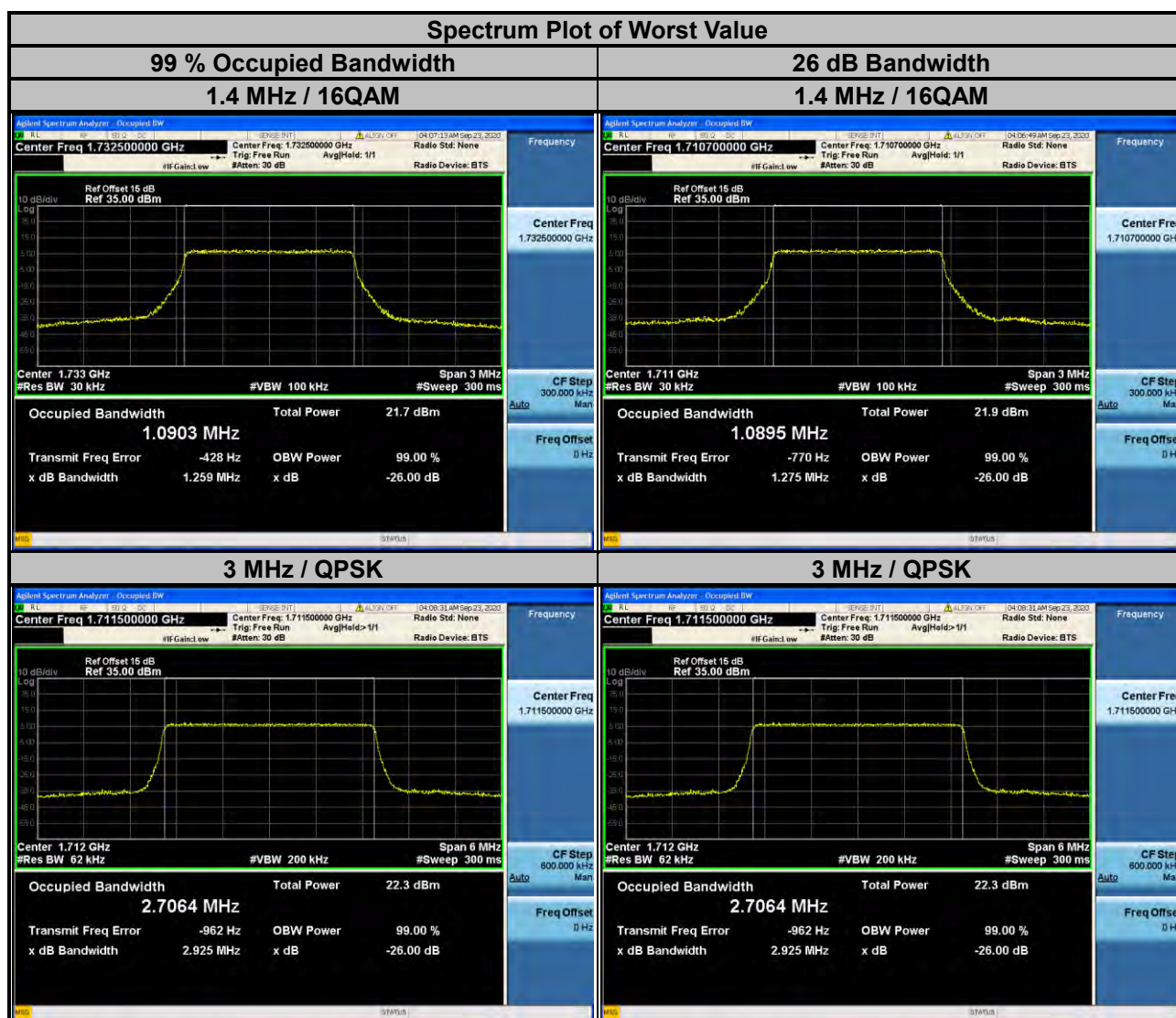


#### 4.4.4 Test Result

| WCDMA   |                 |                               |                       |
|---------|-----------------|-------------------------------|-----------------------|
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | 26 dB Bandwidth (MHz) |
| 1312    | 1712.4          | 4.1513                        | 4.753                 |
| 1413    | 1732.6          | 4.1412                        | 4.745                 |
| 1513    | 1752.6          | 4.1605                        | 4.774                 |



| LTE Band 4                 |                 |                               |        |                       |       |
|----------------------------|-----------------|-------------------------------|--------|-----------------------|-------|
| Channel Bandwidth: 1.4 MHz |                 |                               |        |                       |       |
| Channel                    | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                            |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 19957                      | 1710.7          | 1.0897                        | 1.0895 | 1.260                 | 1.275 |
| 20175                      | 1732.5          | 1.0880                        | 1.0903 | 1.269                 | 1.259 |
| 20393                      | 1754.3          | 1.0876                        | 1.0894 | 1.272                 | 1.275 |
| Channel Bandwidth: 3 MHz   |                 |                               |        |                       |       |
| Channel                    | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                            |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 19965                      | 1711.5          | 2.7064                        | 2.6976 | 2.925                 | 2.916 |
| 20175                      | 1732.5          | 2.7029                        | 2.7001 | 2.913                 | 2.914 |
| 20385                      | 1753.5          | 2.7016                        | 2.7027 | 2.925                 | 2.922 |

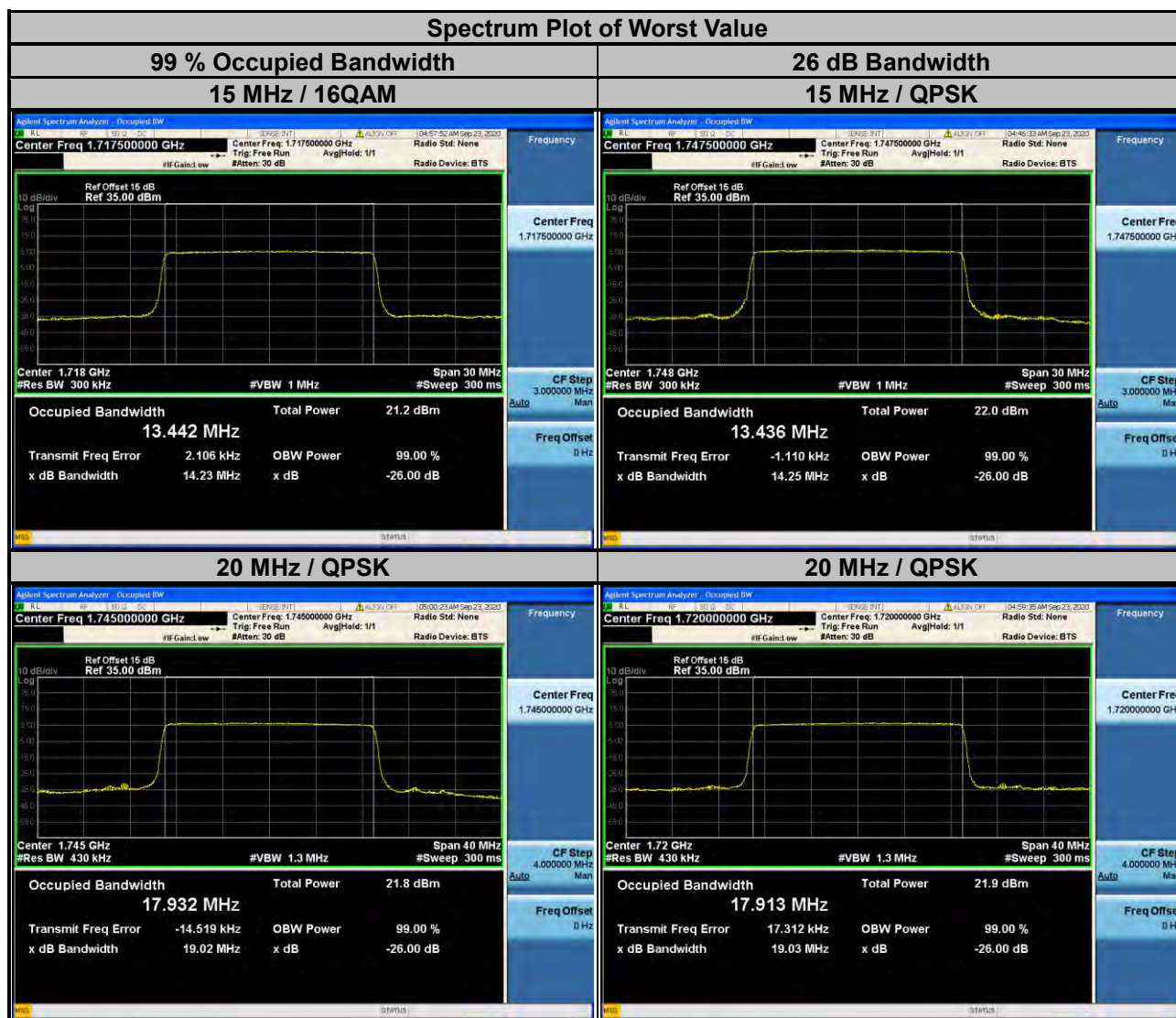


| LTE Band 4                |                 |                               |        |                       |       |
|---------------------------|-----------------|-------------------------------|--------|-----------------------|-------|
| Channel Bandwidth: 5 MHz  |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 19975                     | 1712.5          | 4.4944                        | 4.4949 | 4.848                 | 4.823 |
| 20175                     | 1732.5          | 4.4886                        | 4.4917 | 4.820                 | 4.866 |
| 20375                     | 1752.5          | 4.4956                        | 4.4948 | 4.864                 | 4.861 |
| Channel Bandwidth: 10 MHz |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 20000                     | 1715.0          | 8.9558                        | 8.9570 | 9.531                 | 9.516 |
| 20175                     | 1732.5          | 8.9591                        | 8.9591 | 9.517                 | 9.549 |
| 20350                     | 1750.0          | 8.9551                        | 8.9595 | 9.561                 | 9.517 |





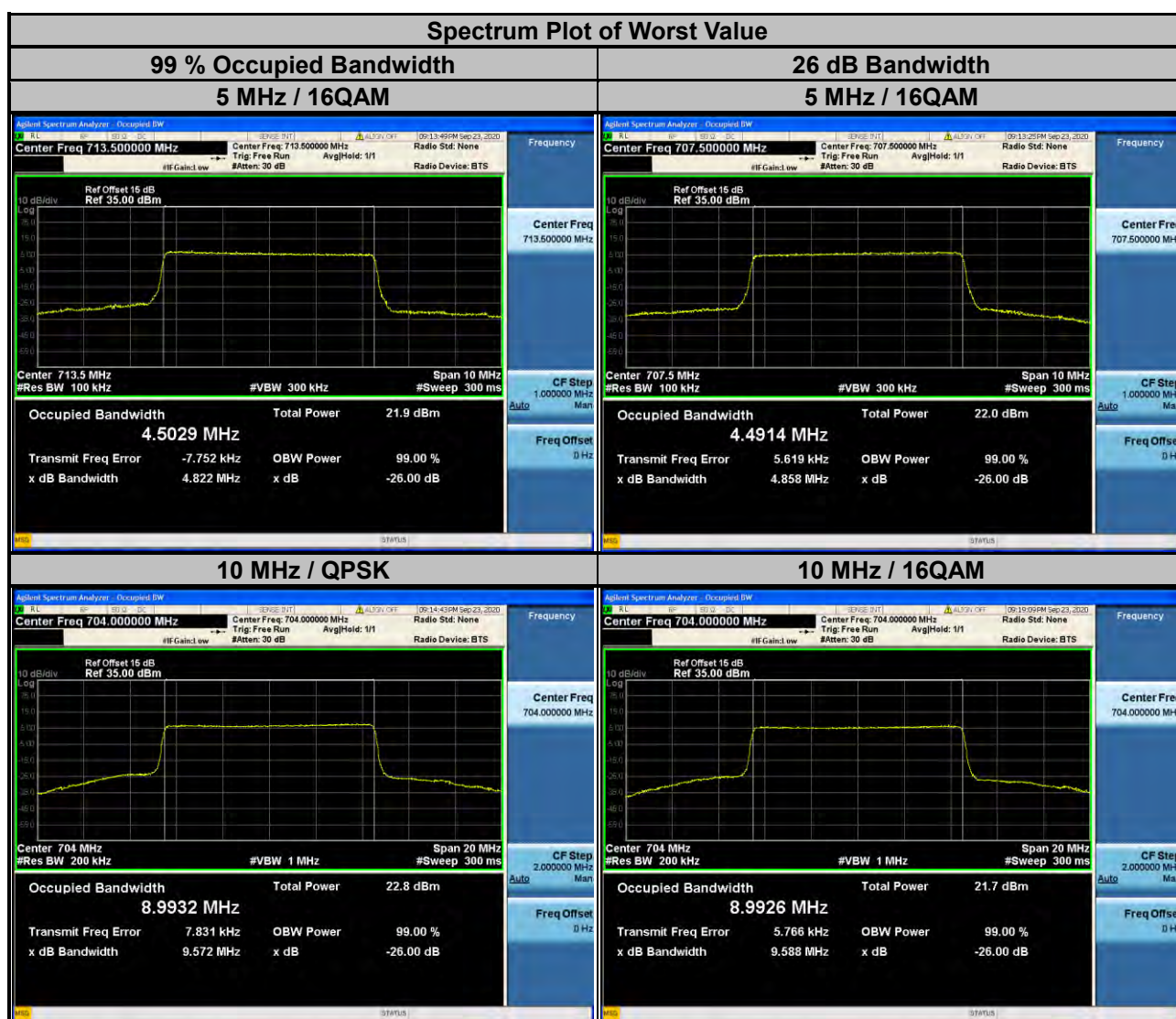
| LTE Band 4                |                 |                               |        |                       |       |
|---------------------------|-----------------|-------------------------------|--------|-----------------------|-------|
| Channel Bandwidth: 15 MHz |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 20025                     | 1717.5          | 13.436                        | 13.442 | 14.22                 | 14.23 |
| 20175                     | 1732.5          | 13.412                        | 13.408 | 14.22                 | 14.22 |
| 20325                     | 1747.5          | 13.436                        | 13.434 | 14.25                 | 14.24 |
| Channel Bandwidth: 20 MHz |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 20050                     | 1720.0          | 17.913                        | 17.911 | 19.03                 | 19.00 |
| 20175                     | 1732.5          | 17.874                        | 17.874 | 18.98                 | 18.98 |
| 20300                     | 1745.0          | 17.932                        | 17.916 | 19.02                 | 19.00 |



| LTE Band 12                |                 |                               |        |                       |       |
|----------------------------|-----------------|-------------------------------|--------|-----------------------|-------|
| Channel Bandwidth: 1.4 MHz |                 |                               |        |                       |       |
| Channel                    | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                            |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 23017                      | 699.7           | 1.0878                        | 1.0982 | 1.247                 | 1.170 |
| 23095                      | 707.5           | 1.0909                        | 1.0897 | 1.248                 | 1.259 |
| 23173                      | 715.3           | 1.0903                        | 1.0914 | 1.255                 | 1.271 |
| Channel Bandwidth: 3 MHz   |                 |                               |        |                       |       |
| Channel                    | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                            |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 23025                      | 700.5           | 2.7001                        | 2.7003 | 2.981                 | 2.929 |
| 23095                      | 707.5           | 2.6997                        | 2.7022 | 2.908                 | 2.919 |
| 23165                      | 714.5           | 2.7059                        | 2.7060 | 2.921                 | 2.924 |



| LTE Band 12               |                 |                               |        |                       |       |
|---------------------------|-----------------|-------------------------------|--------|-----------------------|-------|
| Channel Bandwidth: 5 MHz  |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 23035                     | 701.5           | 4.4943                        | 4.4929 | 4.835                 | 4.821 |
| 23095                     | 707.5           | 4.4903                        | 4.4914 | 4.801                 | 4.858 |
| 23155                     | 713.5           | 4.5007                        | 4.5029 | 4.850                 | 4.822 |
| Channel Bandwidth: 10 MHz |                 |                               |        |                       |       |
| Channel                   | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) |        | 26 dB Bandwidth (MHz) |       |
|                           |                 | QPSK                          | 16QAM  | QPSK                  | 16QAM |
| 23060                     | 704.0           | 8.9932                        | 8.9926 | 9.572                 | 9.588 |
| 23095                     | 707.5           | 8.9429                        | 8.9377 | 9.505                 | 9.493 |
| 23130                     | 711.0           | 8.9293                        | 8.9252 | 9.470                 | 9.502 |





## 4.5 Band Edge Measurement

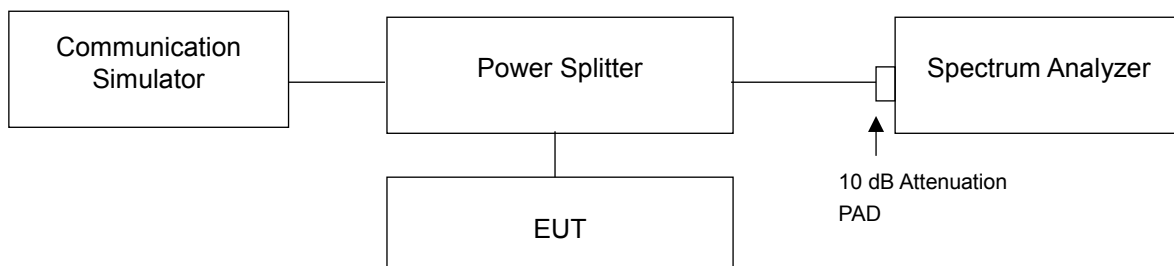
### 4.5.1 Limits of Band Edge Measurement

For operations in the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB.

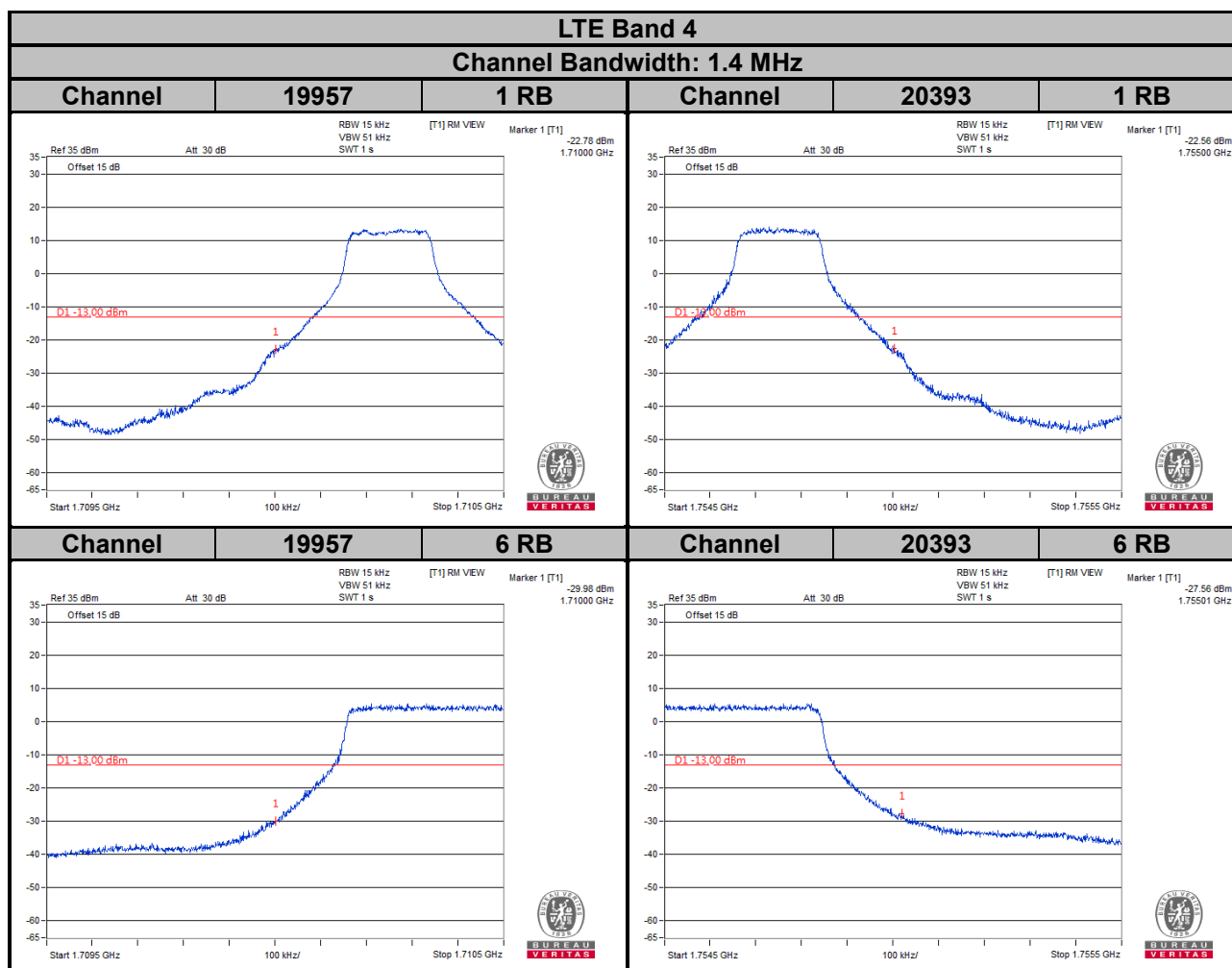
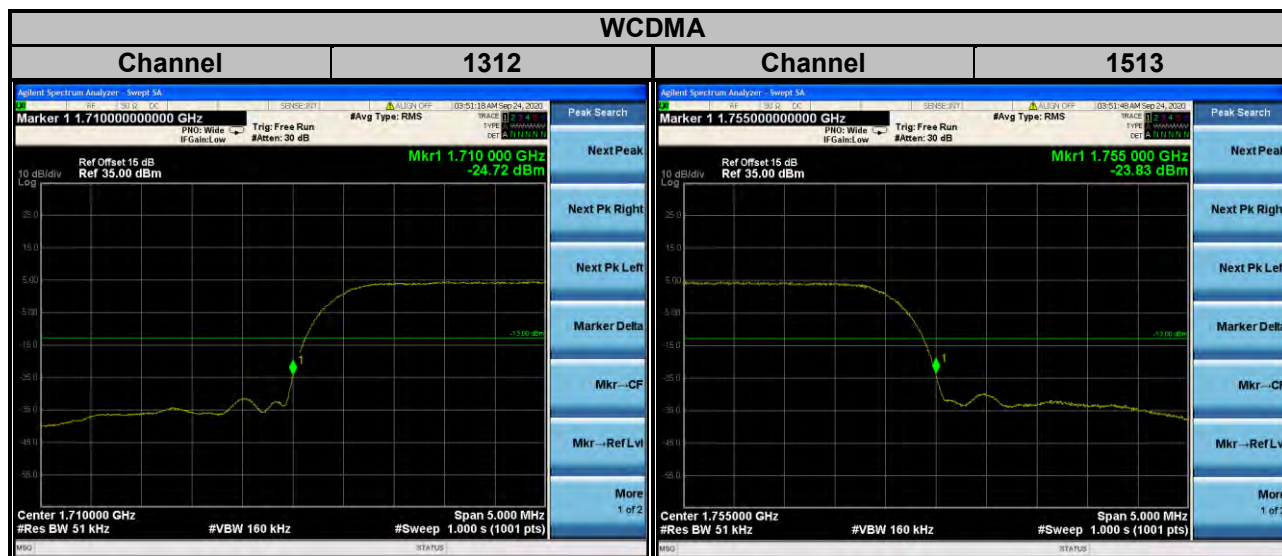
### 4.5.2 Test Setup



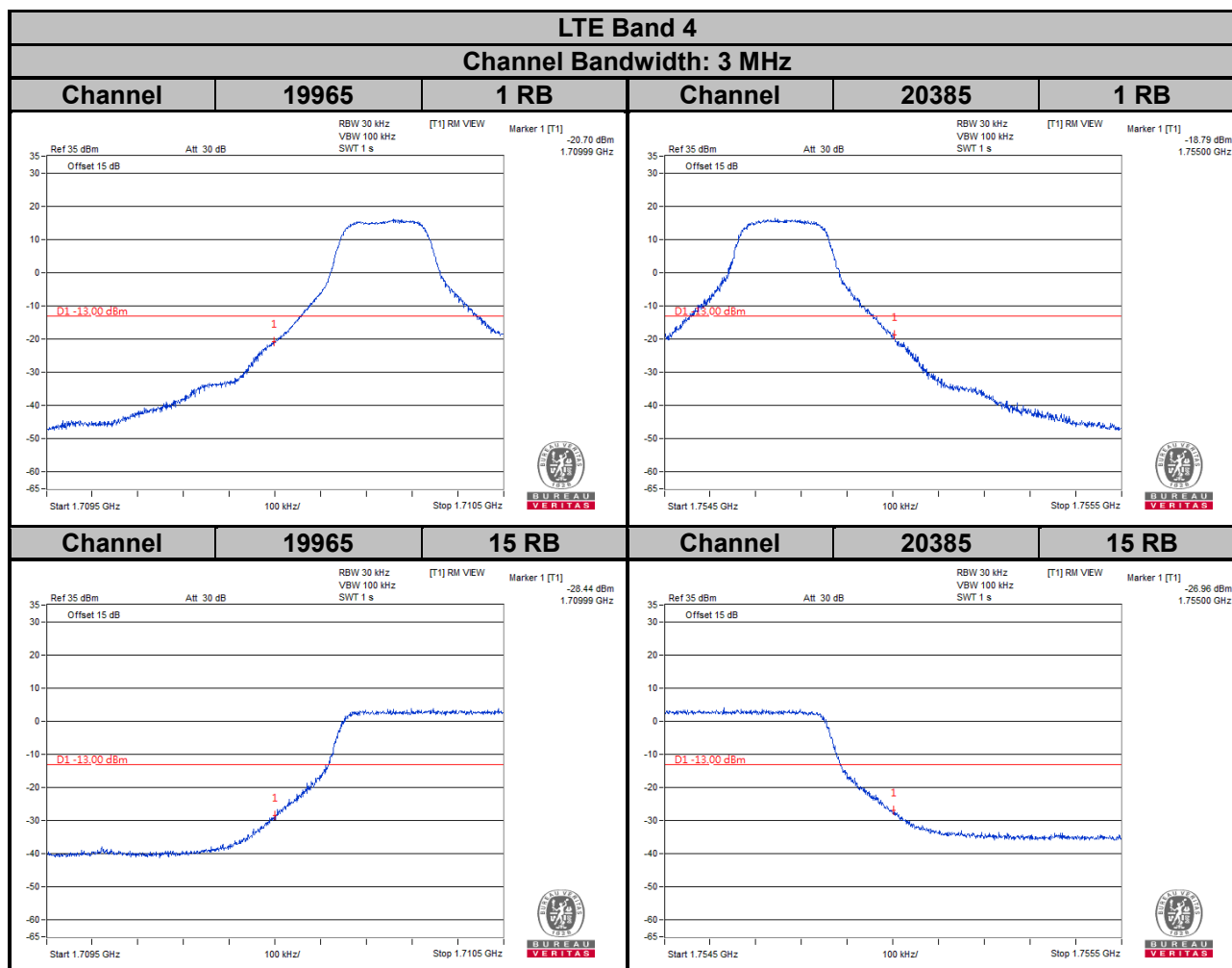
### 4.5.3 Test Procedures

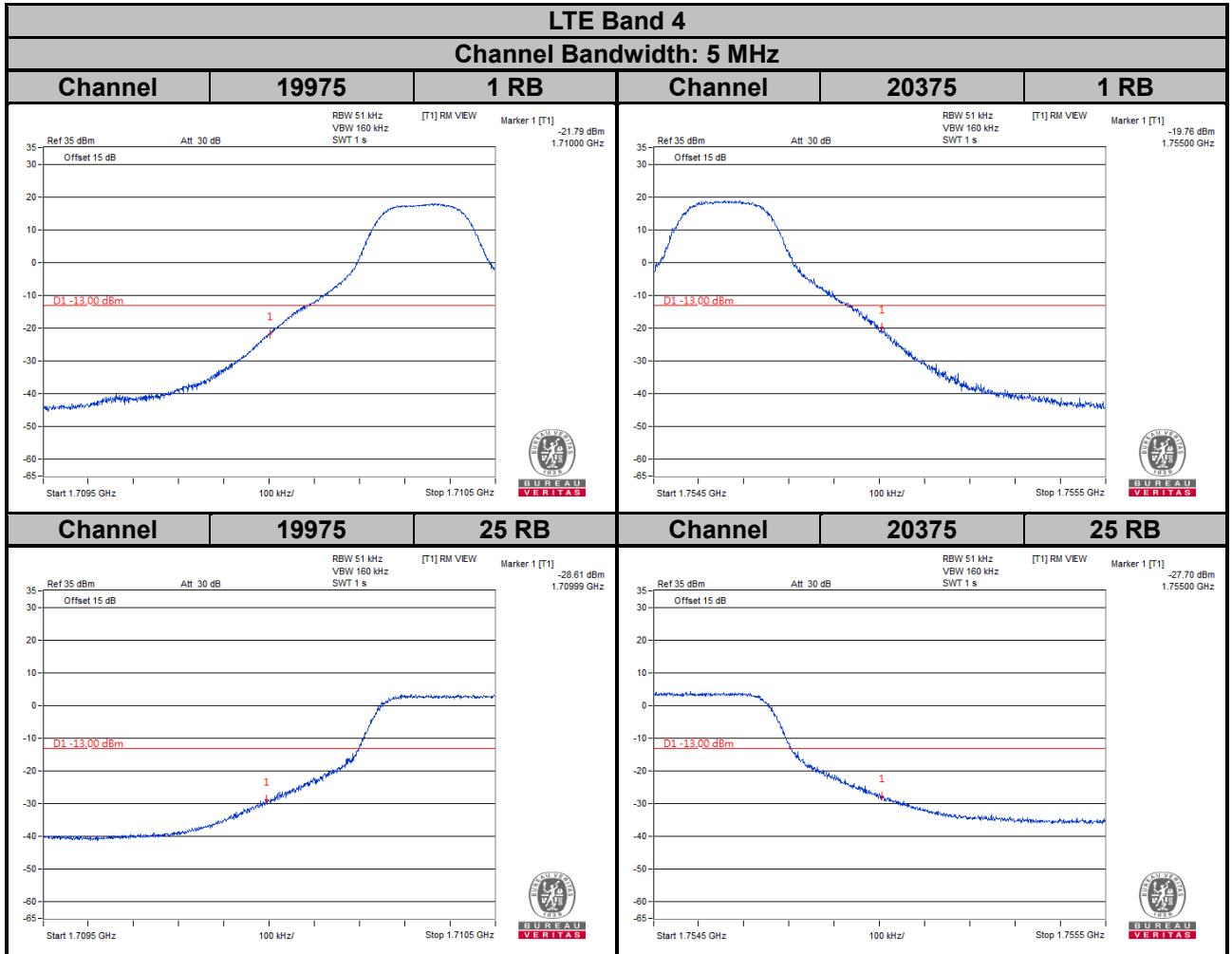
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 160 kHz (WCDMA).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 15 kHz or 30 kHz and VB of the spectrum is 51 kHz or 100 kHz (LTE Bandwidth 1.4 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 3 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 62 kHz and VB of the spectrum is 200 kHz (LTE Bandwidth 5 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 300 kHz (LTE Bandwidth 10 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 150 kHz and VB of the spectrum is 470 kHz (LTE Bandwidth 15 MHz).
- The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 200 kHz and VB of the spectrum is 1 MHz (LTE Bandwidth 20 MHz).
- Record the max. trace plot into the test report.

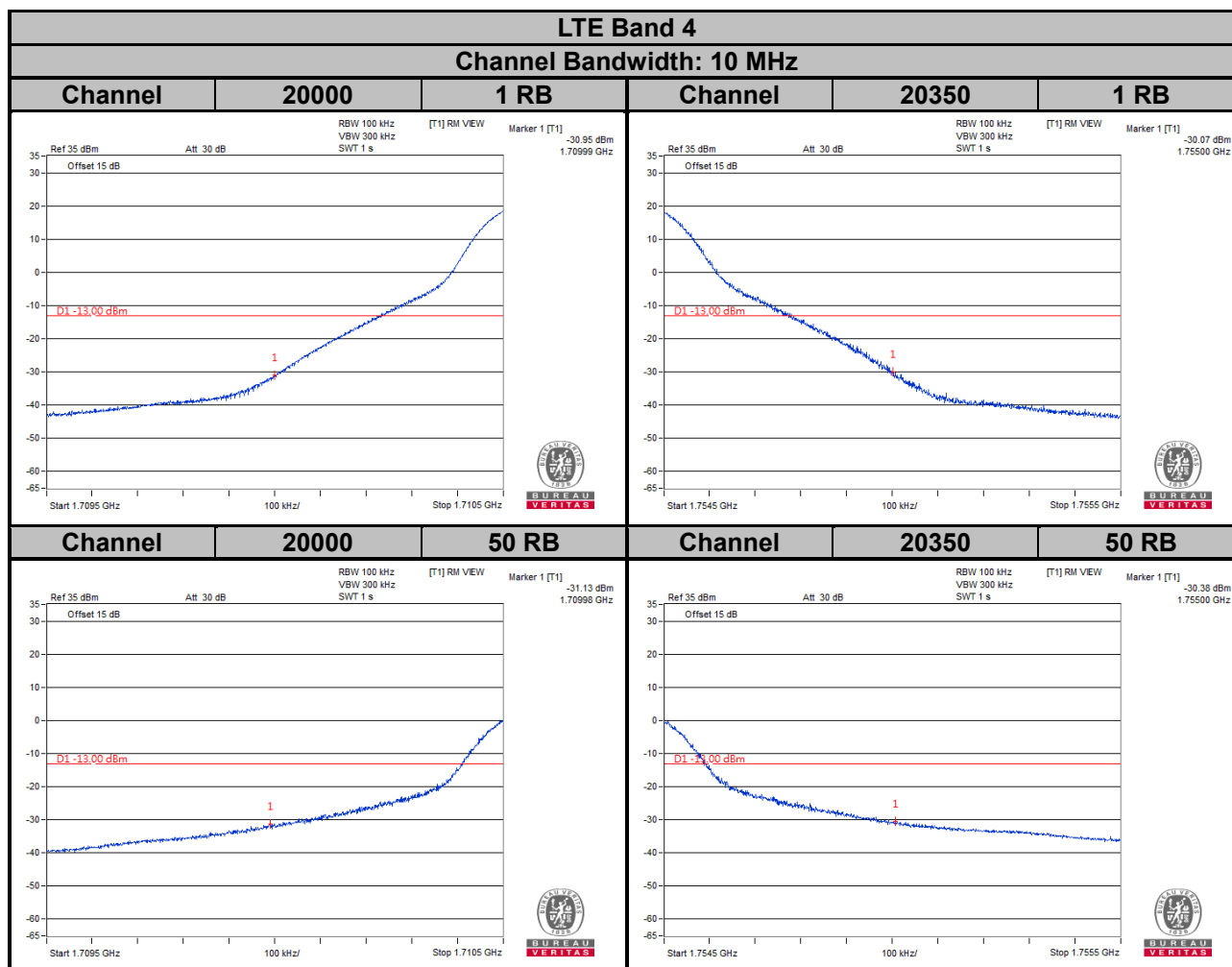
## 4.5.4 Test Results

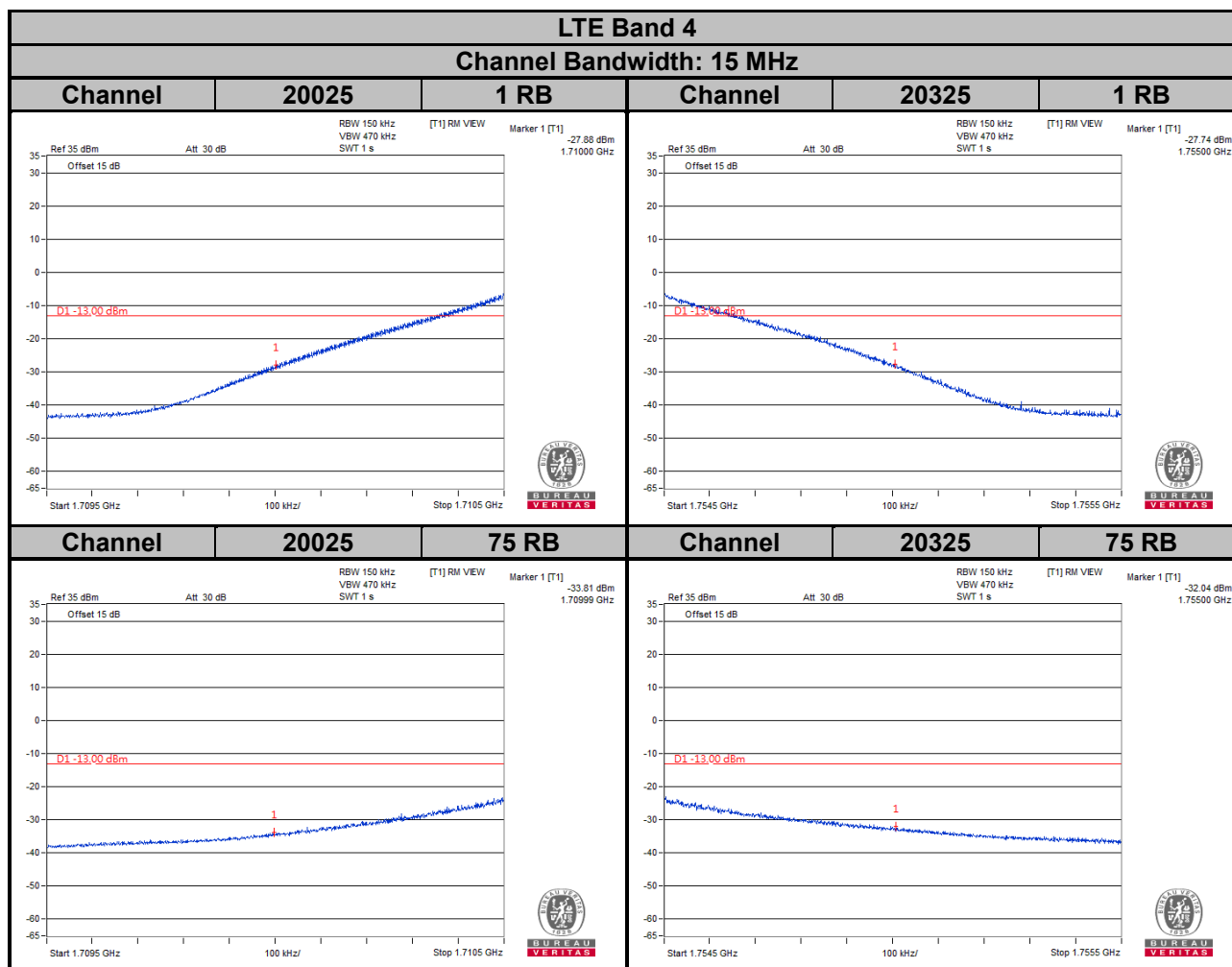


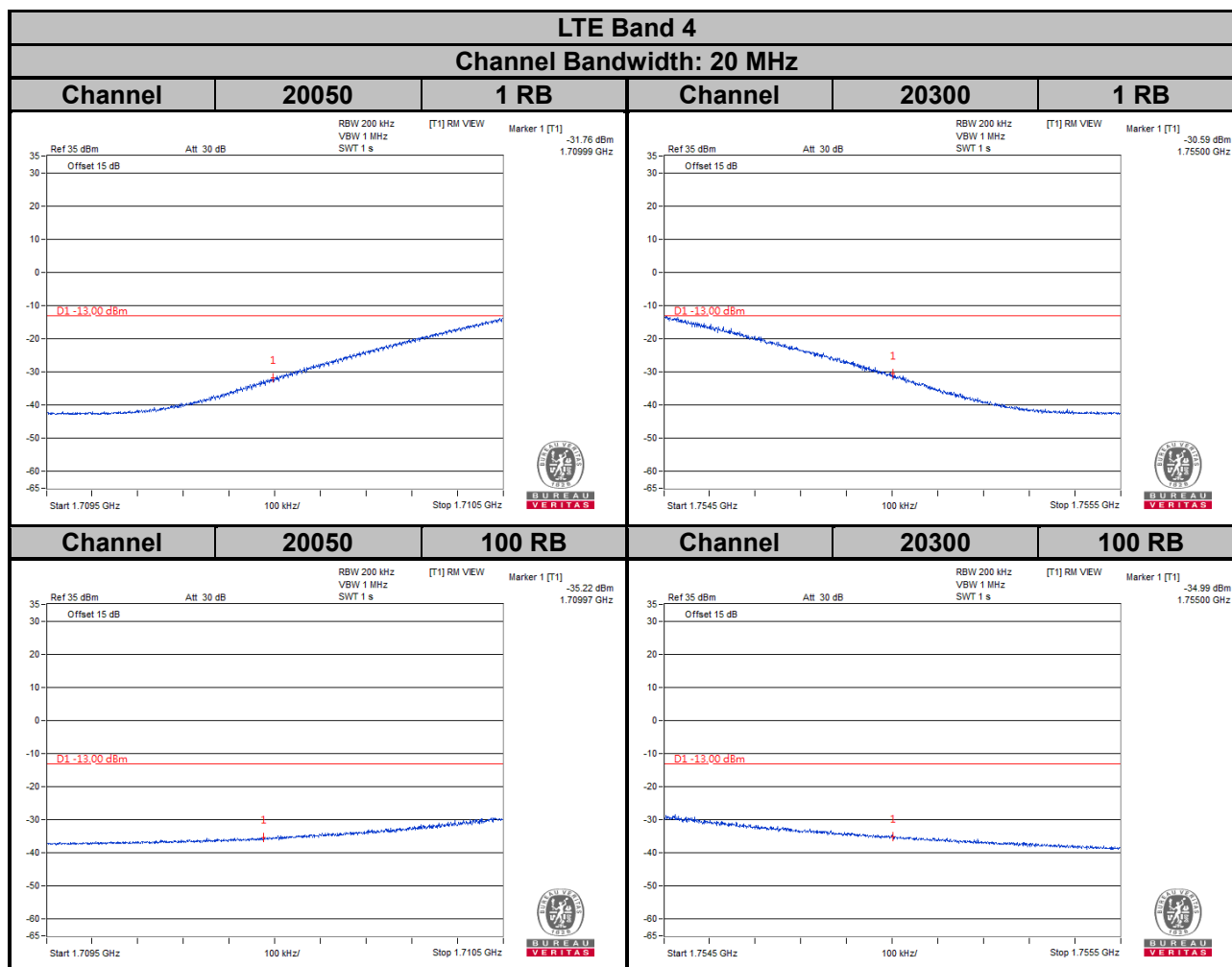


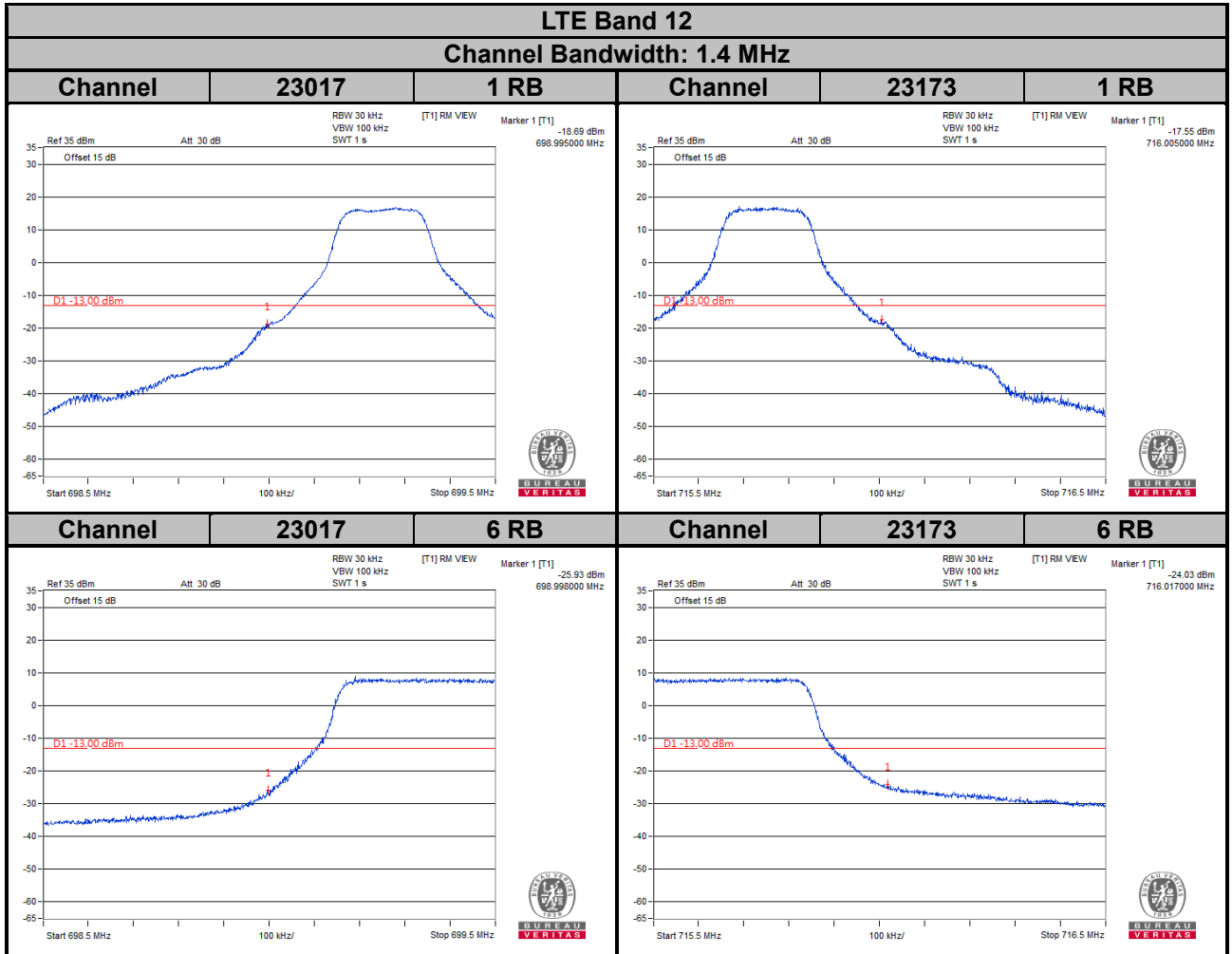


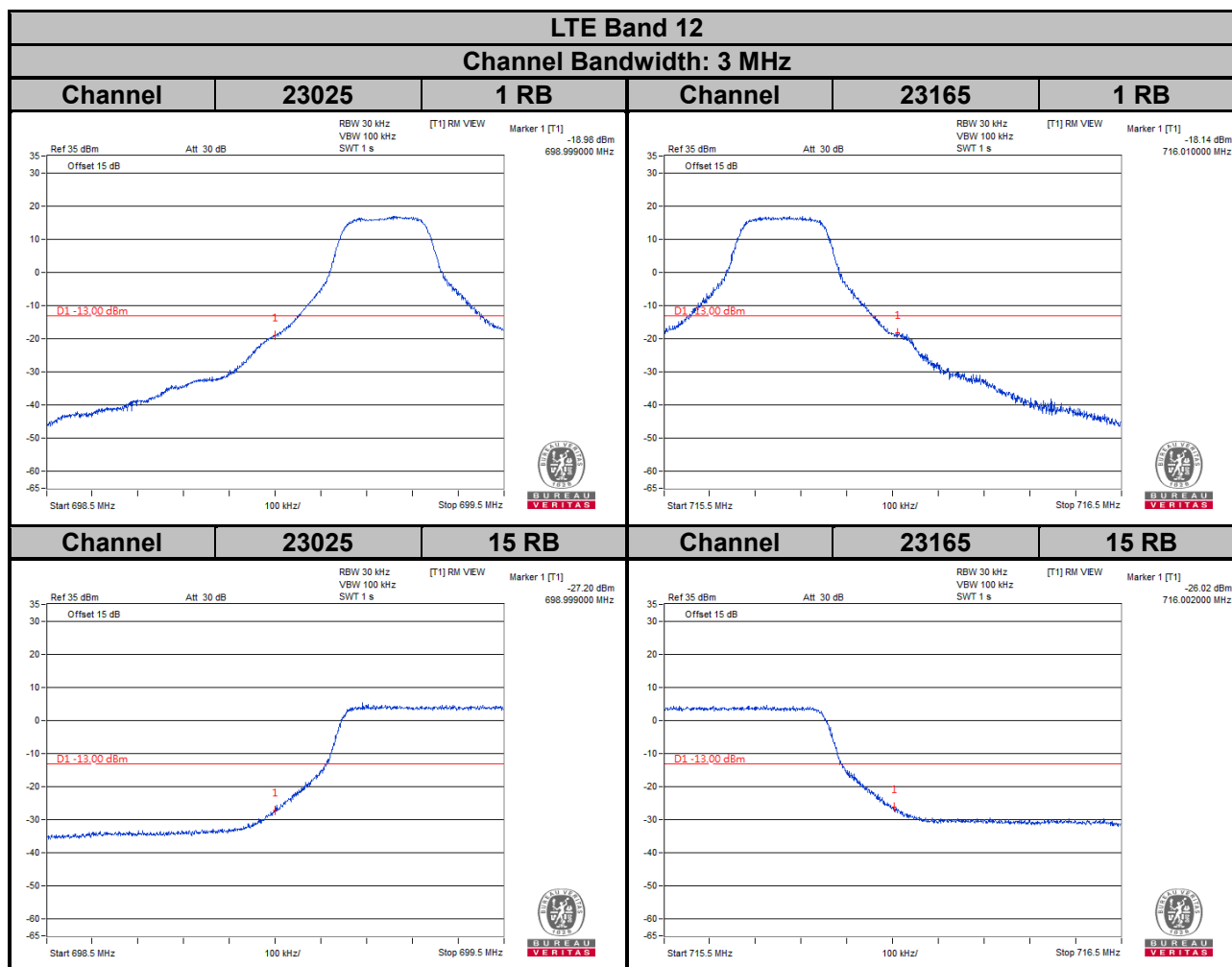


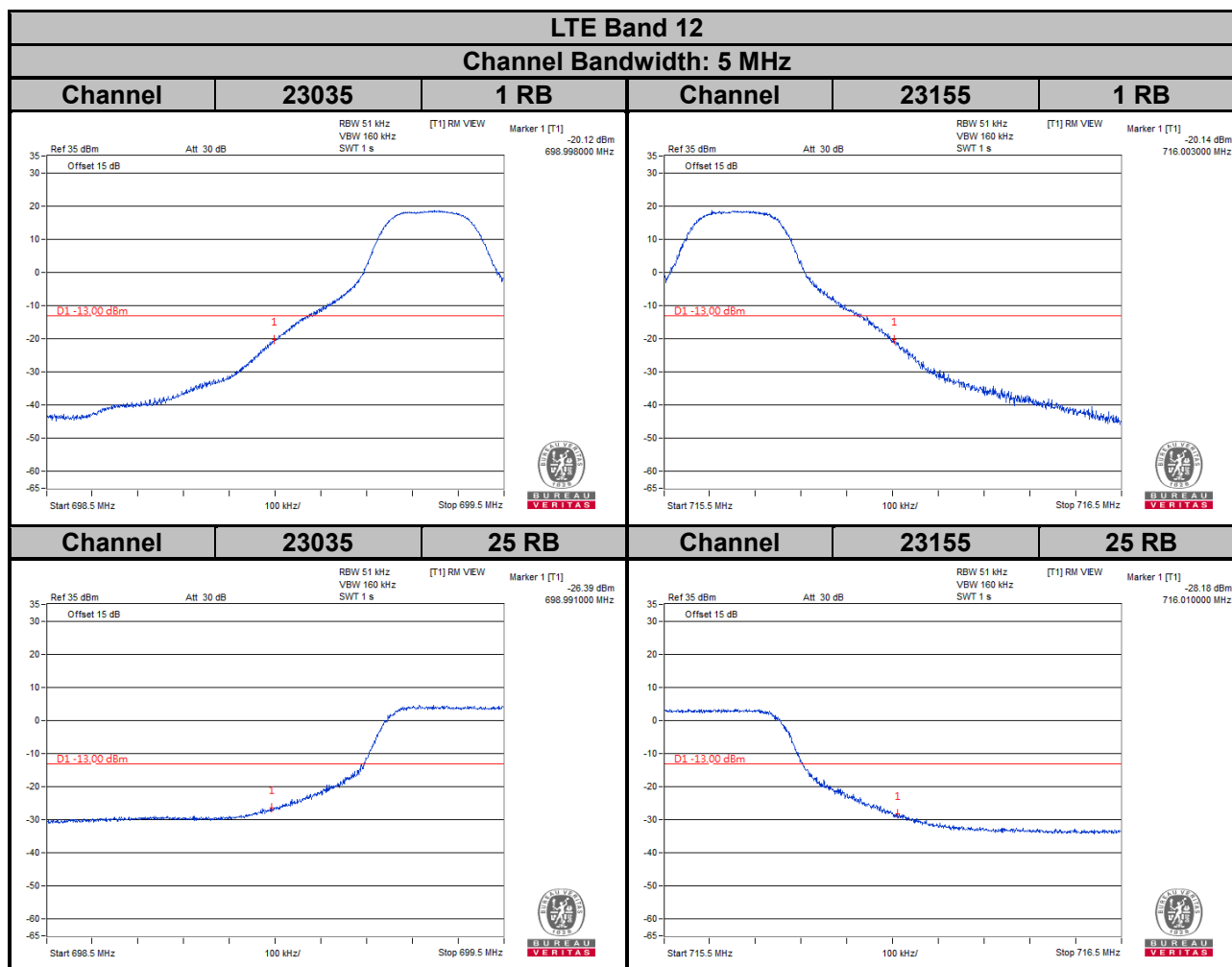




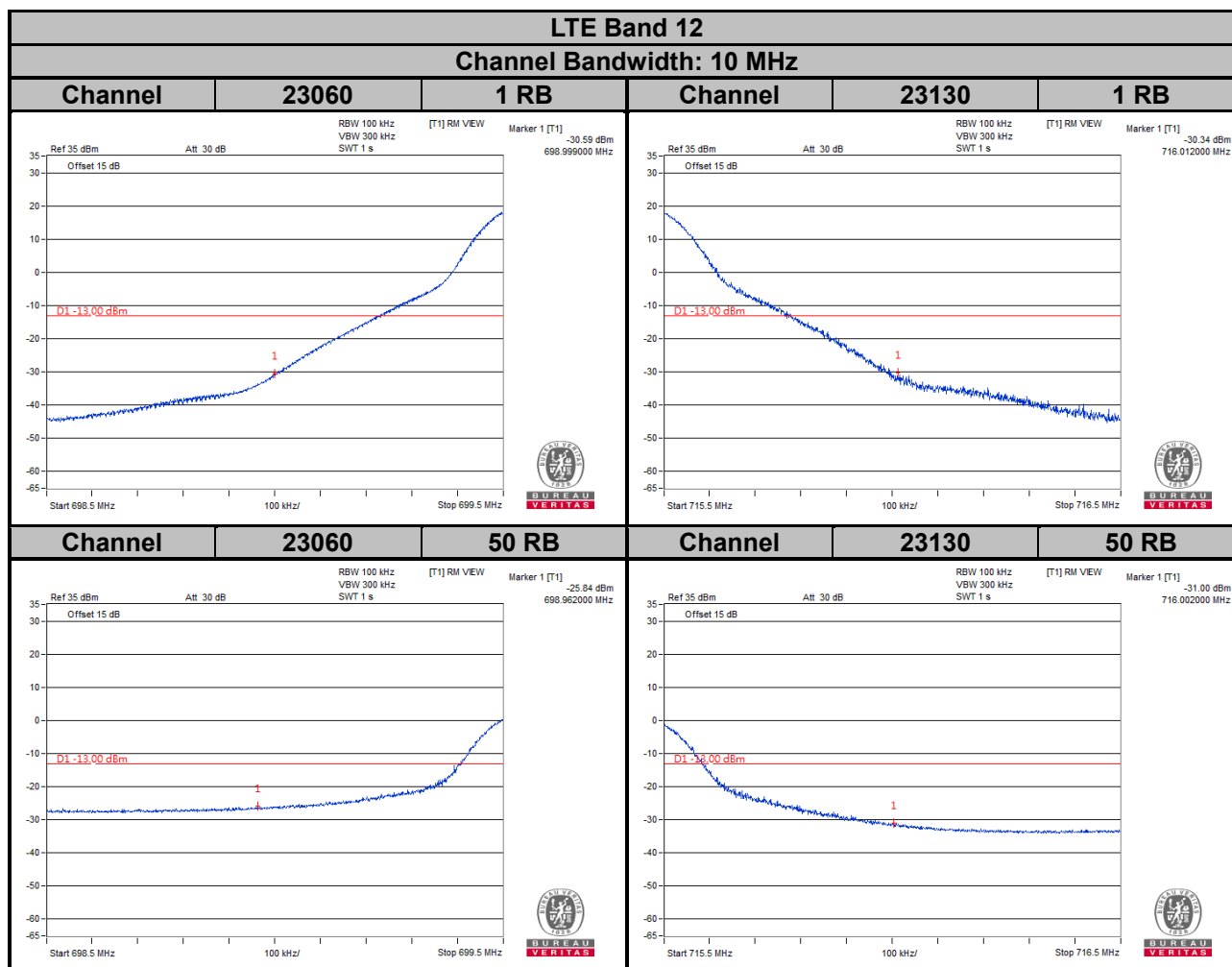






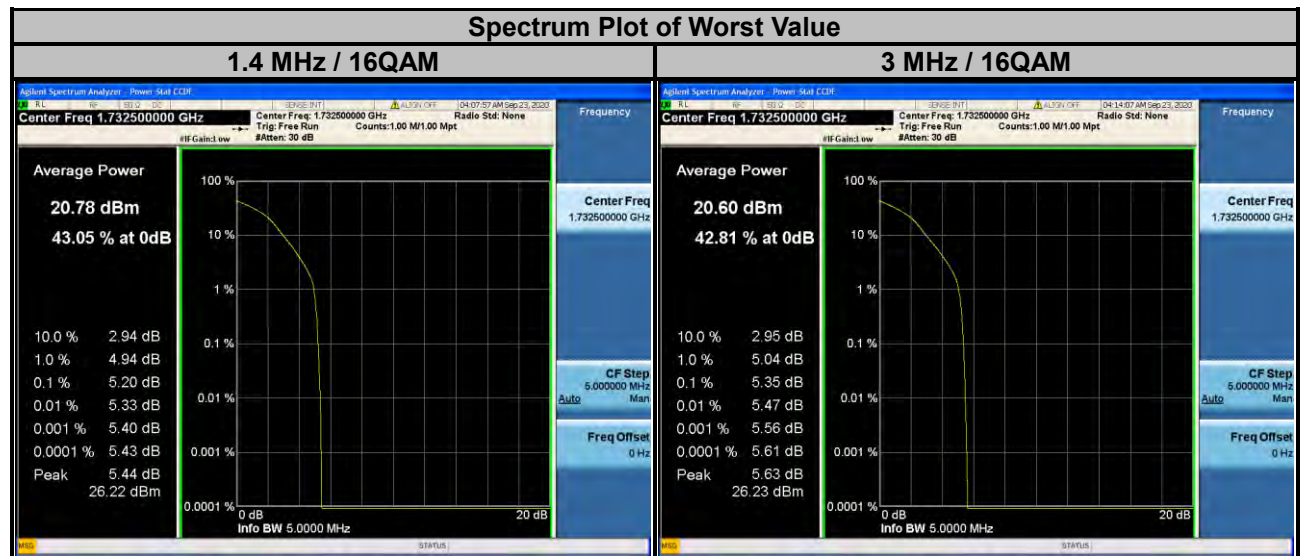




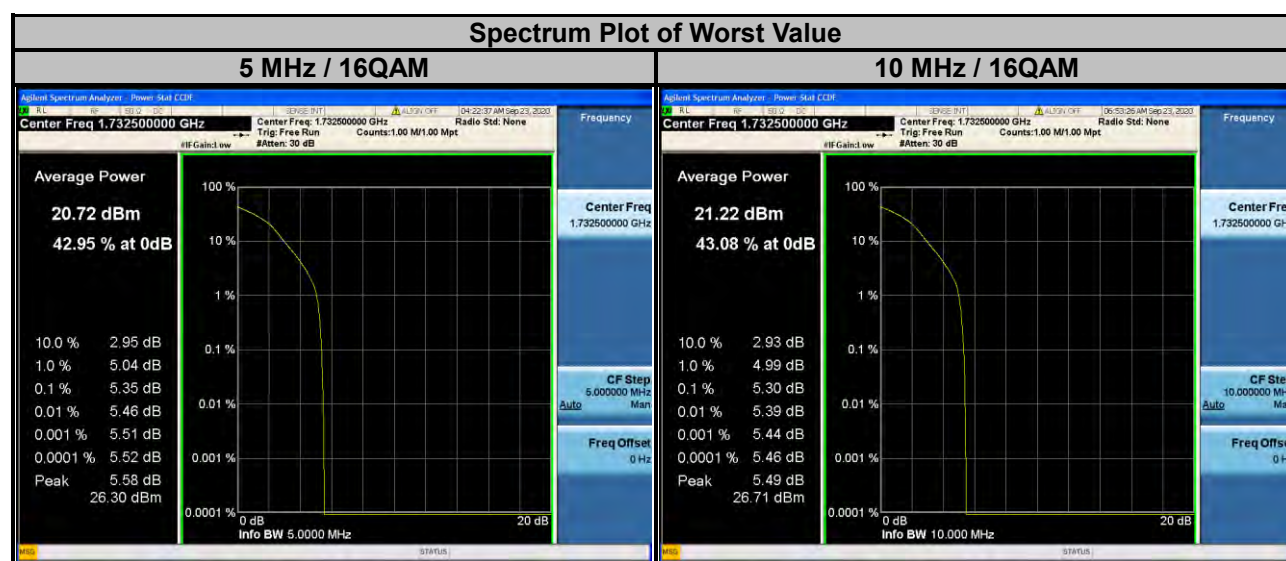




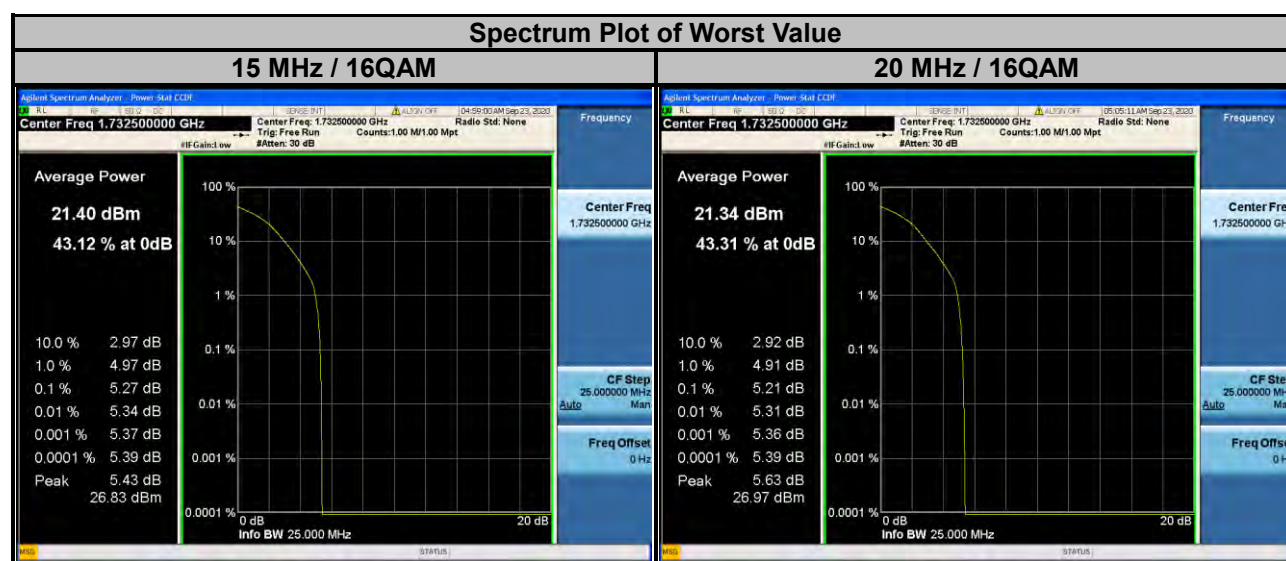
| LTE Band 4                 |                 |                            |       |                          |                 |                            |       |
|----------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 1.4 MHz |                 |                            |       | Channel Bandwidth: 3 MHz |                 |                            |       |
| Channel                    | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                            |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 19957                      | 1710.7          | 3.94                       | 4.91  | 19965                    | 1711.5          | 4.00                       | 4.91  |
| 20175                      | 1732.5          | 4.38                       | 5.20  | 20175                    | 1732.5          | 4.44                       | 5.35  |
| 20393                      | 1754.3          | 3.69                       | 4.68  | 20385                    | 1753.5          | 3.93                       | 4.86  |



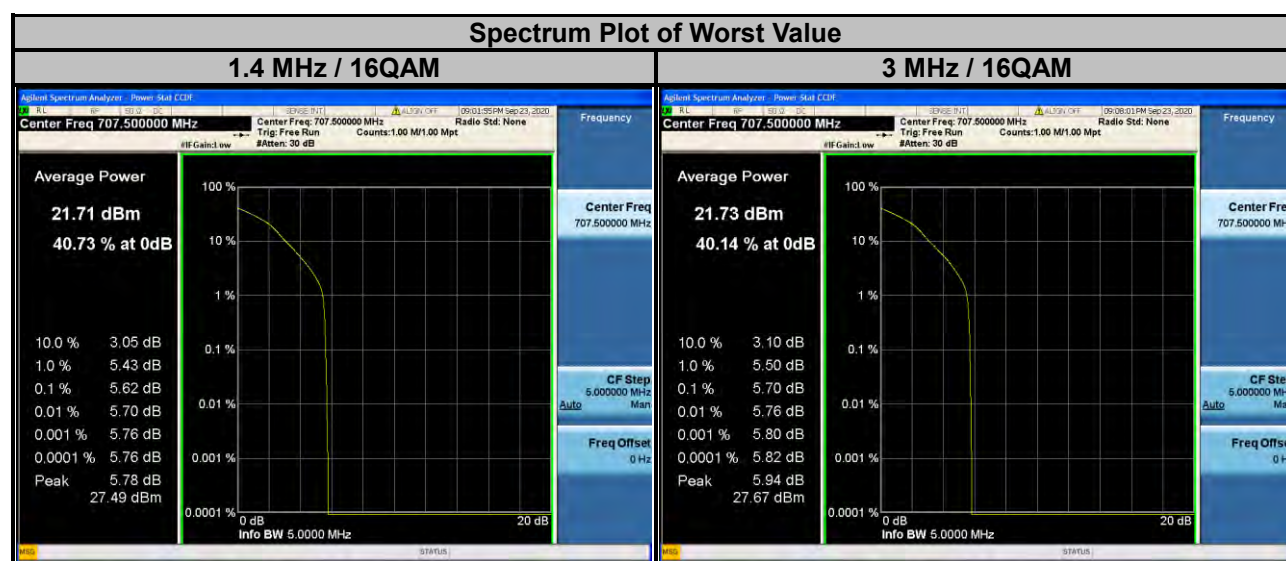
| LTE Band 4               |                 |                            |       |                           |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|---------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 5 MHz |                 |                            |       | Channel Bandwidth: 10 MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                           |                 | QPSK                       | 16QAM |
| 19975                    | 1712.5          | 4.00                       | 4.92  | 20000                     | 1715.0          | 3.87                       | 4.73  |
| 20175                    | 1732.5          | 4.44                       | 5.35  | 20175                     | 1732.5          | 5.16                       | 5.30  |
| 20375                    | 1752.5          | 4.02                       | 4.83  | 20350                     | 1750.0          | 3.87                       | 4.83  |



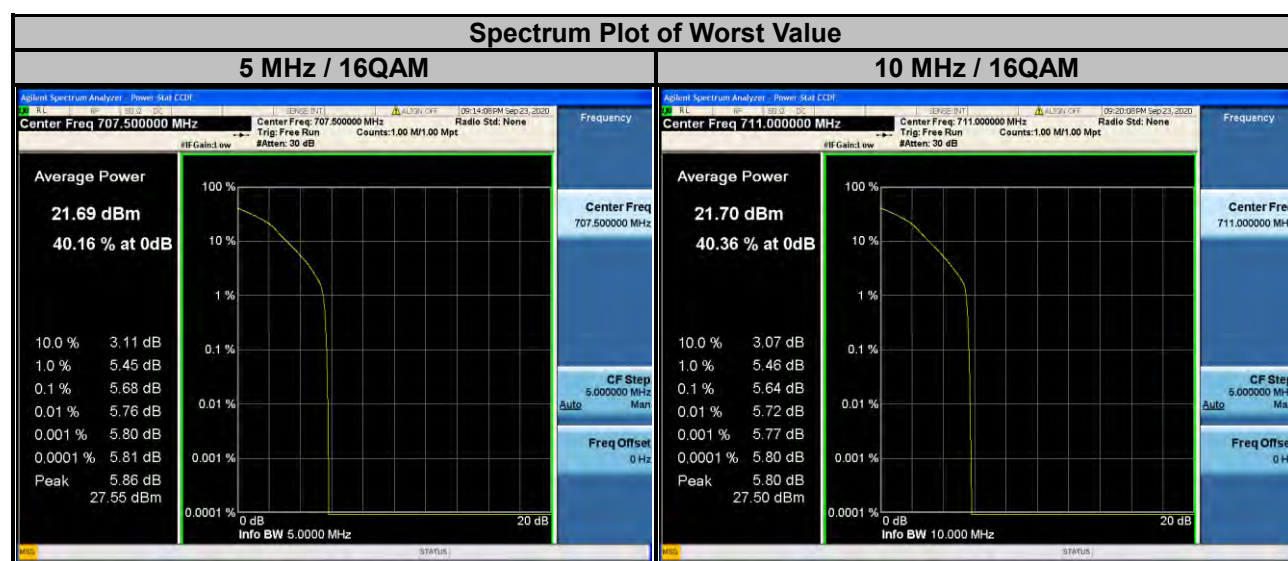
| LTE Band 4                |                 |                            |       |                           |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|---------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 15 MHz |                 |                            |       | Channel Bandwidth: 20 MHz |                 |                            |       |
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                           |                 | QPSK                       | 16QAM |
| 20025                     | 1717.5          | 3.85                       | 4.84  | 20050                     | 1720.0          | 3.91                       | 4.94  |
| 20175                     | 1732.5          | 4.36                       | 5.27  | 20175                     | 1732.5          | 4.23                       | 5.21  |
| 20325                     | 1747.5          | 3.96                       | 4.95  | 20300                     | 1745.0          | 4.18                       | 5.11  |



| LTE Band 12                |                 |                            |       |                          |                 |                            |       |
|----------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 1.4 MHz |                 |                            |       | Channel Bandwidth: 3 MHz |                 |                            |       |
| Channel                    | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                            |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 23017                      | 699.7           | 4.01                       | 4.96  | 23025                    | 700.5           | 3.98                       | 4.88  |
| 23095                      | 707.5           | 4.73                       | 5.62  | 23095                    | 707.5           | 4.81                       | 5.70  |
| 23173                      | 715.3           | 4.24                       | 5.26  | 23165                    | 714.5           | 4.04                       | 4.98  |



| LTE Band 12              |                 |                            |       |                           |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|---------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 5 MHz |                 |                            |       | Channel Bandwidth: 10 MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                           |                 | QPSK                       | 16QAM |
| 23035                    | 701.5           | 3.93                       | 4.85  | 23060                     | 704.0           | 4.00                       | 4.98  |
| 23095                    | 707.5           | 4.75                       | 5.68  | 23095                     | 707.5           | 4.49                       | 5.50  |
| 23155                    | 713.5           | 3.79                       | 4.78  | 23130                     | 711.0           | 4.68                       | 5.64  |

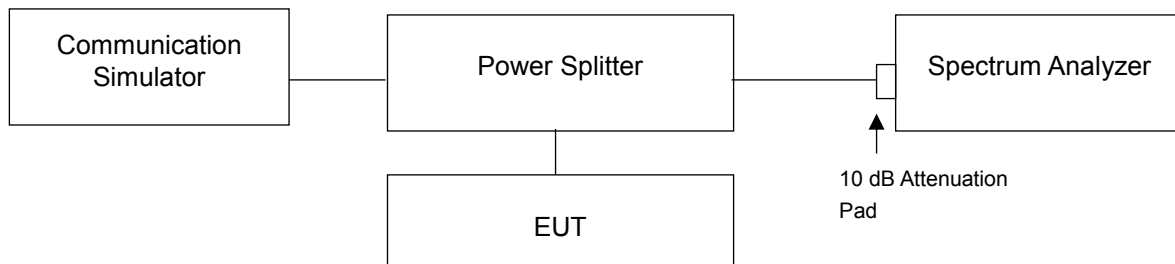


## 4.7 Conducted Spurious Emissions

### 4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB. The limit of emission is equal to -13 dBm.

### 4.7.2 Test Setup

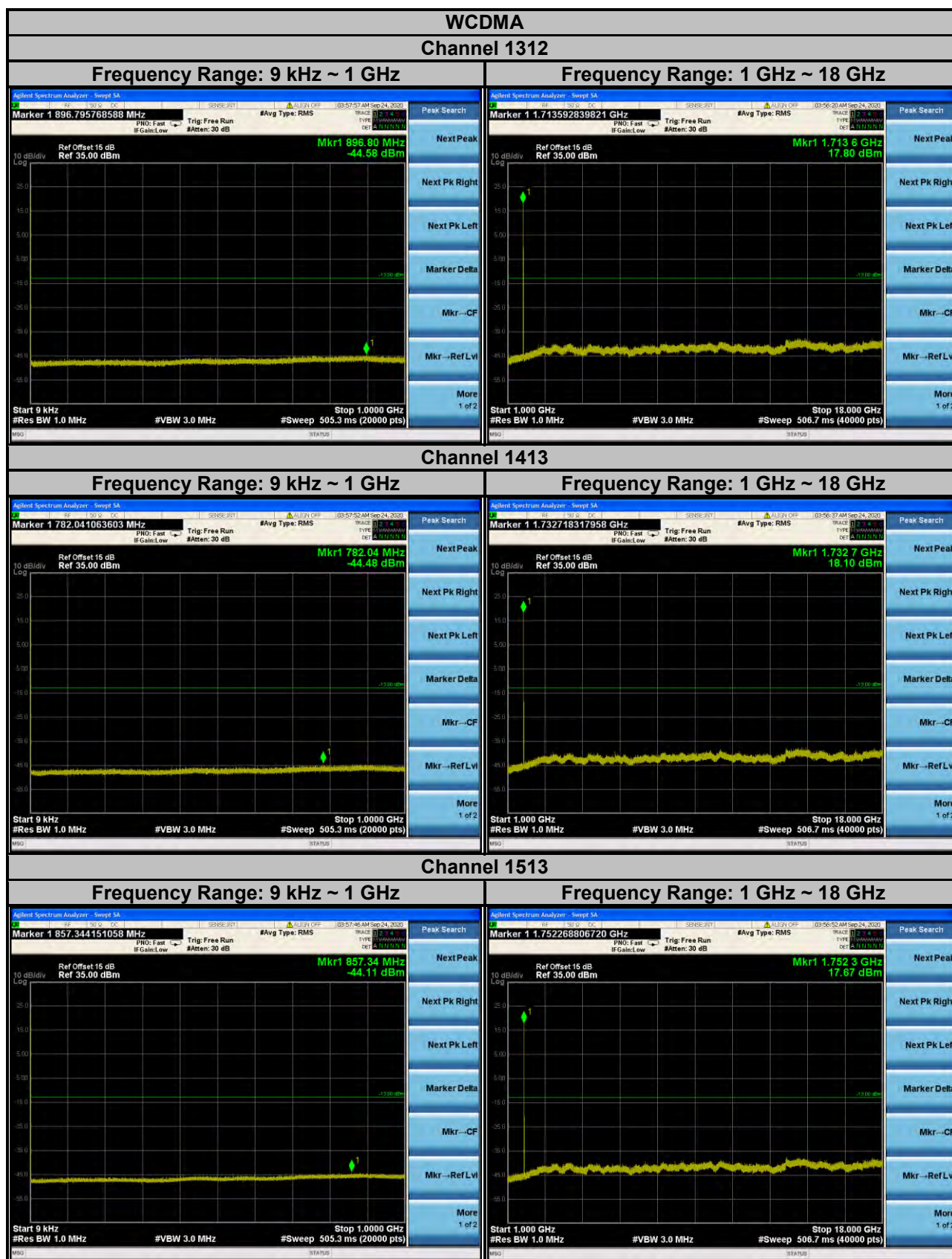


### 4.7.3 Test Procedure

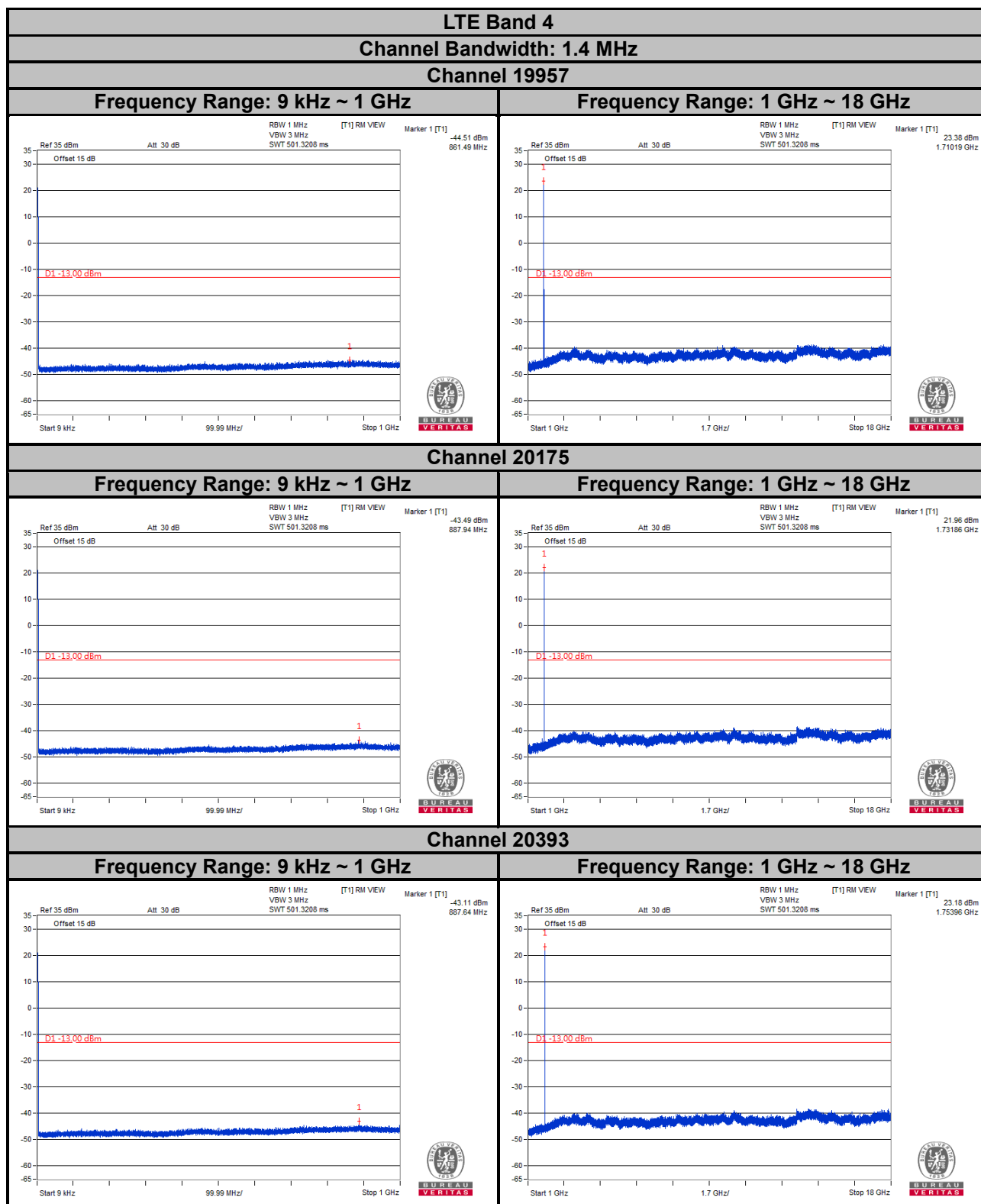
- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement. (WCDMA/LTE Band 4)
- Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement. (LTE Band 12)
- Measuring frequency range is from 1 GHz to 8 GHz / 18 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.



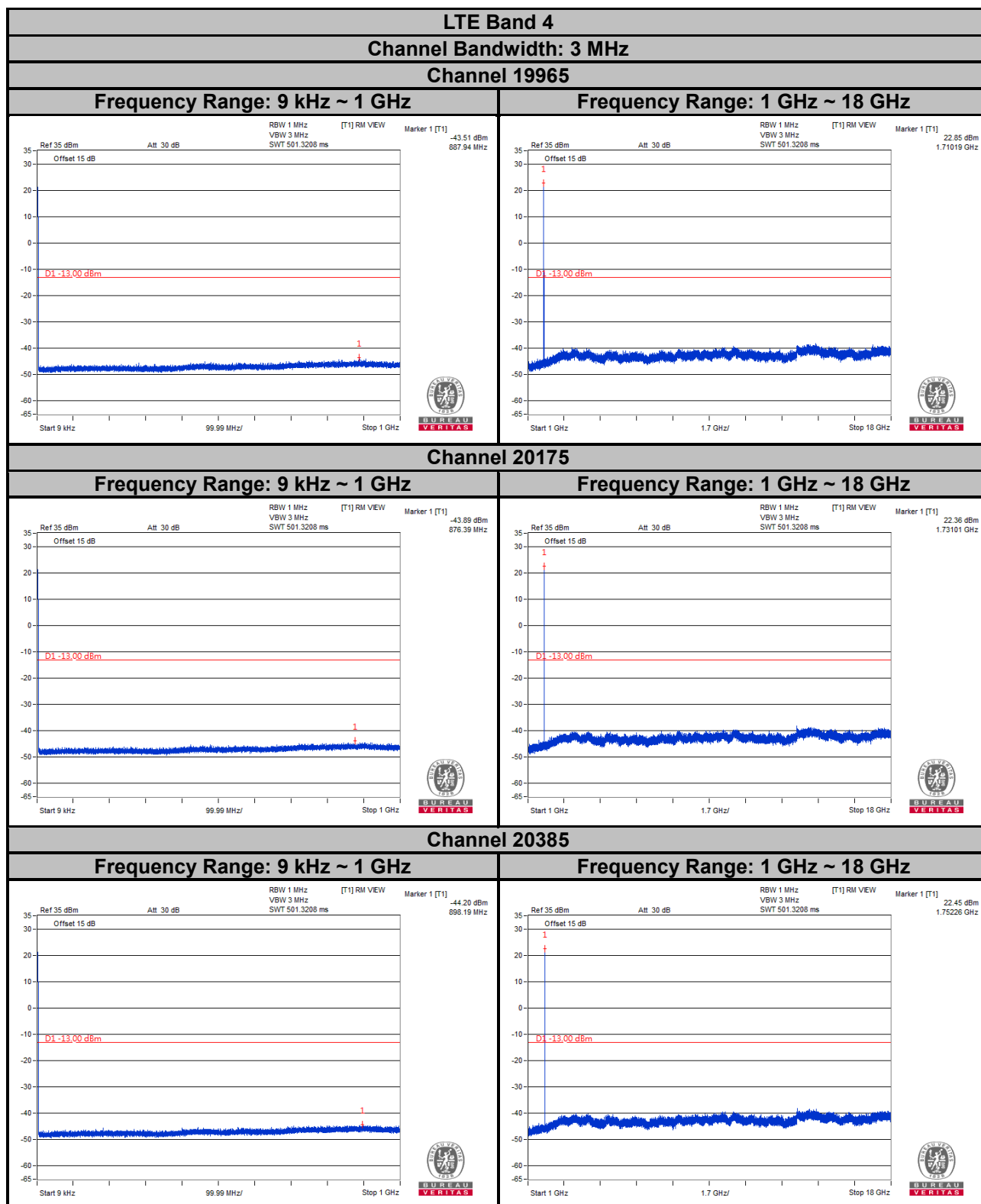
#### 4.7.4 Test Results



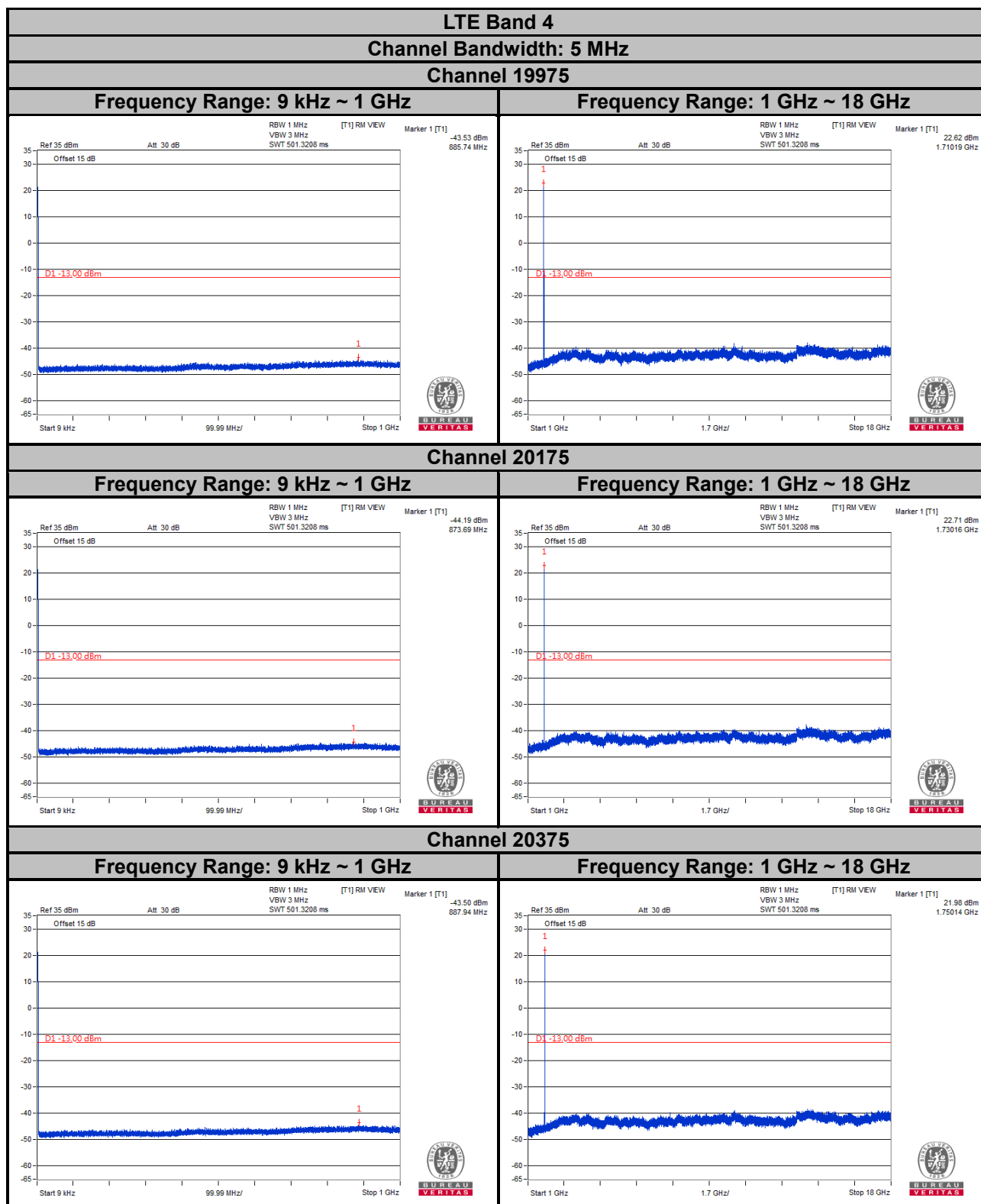
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



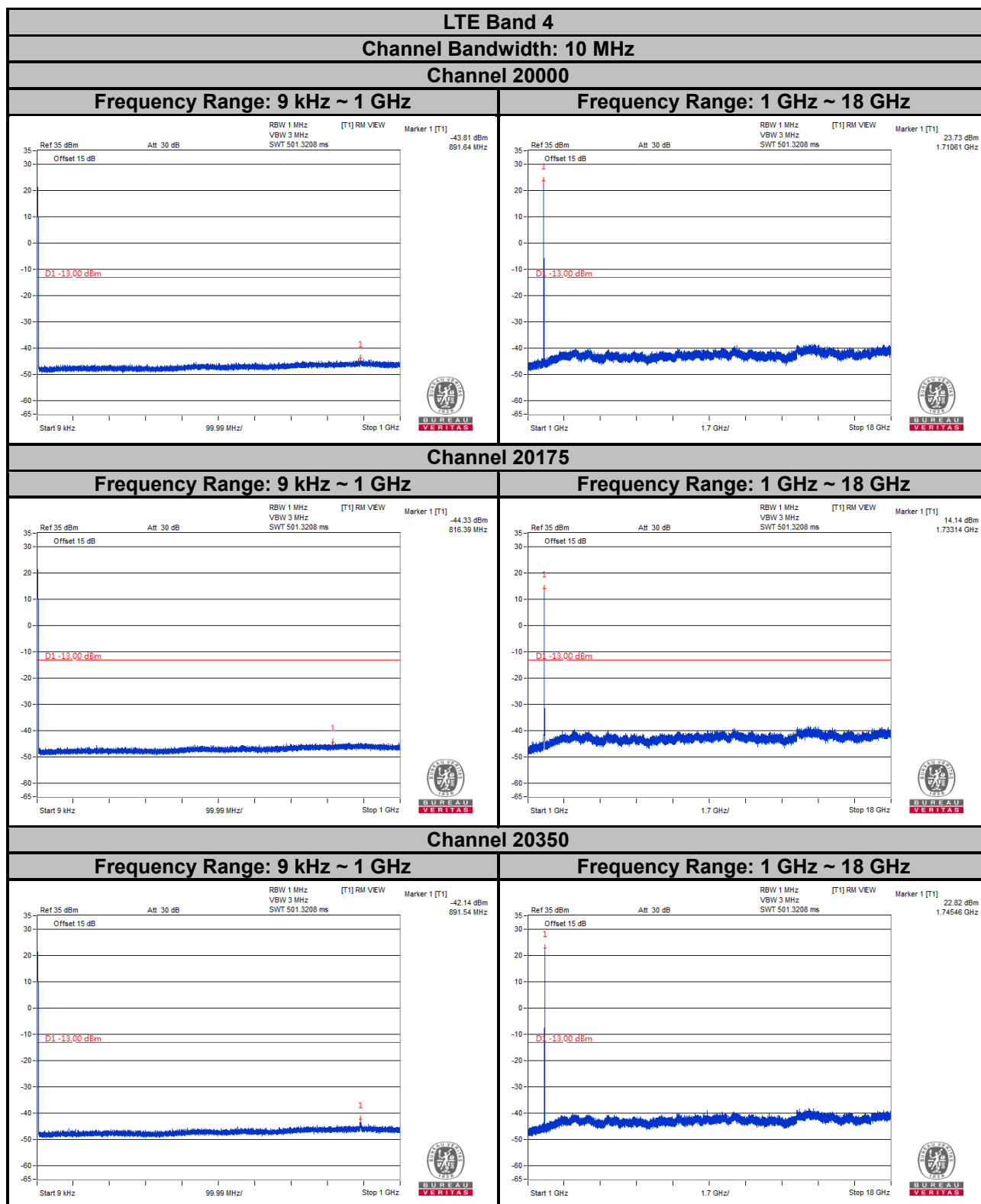
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



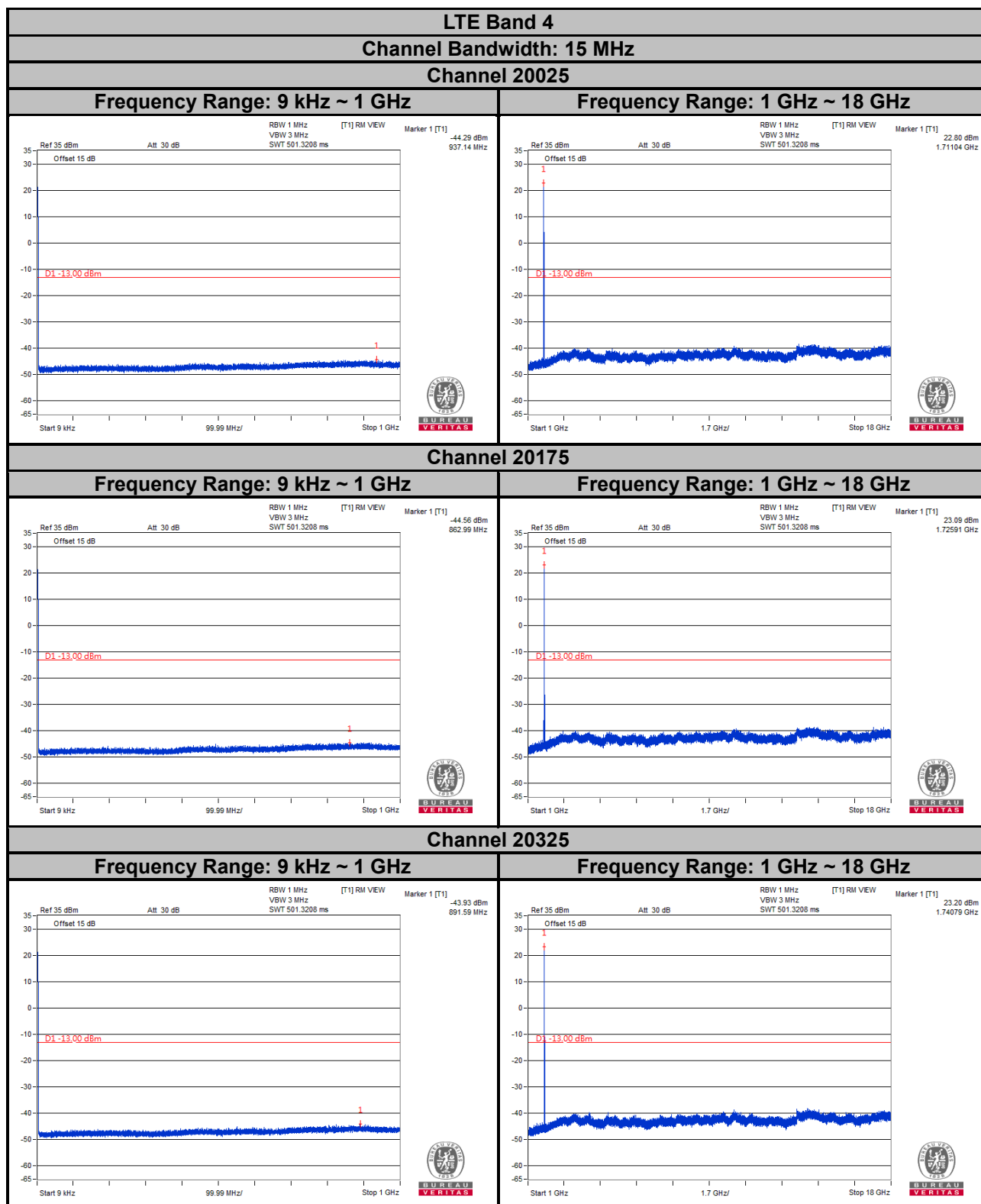
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



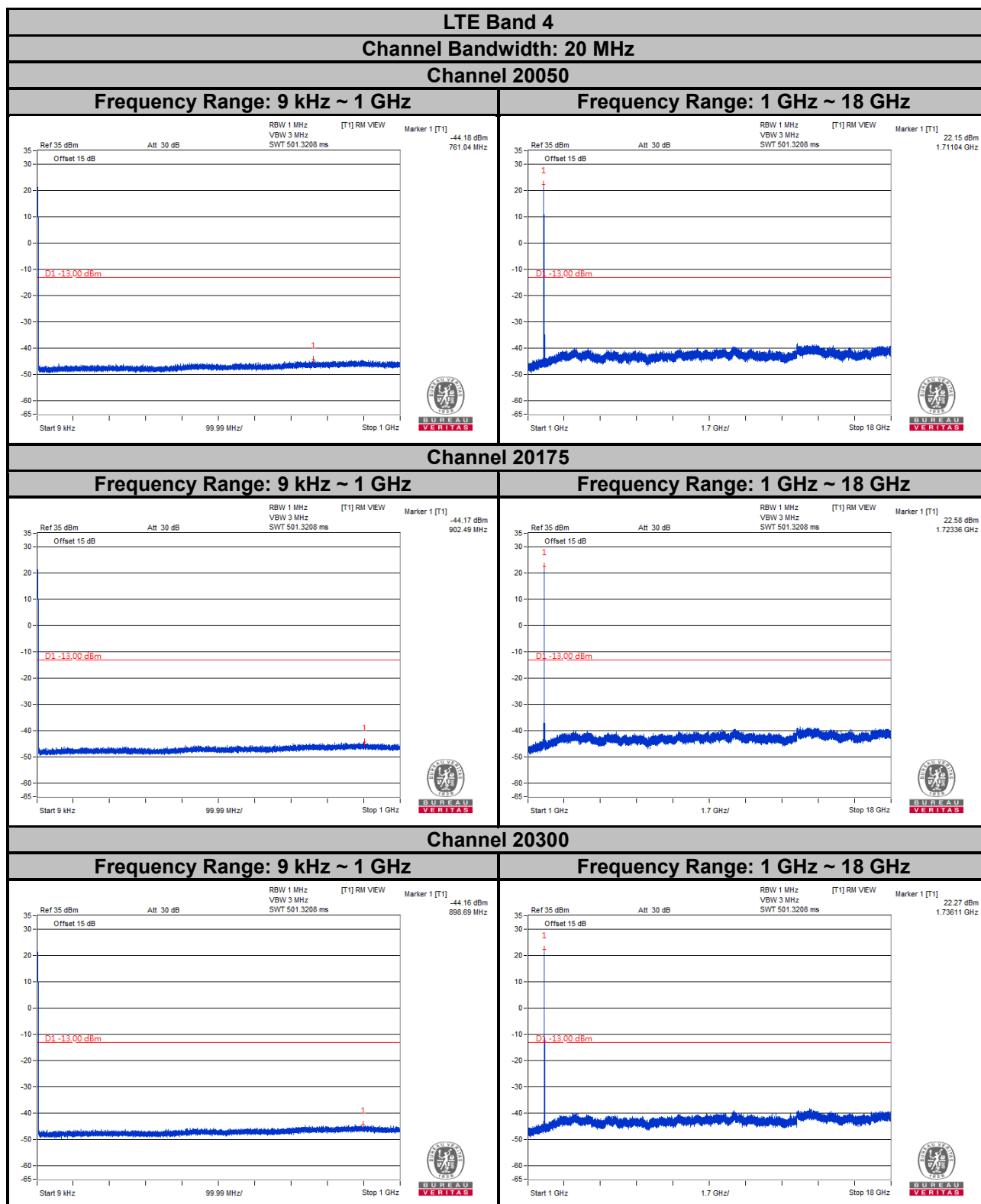
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



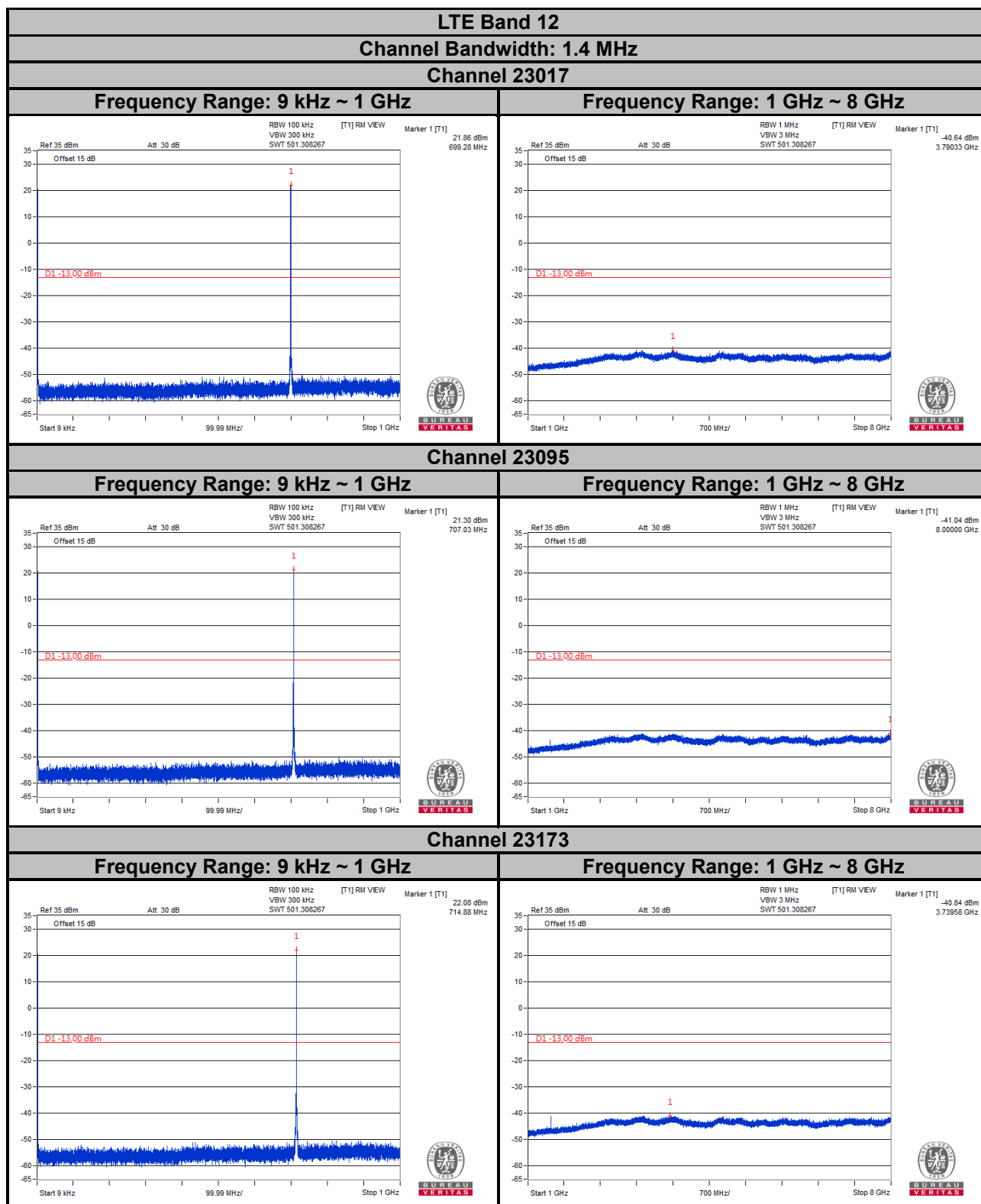
Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.

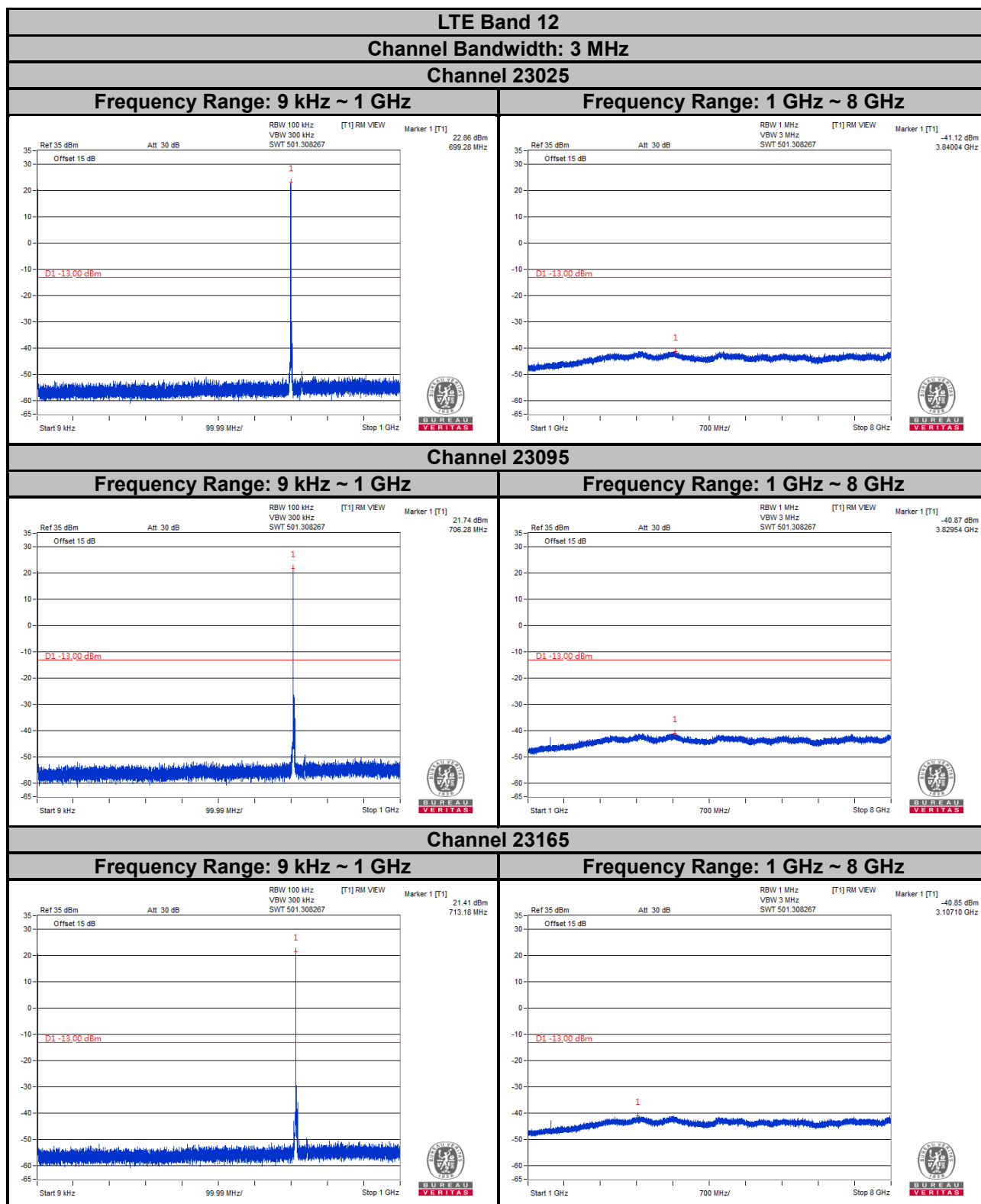


Note: The signal over the limit in 9 kHz is from spectrum analyzer.

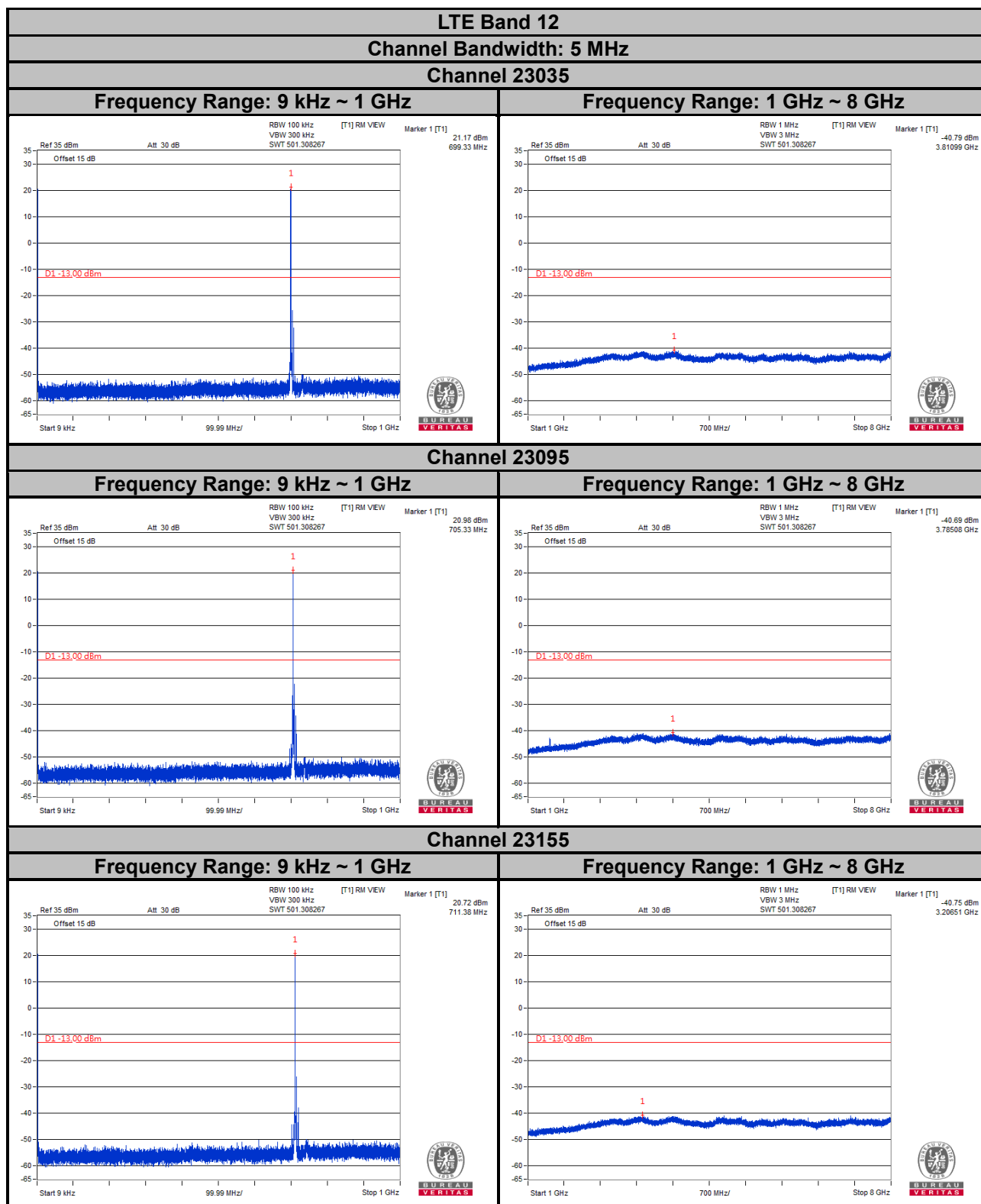


Note: The signal over the limit in 9 kHz is from spectrum analyzer.

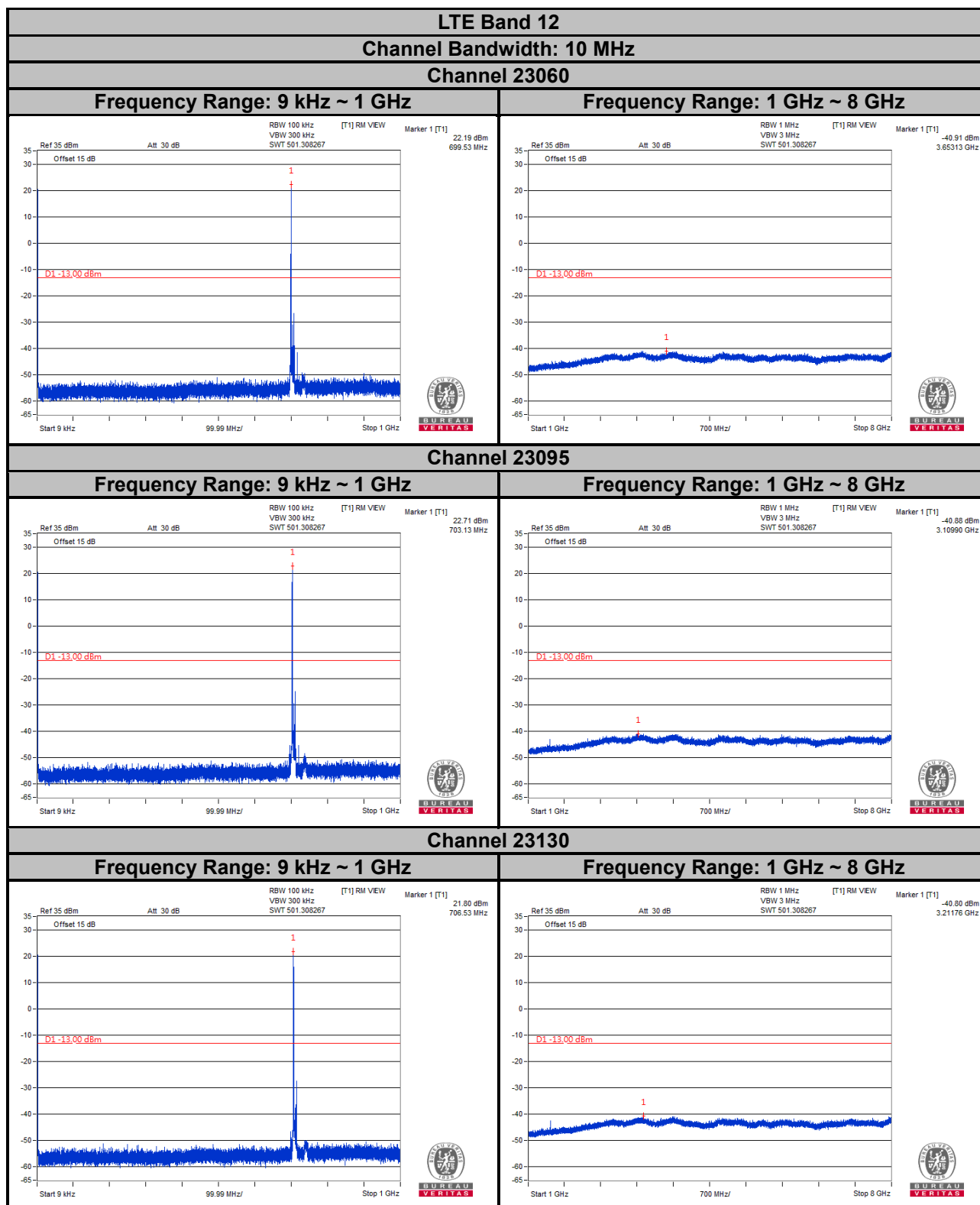




Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.



Note: The signal over the limit in 9 kHz is from spectrum analyzer.

## 4.8 Radiated Emission Measurement

### 4.8.1 Limits of Radiated Emission Measurement

- a. The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB. The limit of emission is equal to -13 dBm.

### 4.8.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
- c. E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.

#### Note:

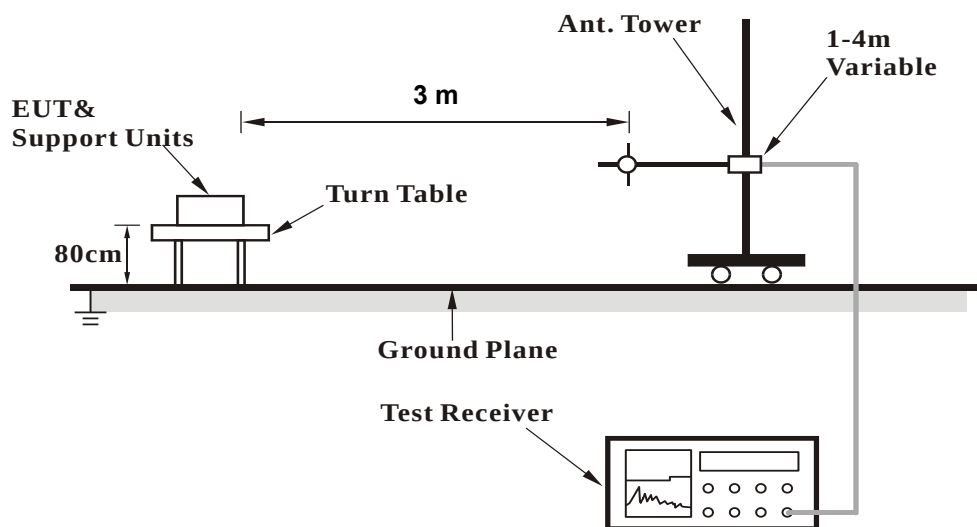
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:  
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

### 4.8.3 Deviation from Test Standard

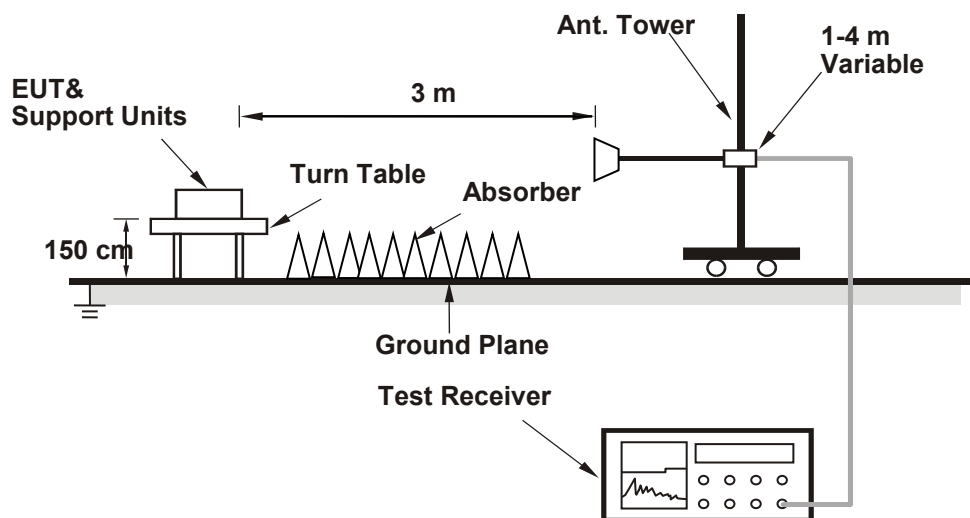
No deviation.

#### 4.8.4 Test Setup

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



##### <Radiated Emission above 1 GHz>



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

#### 4.8.5 Test Results

##### Mode A

##### WCDMA:

##### Low Channel

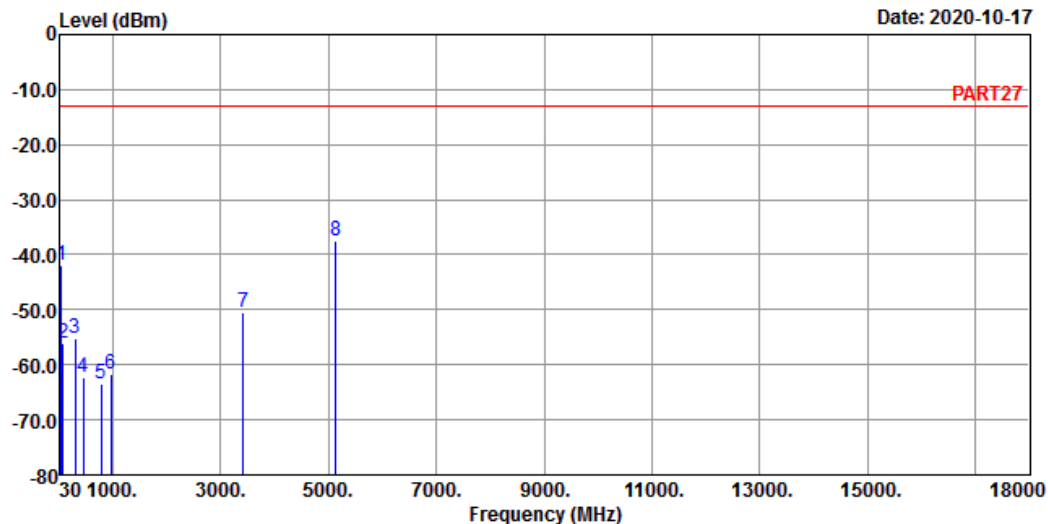


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 2020-10-17



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : WCDMA Band 4 Link\_L-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
|      |         |        |            |        | dB     | dB           |
| 1    | 43.58   | -41.96 | -40.49     | -13.00 | -1.47  | -28.96 Peak  |
| 2    | 76.56   | -55.97 | -45.99     | -13.00 | -9.98  | -42.97 Peak  |
| 3    | 308.39  | -55.30 | -48.42     | -13.00 | -6.88  | -42.30 Peak  |
| 4    | 450.01  | -62.28 | -56.73     | -13.00 | -5.55  | -49.28 Peak  |
| 5    | 781.75  | -63.36 | -64.15     | -13.00 | 0.79   | -50.36 Peak  |
| 6    | 970.90  | -61.76 | -64.31     | -13.00 | 2.55   | -48.76 Peak  |
| 7    | 3424.80 | -50.34 | -42.00     | -13.00 | -8.34  | -37.34 Peak  |
| 8 pp | 5137.20 | -37.34 | -35.60     | -13.00 | -1.74  | -24.34 Peak  |

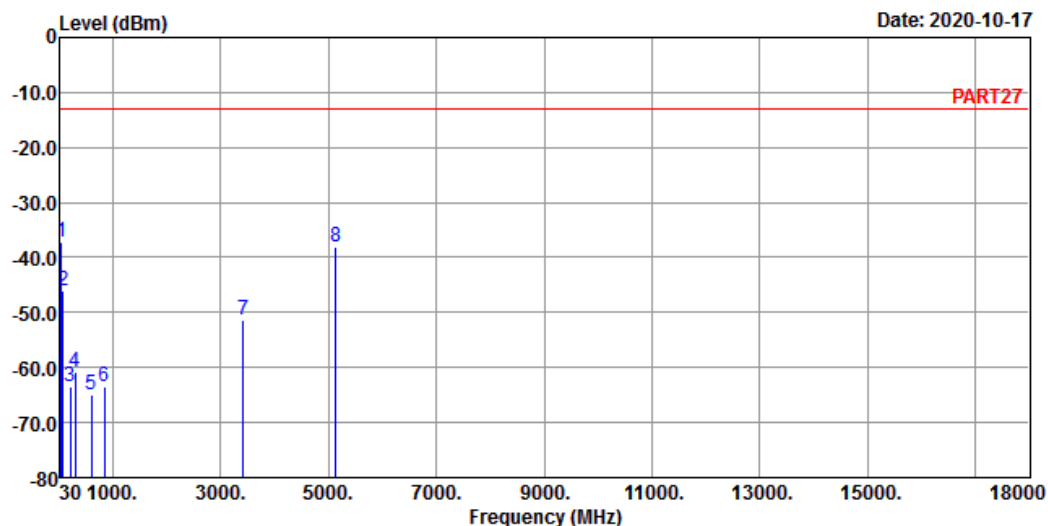


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2020-10-17



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_L-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 42.61   | -37.22 | -36.28     | -13.00     | -0.94  | -24.22     | Peak   |
| 2    | 76.56   | -46.18 | -36.20     | -13.00     | -9.98  | -33.18     | Peak   |
| 3    | 211.39  | -63.47 | -55.92     | -13.00     | -7.55  | -50.47     | Peak   |
| 4    | 309.36  | -60.72 | -53.86     | -13.00     | -6.86  | -47.72     | Peak   |
| 5    | 600.36  | -64.89 | -64.14     | -13.00     | -0.75  | -51.89     | Peak   |
| 6    | 852.56  | -63.52 | -63.83     | -13.00     | 0.31   | -50.52     | Peak   |
| 7    | 3424.80 | -51.39 | -43.05     | -13.00     | -8.34  | -38.39     | Peak   |
| 8    | 5137.20 | -38.01 | -36.27     | -13.00     | -1.74  | -25.01     | Peak   |

# Middle Channel

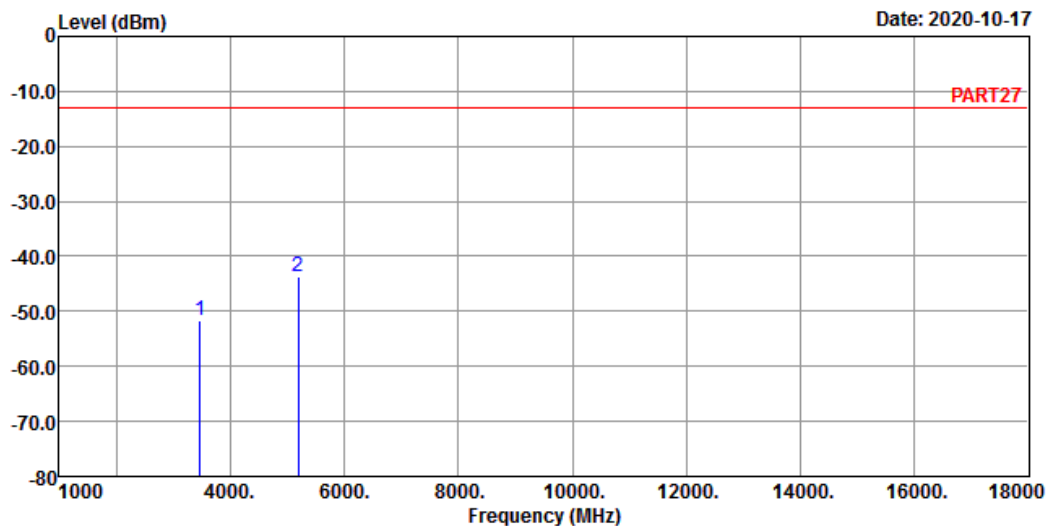


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-10-17



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : WCDMA Band 4 Link\_M-CH  
Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.20 | -51.68 | -43.80     | -13.00     | -7.88  | -38.68     | Peak   |
| 2 pp | 5197.80 | -43.73 | -41.66     | -13.00     | -2.07  | -30.73     | Peak   |



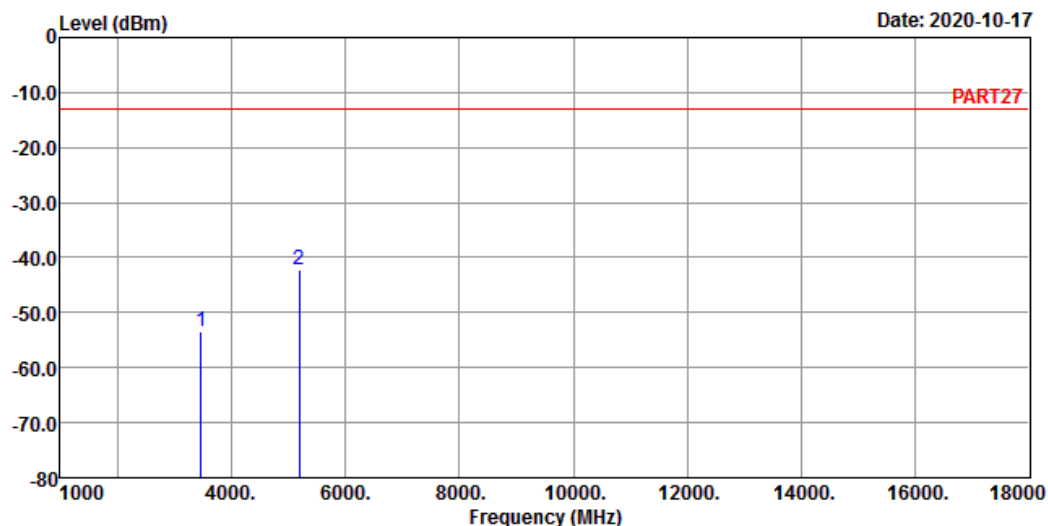


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-10-17



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_M-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
| 1    | 3465.20 | -53.31 | -45.43     | -13.00 | -7.88  | -40.31 Peak  |
| 2 pp | 5197.80 | -42.34 | -40.27     | -13.00 | -2.07  | -29.34 Peak  |

# High Channel

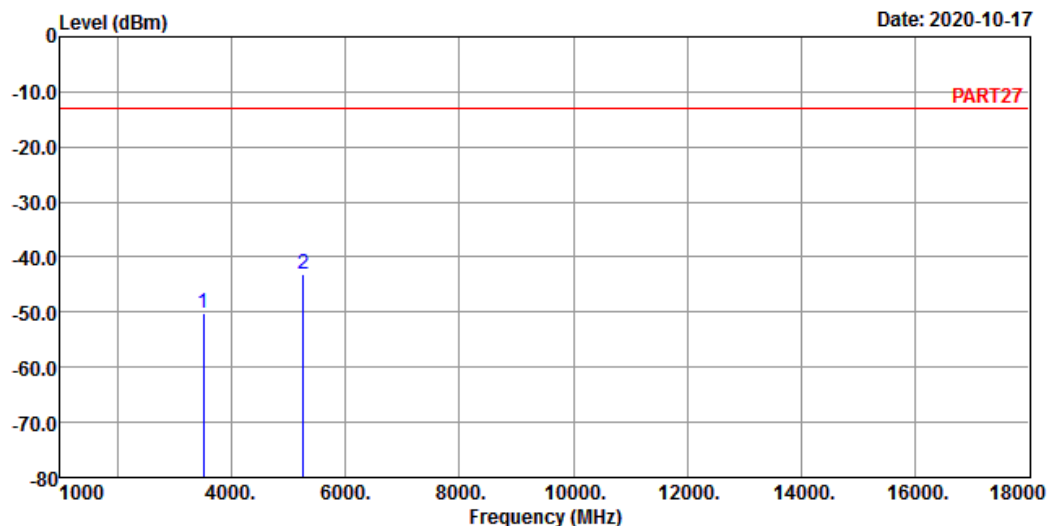


Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

A D T

Data: 3

Date: 2020-10-17



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : WCDMA Band 4 Link\_H-CH  
Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3505.20 | -50.14 | -42.69     | -13.00     | -7.45  | -37.14     | Peak   |
| 2 pp | 5257.80 | -42.99 | -40.47     | -13.00     | -2.52  | -29.99     | Peak   |

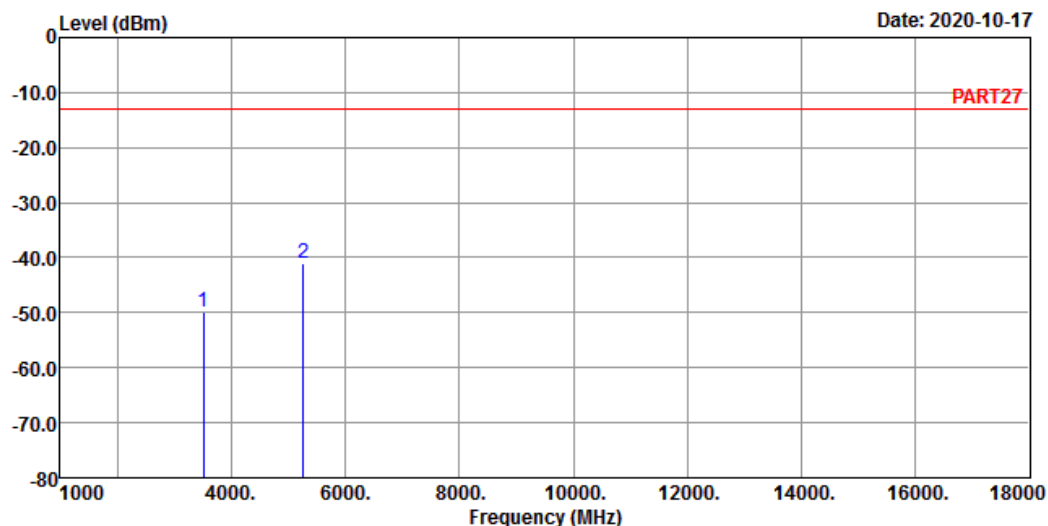


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-10-17



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_H-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
|      |         |        |            |        | dB     | dB           |
| 1    | 3505.20 | -49.93 | -42.48     | -13.00 | -7.45  | -36.93 Peak  |
| 2 pp | 5257.80 | -40.89 | -38.37     | -13.00 | -2.52  | -27.89 Peak  |

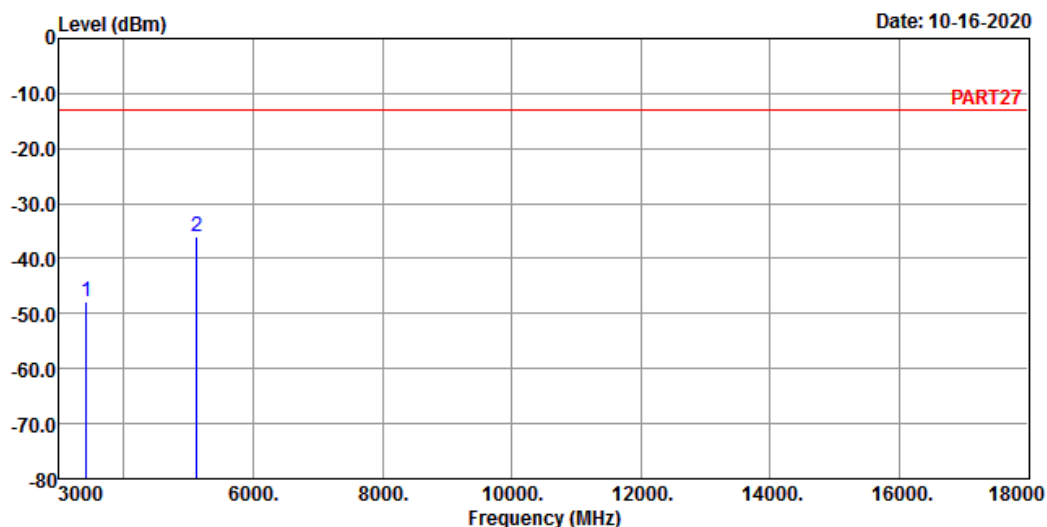
**LTE Band 4**  
**Channel Bandwidth: 1.4 MHz / QPSK**  
**Low Channel**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 4 QPSK\_1.4M Link\_L-CH  
 Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
| 1    | 3421.40 | -47.83 | -39.49     | -13.00 | -8.34  | -34.83 Peak  |
| 2 pp | 5132.10 | -35.92 | -34.18     | -13.00 | -1.74  | -22.92 Peak  |

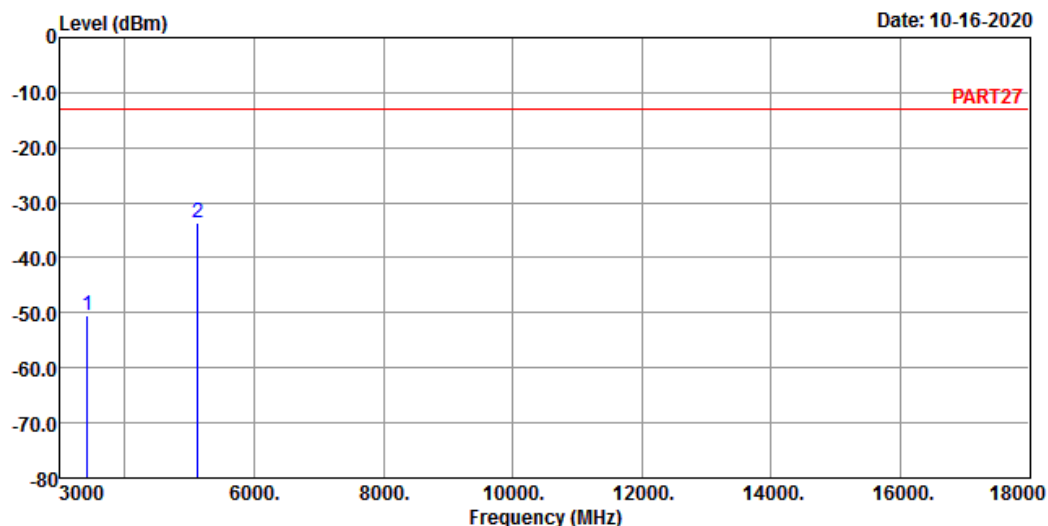


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3421.40 | -50.40 | -42.06     | -13.00     | -8.34  | -37.40     | Peak   |
| 2 pp | 5132.10 | -33.69 | -31.95     | -13.00     | -1.74  | -20.69     | Peak   |

# Middle Channel

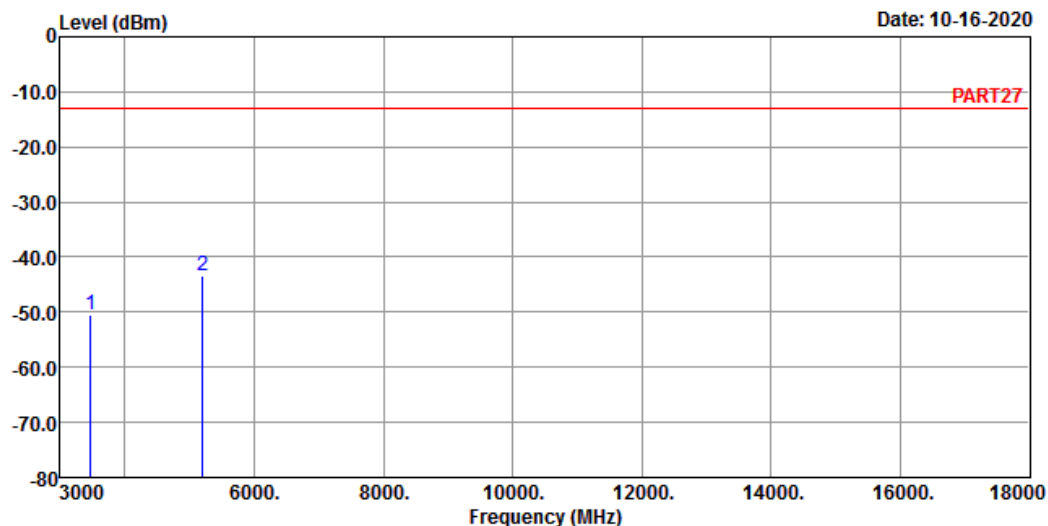


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      |         | Read   | Limit  |        | Over  |             |
|------|---------|--------|--------|--------|-------|-------------|
| Freq | Level   | Level  | Line   | Factor | Limit | Remark      |
| MHz  | dBm     | dBm    | dBm    | dB     | dB    |             |
| 1    | 3465.00 | -50.47 | -42.59 | -13.00 | -7.88 | -37.47 Peak |
| 2 pp | 5197.50 | -43.54 | -41.47 | -13.00 | -2.07 | -30.54 Peak |

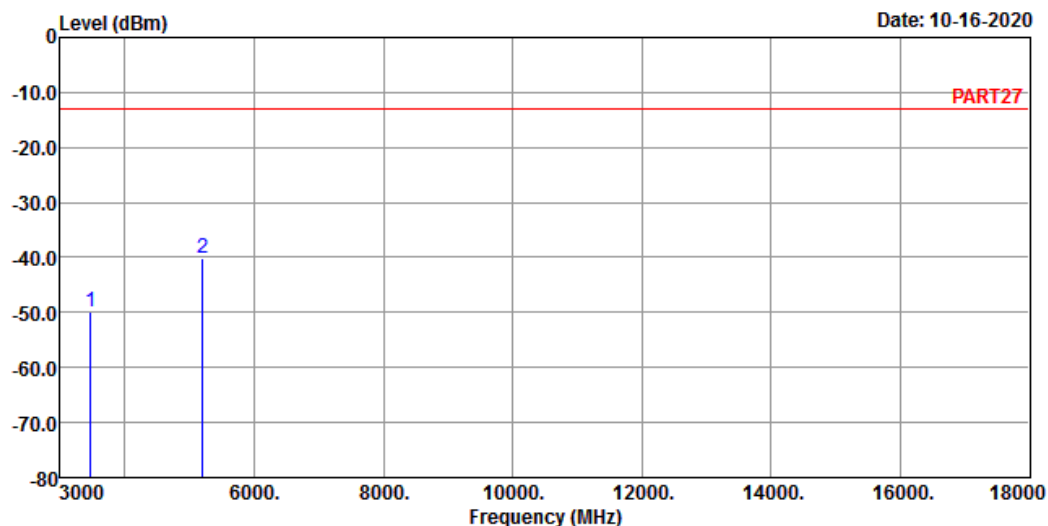


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -50.00 | -42.12     | -13.00     | -7.88  | -37.00     | Peak   |
| 2 pp | 5197.50 | -40.06 | -37.99     | -13.00     | -2.07  | -27.06     | Peak   |

# High Channel

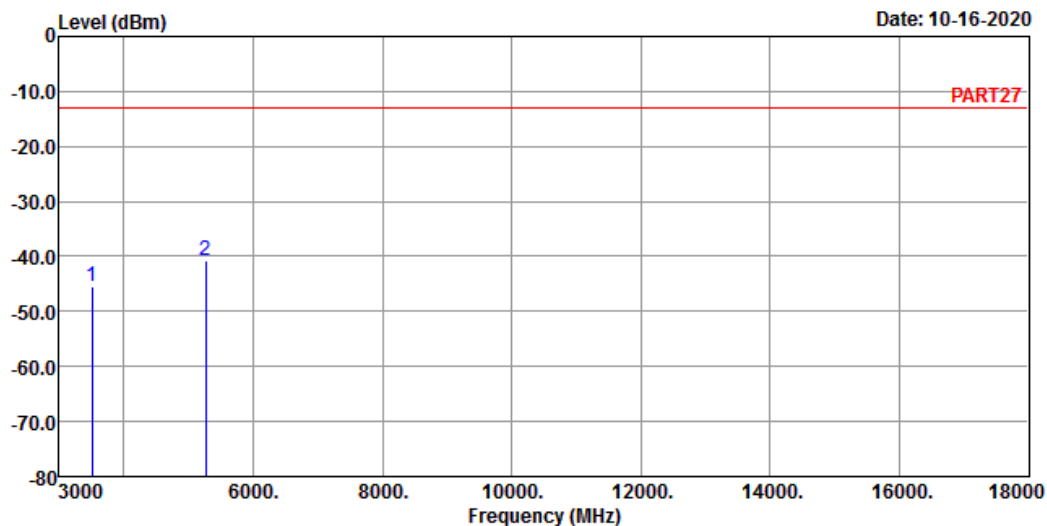


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3508.60 | -45.40 | -37.95 | -13.00 | -7.45  | -32.40 | Peak   |
| 2 pp | 5262.90 | -40.70 | -38.18 | -13.00 | -2.52  | -27.70 | Peak   |



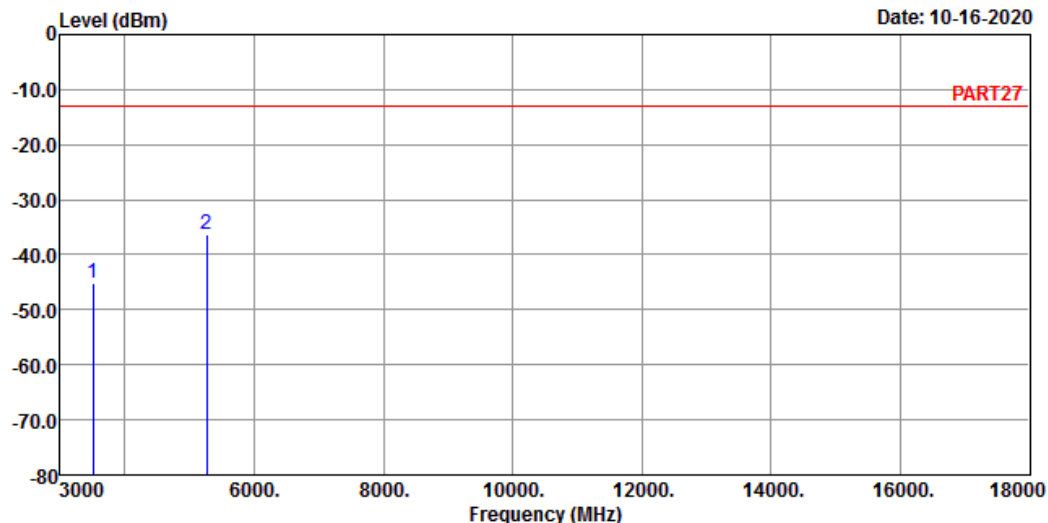


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3508.60 | -45.04 | -37.59     | -13.00     | -7.45  | -32.04     | Peak   |
| 2 pp | 5262.90 | -36.24 | -33.72     | -13.00     | -2.52  | -23.24     | Peak   |

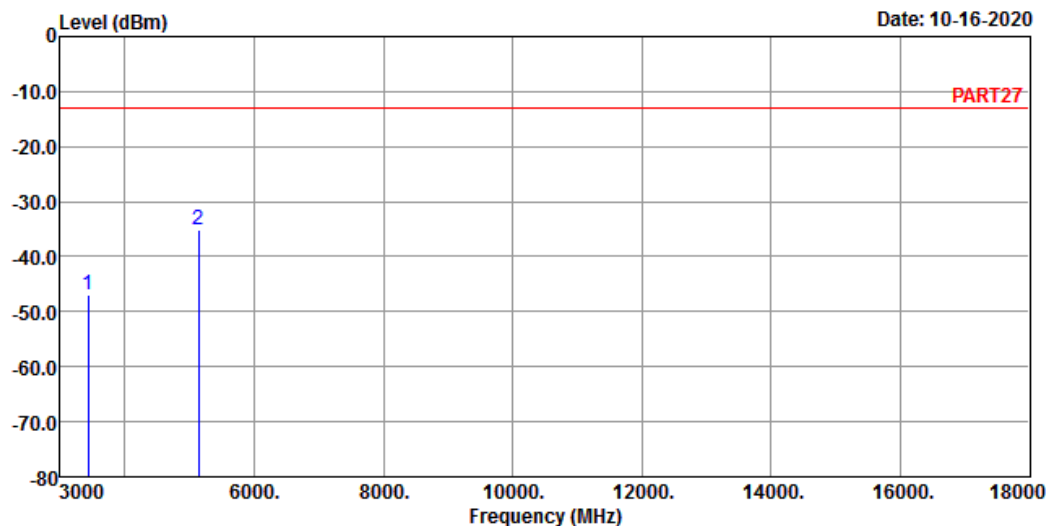
Channel Bandwidth: 5 MHz / QPSK  
Low Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 4 QPSK\_5M Link\_L-CH  
Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over  |              |
|------|---------|--------|------------|--------|-------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | dB    | Limit Remark |
| 1    | 3425.00 | -46.96 | -38.62     | -13.00 | -8.34 | -33.96 Peak  |
| 2 pp | 5137.50 | -35.13 | -33.39     | -13.00 | -1.74 | -22.13 Peak  |

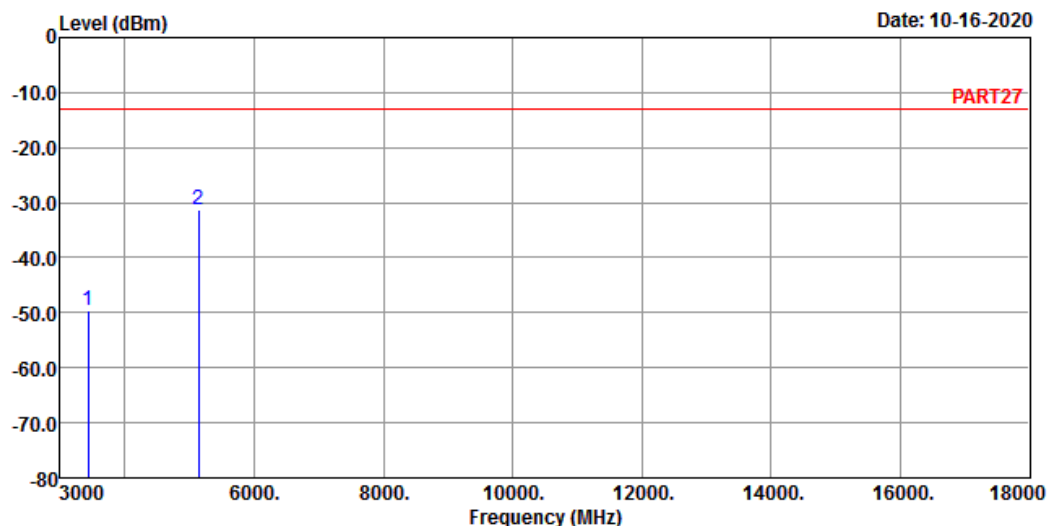


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3425.00 | -49.70 | -41.36     | -13.00     | -8.34  | -36.70     | Peak   |
| 2 pp | 5137.50 | -31.34 | -29.60     | -13.00     | -1.74  | -18.34     | Peak   |

# Middle Channel

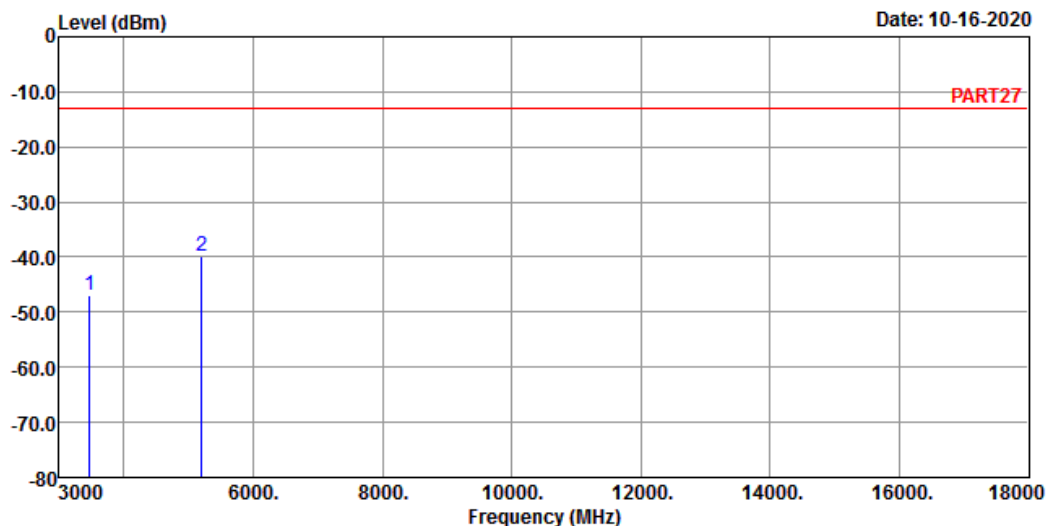


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3465.00 | -46.86 | -38.98 | -13.00 | -7.88  | -33.86 | Peak   |
| 2 pp | 5197.50 | -39.83 | -37.76 | -13.00 | -2.07  | -26.83 | Peak   |

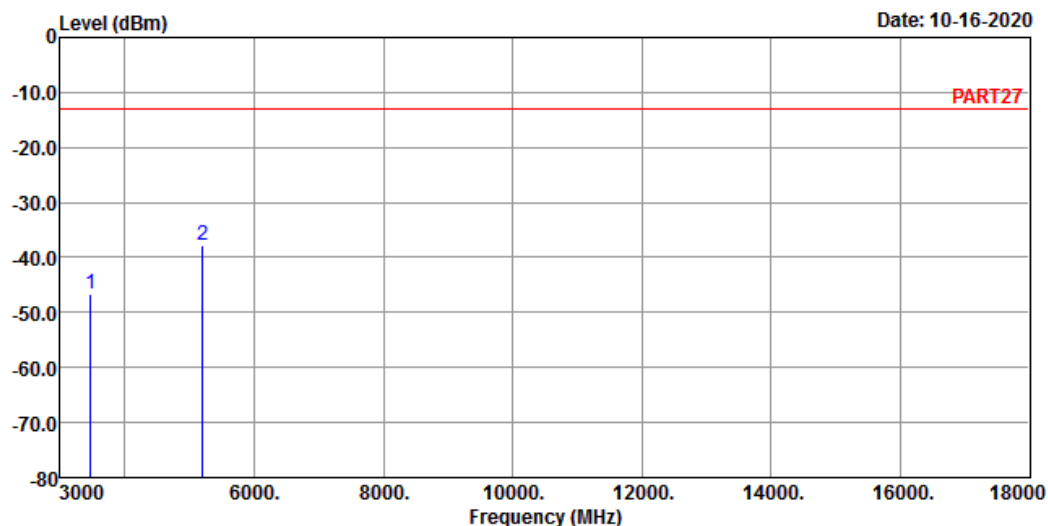


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -46.77 | -38.89     | -13.00     | -7.88  | -33.77     | Peak   |
| 2 pp | 5197.50 | -37.81 | -35.74     | -13.00     | -2.07  | -24.81     | Peak   |

# High Channel

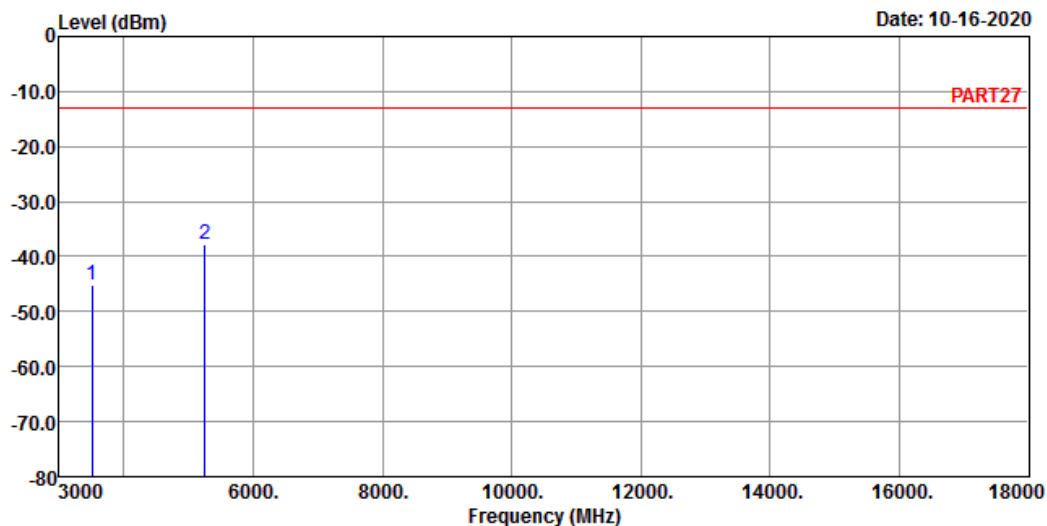


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3505.00 | -45.19 | -37.74 | -13.00 | -7.45  | -32.19 | Peak   |
| 2 pp | 5257.50 | -37.93 | -35.41 | -13.00 | -2.52  | -24.93 | Peak   |

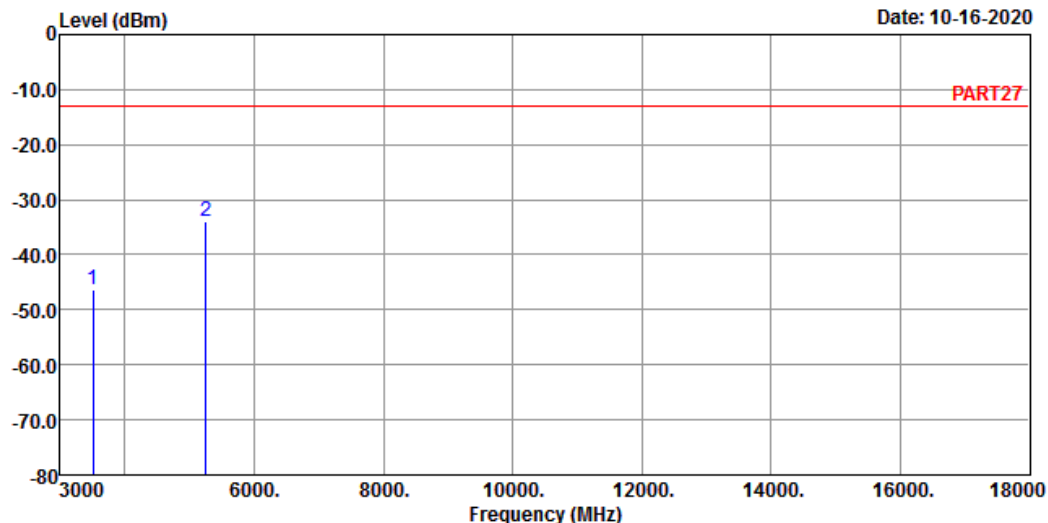


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3505.00 | -46.33 | -38.88     | -13.00     | -7.45  | -33.33     | Peak   |
| 2 pp | 5257.50 | -34.00 | -31.48     | -13.00     | -2.52  | -21.00     | Peak   |

Channel Bandwidth: 20 MHz / QPSK  
Low Channel

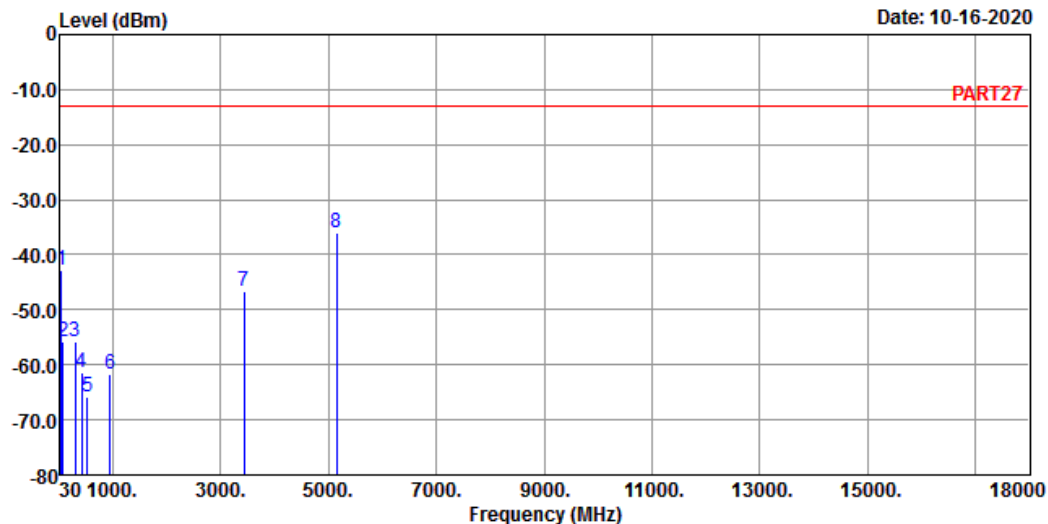


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 10-16-2020



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 4 QPSK\_20M Link\_L-CH  
Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over  |             |
|------|---------|--------|------------|--------|-------|-------------|
|      | MHz     | dBm    | dBm        | dBm    | dB    | dB          |
| 1    | 43.58   | -42.84 | -41.37     | -13.00 | -1.47 | -29.84 Peak |
| 2    | 76.56   | -55.84 | -45.86     | -13.00 | -9.98 | -42.84 Peak |
| 3    | 307.42  | -55.75 | -48.86     | -13.00 | -6.89 | -42.75 Peak |
| 4    | 419.94  | -61.47 | -55.68     | -13.00 | -5.79 | -48.47 Peak |
| 5    | 530.52  | -65.79 | -62.25     | -13.00 | -3.54 | -52.79 Peak |
| 6    | 958.29  | -61.78 | -63.89     | -13.00 | 2.11  | -48.78 Peak |
| 7    | 3440.00 | -46.59 | -38.37     | -13.00 | -8.22 | -33.59 Peak |
| 8 pp | 5160.00 | -36.12 | -34.21     | -13.00 | -1.91 | -23.12 Peak |



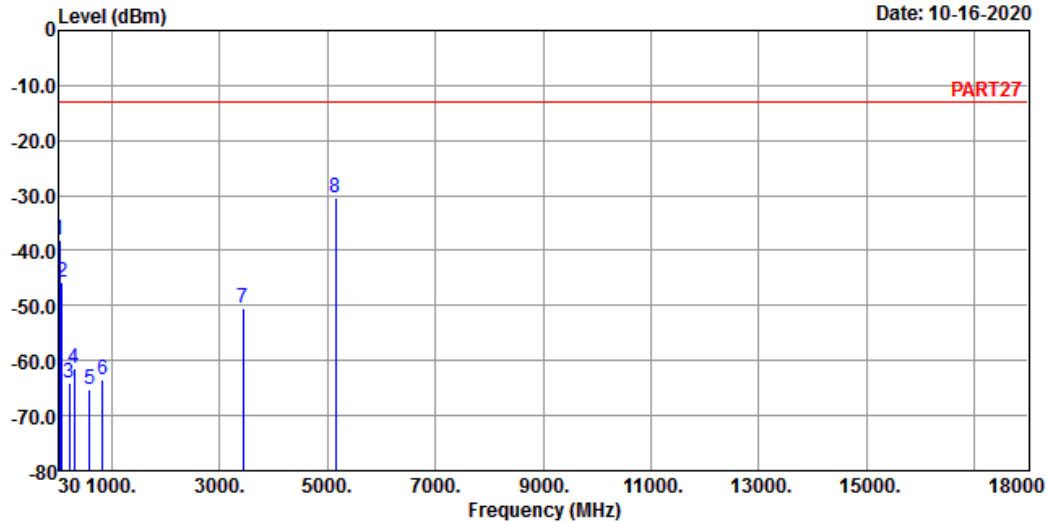


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 41.64   | -38.13 | -37.72     | -13.00     | -0.41  | -25.13     | Peak   |
| 2    | 77.53   | -45.87 | -35.67     | -13.00     | -10.20 | -32.87     | Peak   |
| 3    | 211.39  | -64.03 | -56.48     | -13.00     | -7.55  | -51.03     | Peak   |
| 4    | 309.36  | -61.31 | -54.45     | -13.00     | -6.86  | -48.31     | Peak   |
| 5    | 596.48  | -65.32 | -64.41     | -13.00     | -0.91  | -52.32     | Peak   |
| 6    | 835.10  | -63.32 | -63.74     | -13.00     | 0.42   | -50.32     | Peak   |
| 7    | 3440.00 | -50.47 | -42.25     | -13.00     | -8.22  | -37.47     | Peak   |
| 8 pp | 5160.00 | -30.54 | -28.63     | -13.00     | -1.91  | -17.54     | Peak   |

# Middle Channel

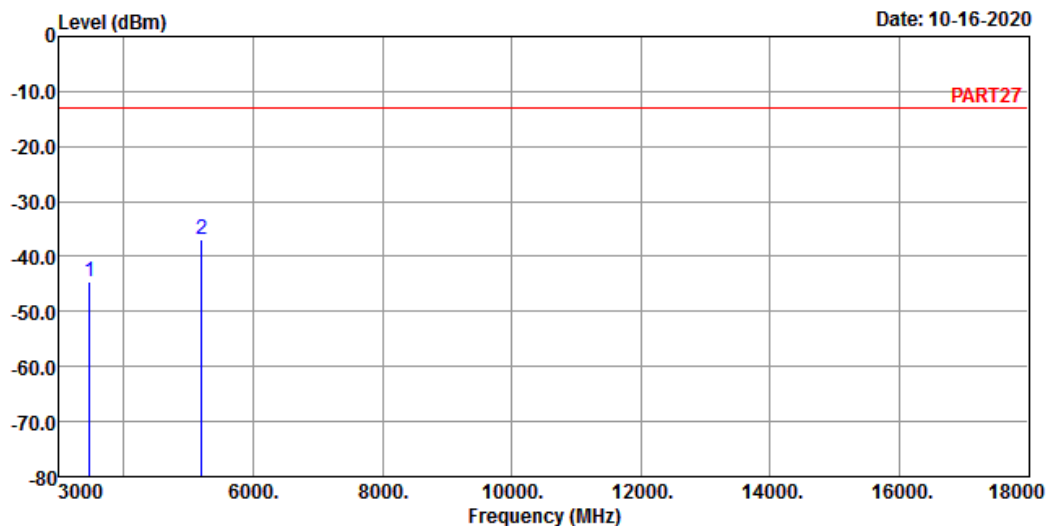


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Cyril Chen

|      |         | Read   | Limit  |        | Over  |             |
|------|---------|--------|--------|--------|-------|-------------|
| Freq | Level   | Level  | Line   | Factor | Limit | Remark      |
| MHz  | dBm     | dBm    | dBm    | dB     | dB    |             |
| 1    | 3465.00 | -44.51 | -36.63 | -13.00 | -7.88 | -31.51 Peak |
| 2 pp | 5197.50 | -37.01 | -34.94 | -13.00 | -2.07 | -24.01 Peak |

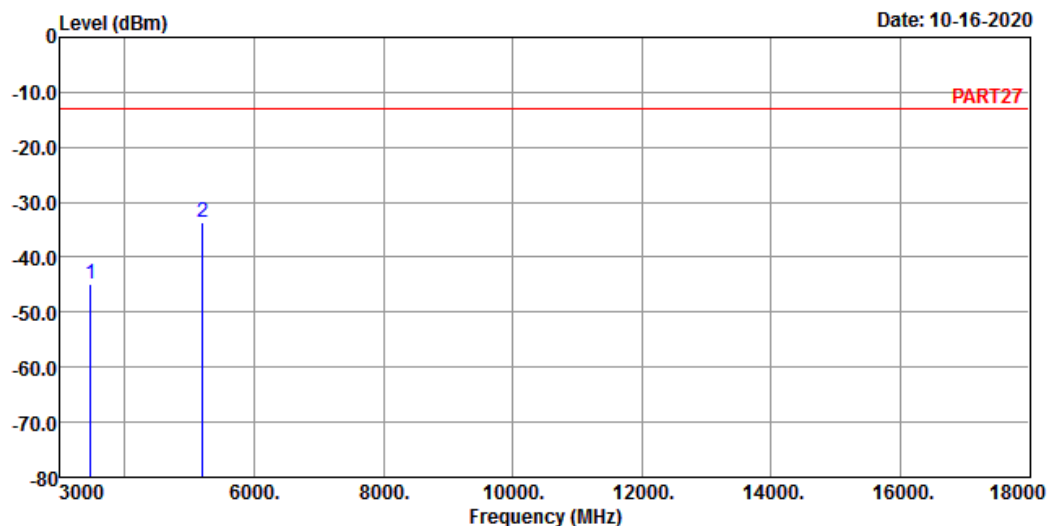


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -44.80 | -36.92     | -13.00     | -7.88  | -31.80     | Peak   |
| 2 pp | 5197.50 | -33.73 | -31.66     | -13.00     | -2.07  | -20.73     | Peak   |

# High Channel

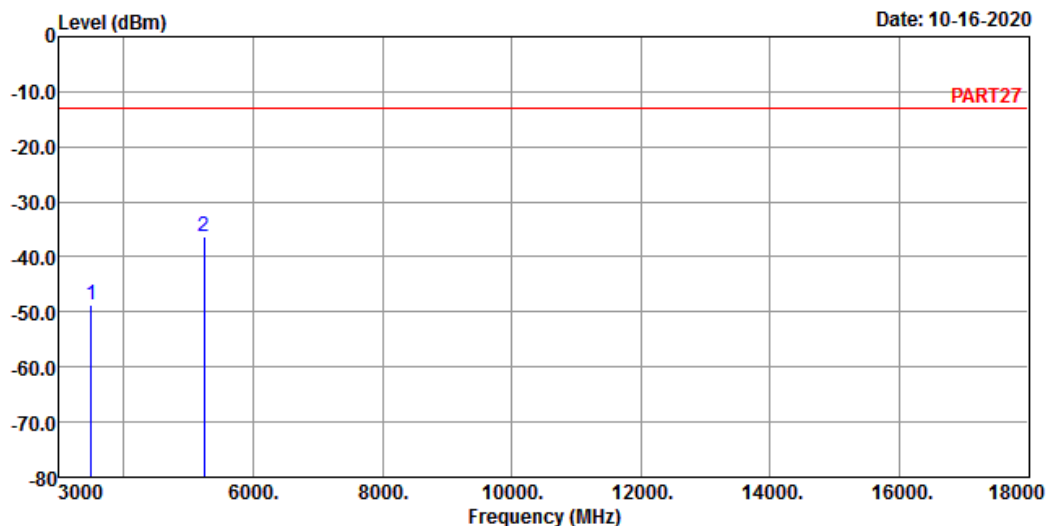


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Cyril Chen

|      |         | Read   | Limit  |        | Over  |             |
|------|---------|--------|--------|--------|-------|-------------|
| Freq | Level   | Level  | Line   | Factor | Limit | Remark      |
| MHz  | dBm     | dBm    | dBm    | dB     | dB    |             |
| 1    | 3490.00 | -48.63 | -40.98 | -13.00 | -7.65 | -35.63 Peak |
| 2 pp | 5235.00 | -36.29 | -33.88 | -13.00 | -2.41 | -23.29 Peak |

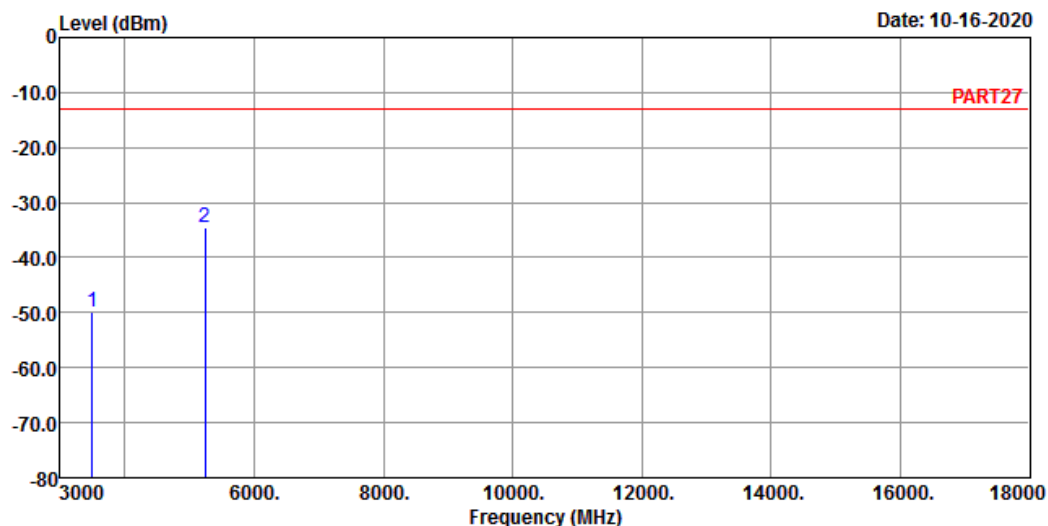


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3490.00 | -49.98 | -42.33     | -13.00     | -7.65  | -36.98     | Peak   |
| 2 pp | 5235.00 | -34.41 | -32.00     | -13.00     | -2.41  | -21.41     | Peak   |

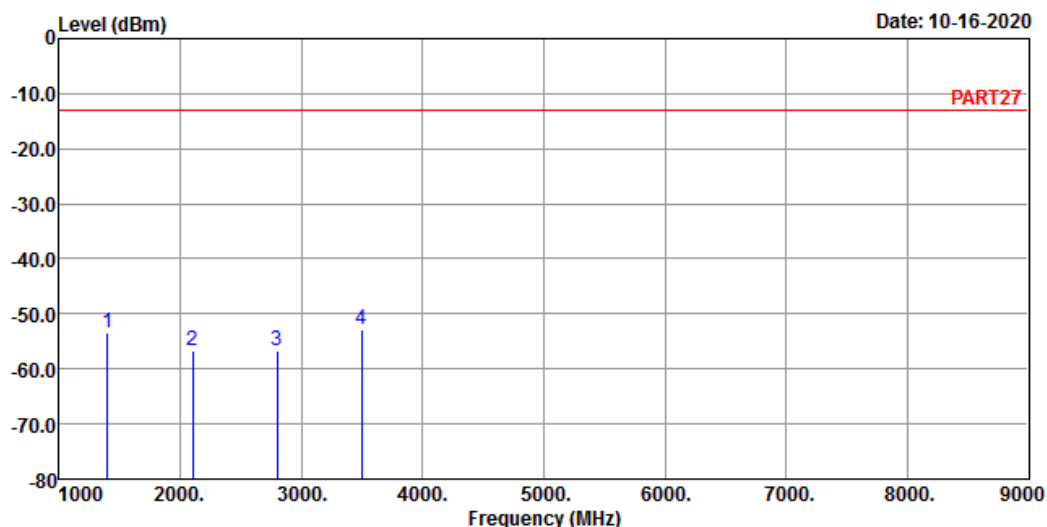
**LTE Band 12**  
**Channel Bandwidth: 1.4 MHz / QPSK**  
**Low Channel**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH  
 Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
| 1    | 1399.40 | -53.55 | -41.70     | -13.00 | -11.85 | -40.55 Peak  |
| 2    | 2099.10 | -56.66 | -46.50     | -13.00 | -10.16 | -43.66 Peak  |
| 3    | 2798.80 | -56.62 | -48.10     | -13.00 | -8.52  | -43.62 Peak  |
| 4 pp | 3498.50 | -52.83 | -45.30     | -13.00 | -7.53  | -39.83 Peak  |

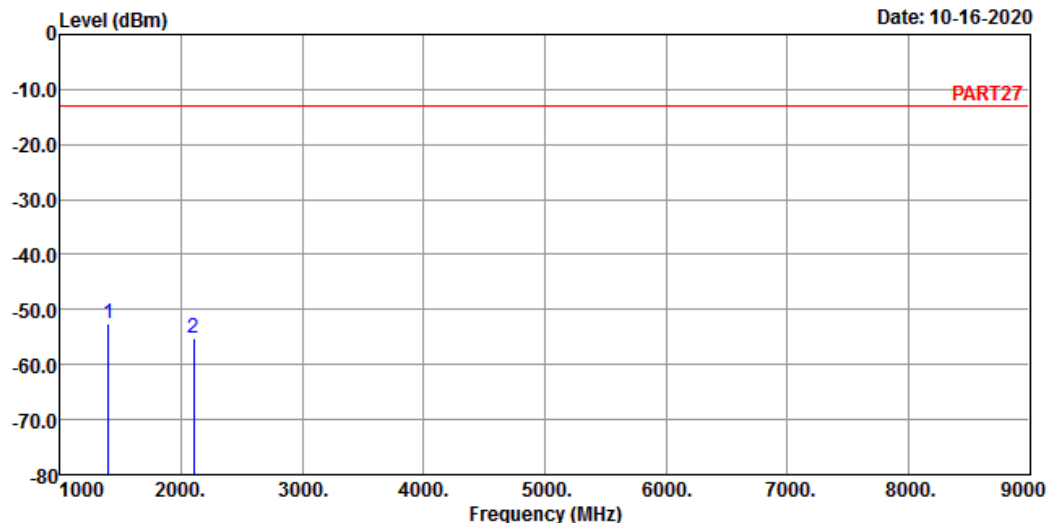


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1 pp | 1399.40 | -52.50 | -40.65 | -13.00 | -11.85 | -39.50 | Peak   |
| 2    | 2099.10 | -55.32 | -45.16 | -13.00 | -10.16 | -42.32 | Peak   |

# Middle Channel

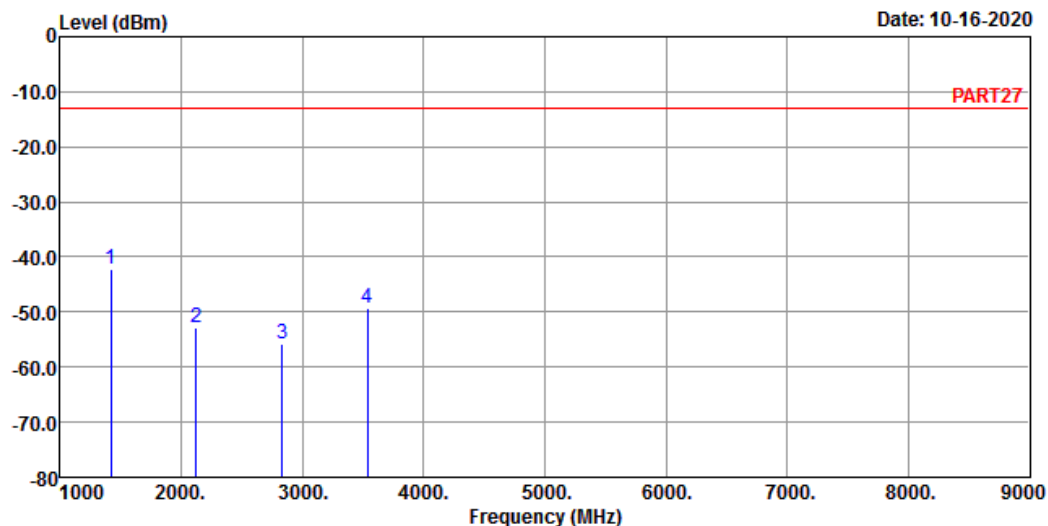


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1415.00 | -42.31 | -30.23     | -13.00     | -12.08 | -29.31     | Peak   |
| 2    | 2122.50 | -52.78 | -42.91     | -13.00     | -9.87  | -39.78     | Peak   |
| 3    | 2830.00 | -55.74 | -47.26     | -13.00     | -8.48  | -42.74     | Peak   |
| 4    | 3537.50 | -49.32 | -42.10     | -13.00     | -7.22  | -36.32     | Peak   |



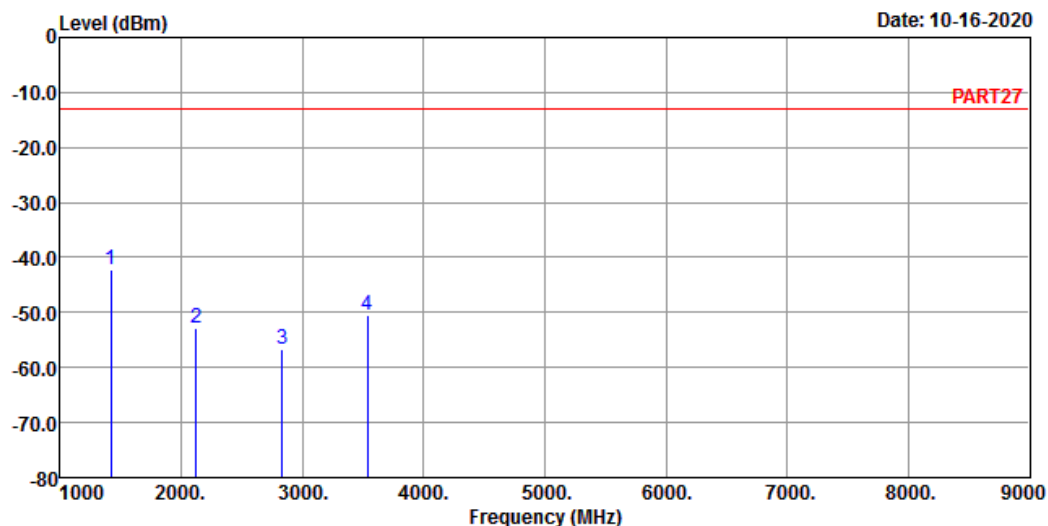


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | dB     | Limit Remark |
| 1 pp | 1415.00 | -42.24 | -30.16     | -13.00 | -12.08 | -29.24 Peak  |
| 2    | 2122.50 | -52.88 | -43.01     | -13.00 | -9.87  | -39.88 Peak  |
| 3    | 2830.00 | -56.76 | -48.28     | -13.00 | -8.48  | -43.76 Peak  |
| 4    | 3537.50 | -50.49 | -43.27     | -13.00 | -7.22  | -37.49 Peak  |

# High Channel

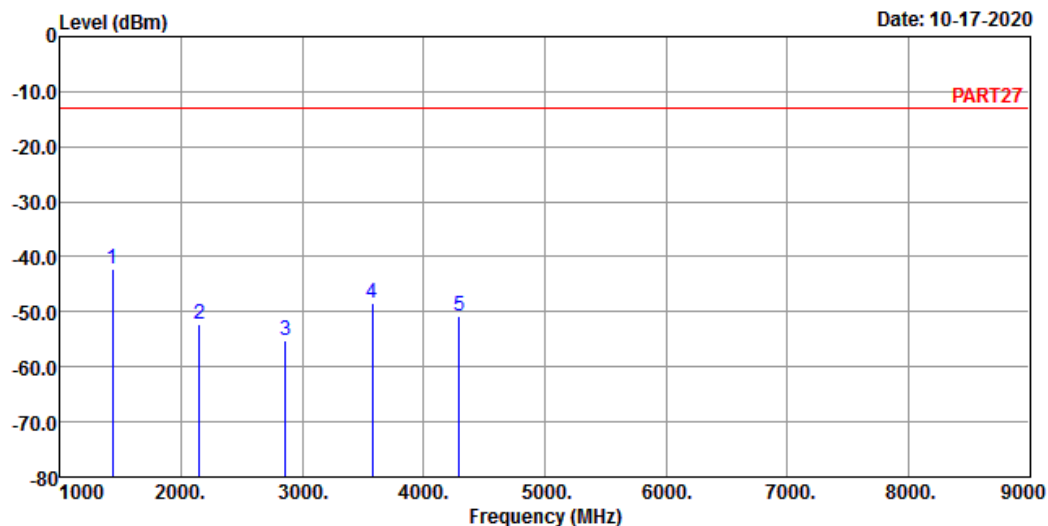


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-17-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1430.60 | -42.16 | -29.85     | -13.00     | -12.31 | -29.16     | Peak   |
| 2    | 2145.90 | -52.40 | -42.93     | -13.00     | -9.47  | -39.40     | Peak   |
| 3    | 2861.20 | -55.15 | -46.72     | -13.00     | -8.43  | -42.15     | Peak   |
| 4    | 3576.50 | -48.39 | -41.40     | -13.00     | -6.99  | -35.39     | Peak   |
| 5    | 4291.80 | -50.87 | -45.38     | -13.00     | -5.49  | -37.87     | Peak   |

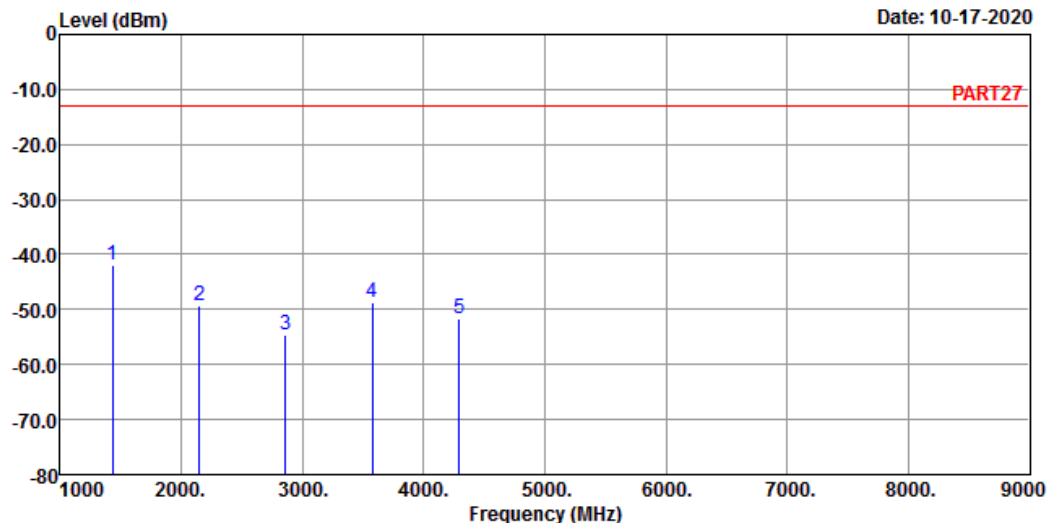


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-17-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Over Factor | Limit  | Remark |
|------|---------|--------|------------|------------|-------------|--------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB          | dB     |        |
| 1 pp | 1430.60 | -41.81 | -29.50     | -13.00     | -12.31      | -28.81 | Peak   |
| 2    | 2145.90 | -49.33 | -39.86     | -13.00     | -9.47       | -36.33 | Peak   |
| 3    | 2861.20 | -54.71 | -46.28     | -13.00     | -8.43       | -41.71 | Peak   |
| 4    | 3576.50 | -48.59 | -41.60     | -13.00     | -6.99       | -35.59 | Peak   |
| 5    | 4291.80 | -51.60 | -46.11     | -13.00     | -5.49       | -38.60 | Peak   |

Channel Bandwidth: 5 MHz / QPSK  
Low Channel

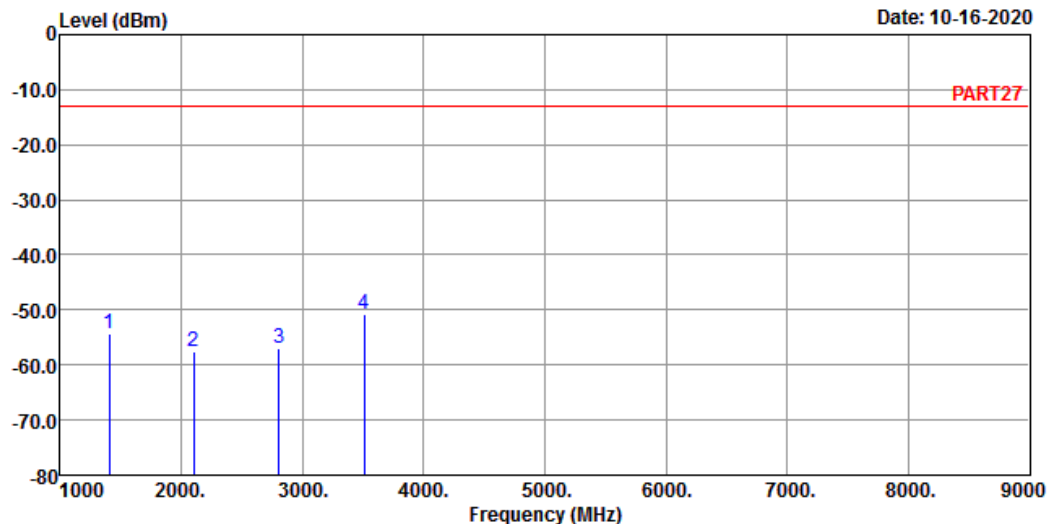


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 12 QPSK\_5M Link\_L-CH  
Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 1403.00 | -54.29 | -42.38     | -13.00     | -11.91 | -41.29     | Peak   |
| 2    | 2104.50 | -57.63 | -47.47     | -13.00     | -10.16 | -44.63     | Peak   |
| 3    | 2806.00 | -56.84 | -48.32     | -13.00     | -8.52  | -43.84     | Peak   |
| 4 pp | 3507.50 | -50.69 | -43.24     | -13.00     | -7.45  | -37.69     | Peak   |

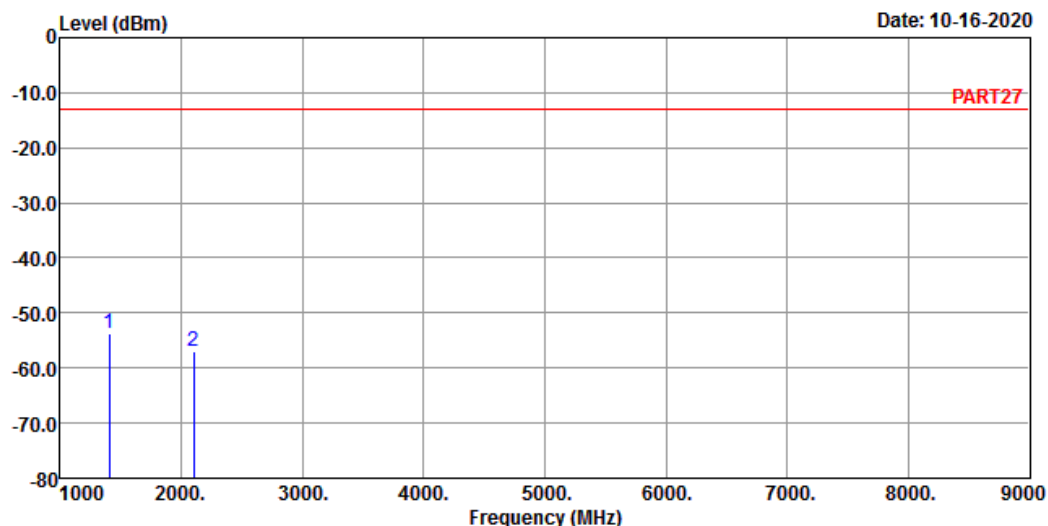


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | dB     | Limit Remark |
| 1 pp | 1403.00 | -53.68 | -41.77     | -13.00 | -11.91 | -40.68 Peak  |
| 2    | 2104.50 | -56.95 | -46.79     | -13.00 | -10.16 | -43.95 Peak  |

# Middle Channel

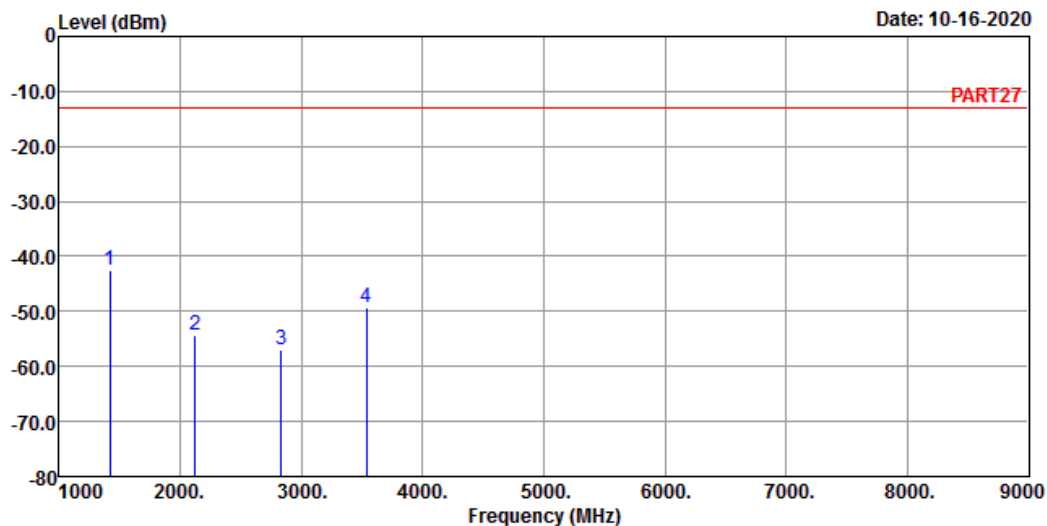


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1415.00 | -42.48 | -30.40     | -13.00     | -12.08 | -29.48     | Peak   |
| 2    | 2122.50 | -54.21 | -44.34     | -13.00     | -9.87  | -41.21     | Peak   |
| 3    | 2830.00 | -56.94 | -48.46     | -13.00     | -8.48  | -43.94     | Peak   |
| 4    | 3537.50 | -49.35 | -42.13     | -13.00     | -7.22  | -36.35     | Peak   |

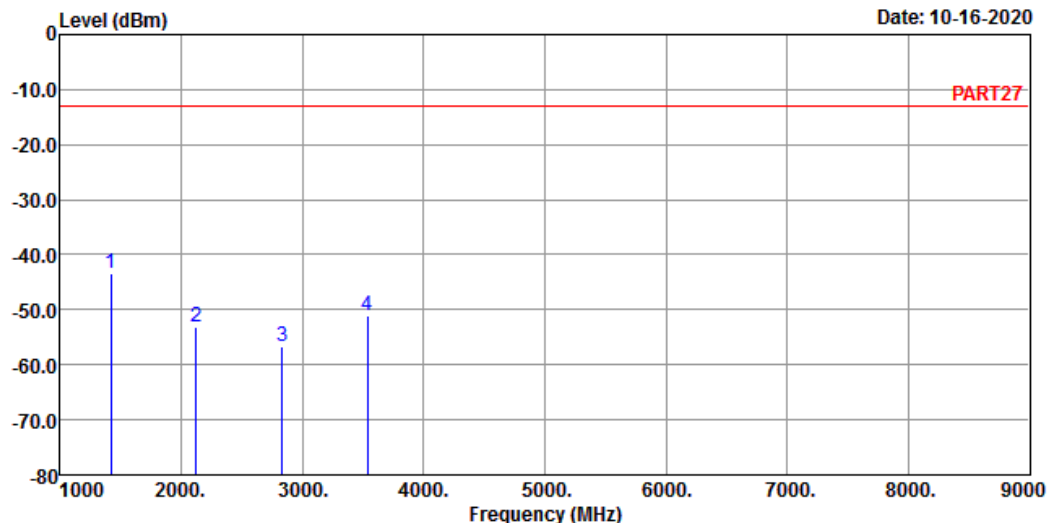


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1415.00 | -43.44 | -31.36     | -13.00 | -12.08      | -30.44     | Peak   |
| 2    | 2122.50 | -53.28 | -43.41     | -13.00 | -9.87       | -40.28     | Peak   |
| 3    | 2830.00 | -56.62 | -48.14     | -13.00 | -8.48       | -43.62     | Peak   |
| 4    | 3537.50 | -51.06 | -43.84     | -13.00 | -7.22       | -38.06     | Peak   |

# High Channel

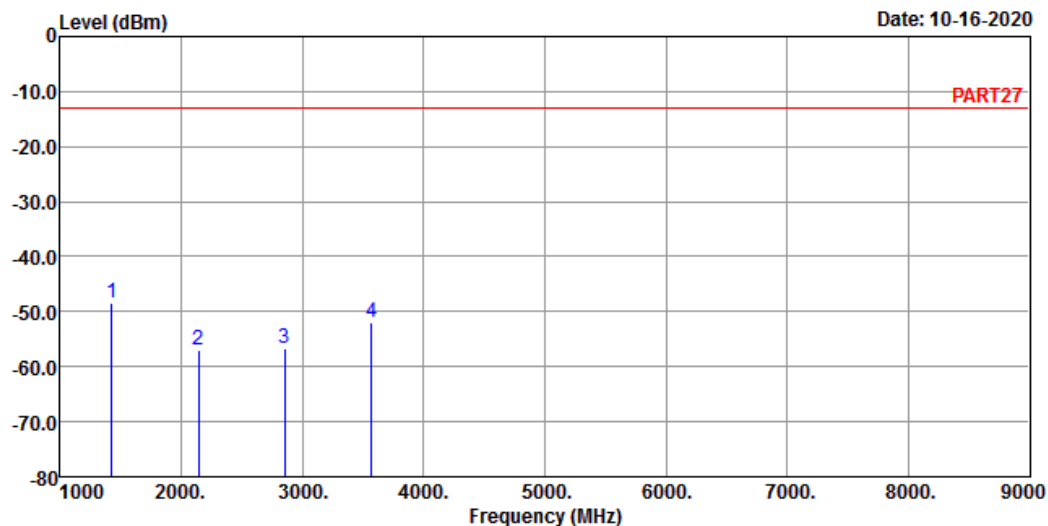


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | dB     | Limit Remark |
| 1 pp | 1427.00 | -48.48 | -36.23     | -13.00 | -12.25 | -35.48 Peak  |
| 2    | 2140.50 | -56.86 | -47.29     | -13.00 | -9.57  | -43.86 Peak  |
| 3    | 2854.00 | -56.59 | -48.15     | -13.00 | -8.44  | -43.59 Peak  |
| 4    | 3567.50 | -52.06 | -45.07     | -13.00 | -6.99  | -39.06 Peak  |



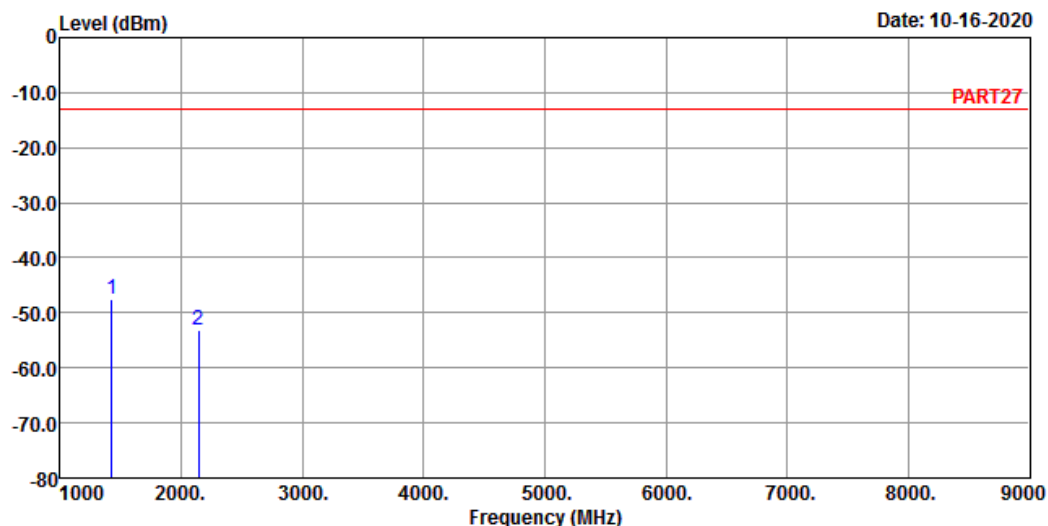


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | dB     | Limit Remark |
| 1 pp | 1427.00 | -47.42 | -35.17     | -13.00 | -12.25 | -34.42 Peak  |
| 2    | 2140.50 | -53.06 | -43.49     | -13.00 | -9.57  | -40.06 Peak  |

Channel Bandwidth: 10 MHz / QPSK

Low Channel

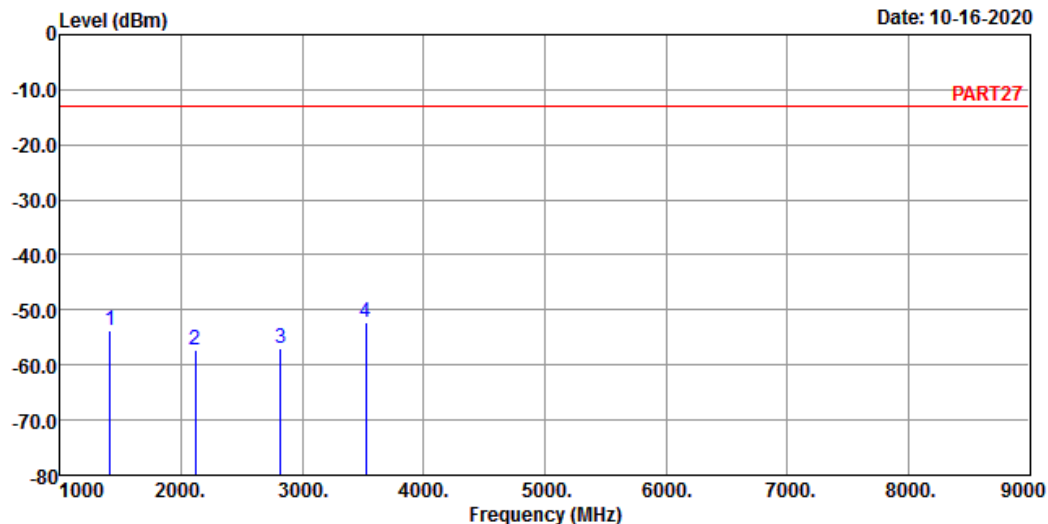


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 1408.00 | -53.84 | -41.88     | -13.00 | -11.96      | -40.84     | Peak   |
| 2    | 2112.00 | -57.34 | -47.38     | -13.00 | -9.96       | -44.34     | Peak   |
| 3    | 2816.00 | -57.08 | -48.59     | -13.00 | -8.49       | -44.08     | Peak   |
| 4 pp | 3520.00 | -52.39 | -45.01     | -13.00 | -7.38       | -39.39     | Peak   |

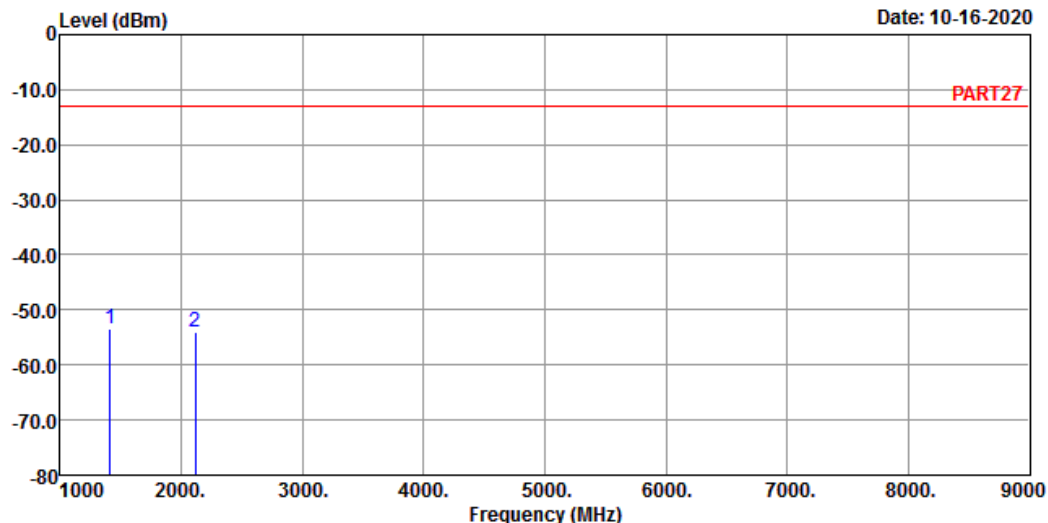


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1 pp | 1408.00 | -53.41 | -41.45 | -13.00 | -11.96 | -40.41 | Peak   |
| 2    | 2112.00 | -53.95 | -43.99 | -13.00 | -9.96  | -40.95 | Peak   |

# Middle Channel

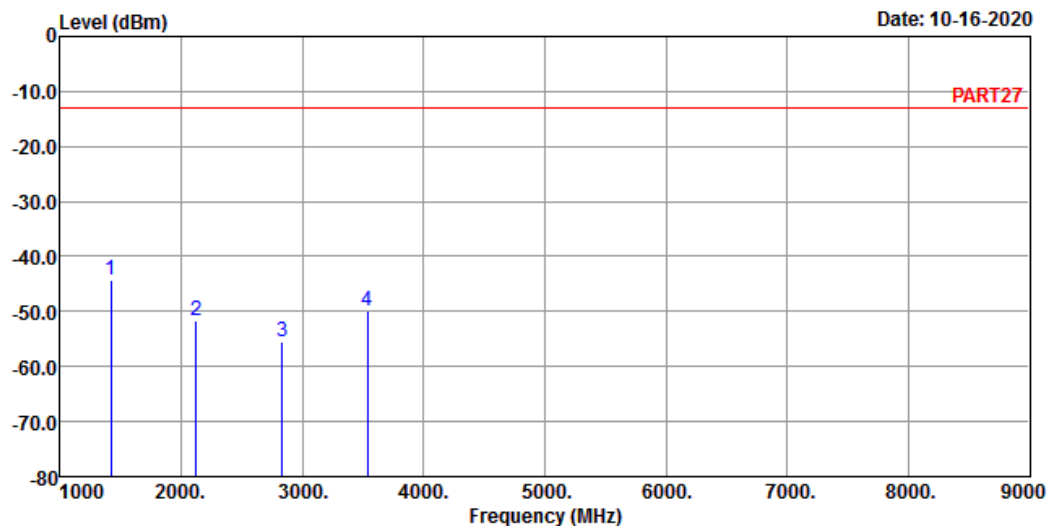


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1415.00 | -44.27 | -32.19     | -13.00     | -12.08 | -31.27     | Peak   |
| 2    | 2122.50 | -51.79 | -41.92     | -13.00     | -9.87  | -38.79     | Peak   |
| 3    | 2830.00 | -55.57 | -47.09     | -13.00     | -8.48  | -42.57     | Peak   |
| 4    | 3537.50 | -49.96 | -42.74     | -13.00     | -7.22  | -36.96     | Peak   |

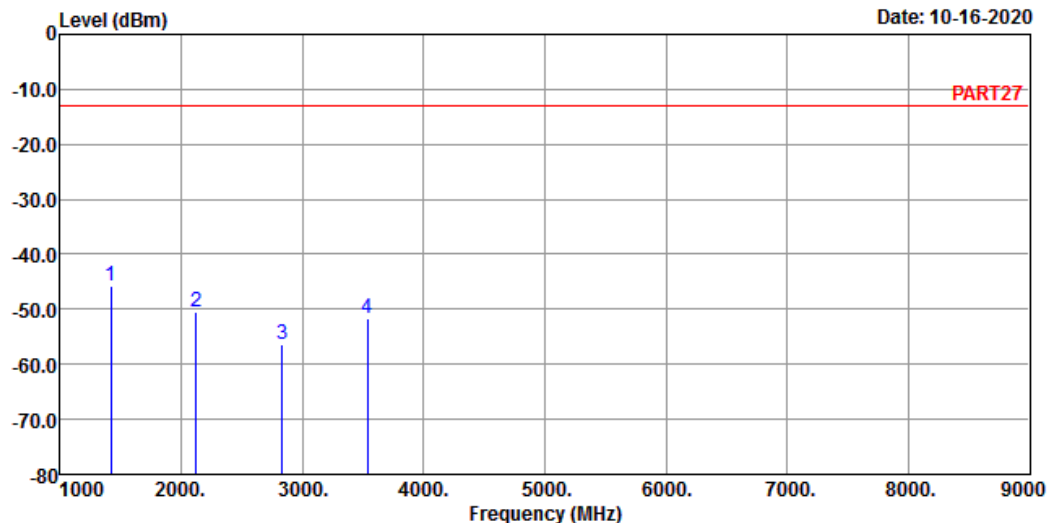


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1415.00 | -45.63 | -33.55     | -13.00 | -12.08      | -32.63     | Peak   |
| 2    | 2120.00 | -50.38 | -40.51     | -13.00 | -9.87       | -37.38     | Peak   |
| 3    | 2830.00 | -56.40 | -47.92     | -13.00 | -8.48       | -43.40     | Peak   |
| 4    | 3537.50 | -51.76 | -44.54     | -13.00 | -7.22       | -38.76     | Peak   |

## High Channel

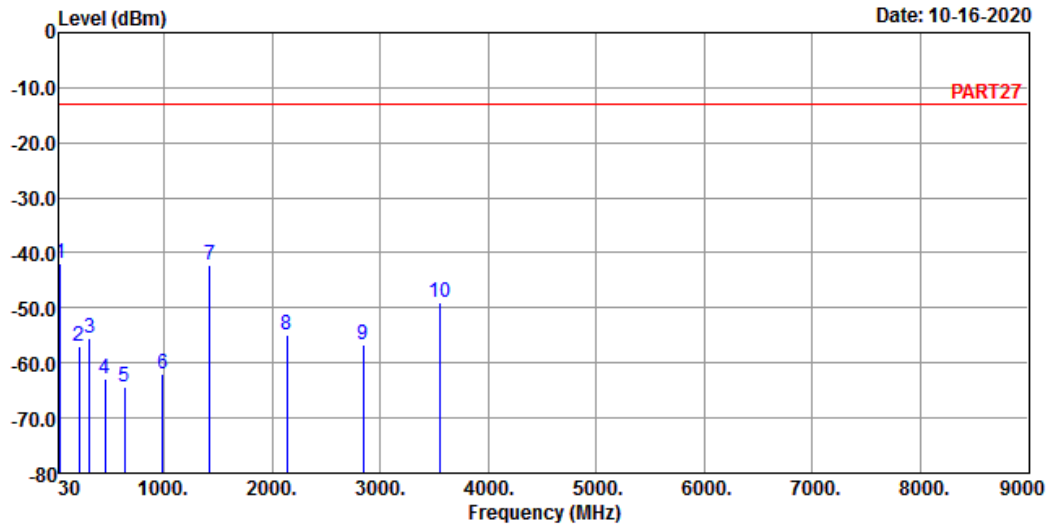


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Cyril Chen

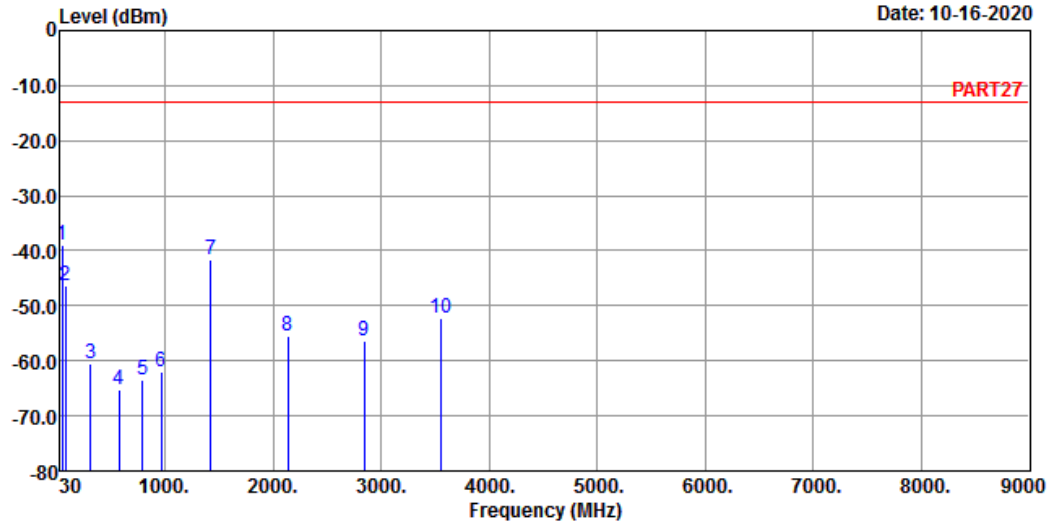
|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
|      |         |        |            |        | dB     | dB           |
| 1 pp | 42.61   | -41.94 | -41.00     | -13.00 | -0.94  | -28.94 Peak  |
| 2    | 210.42  | -57.02 | -49.43     | -13.00 | -7.59  | -44.02 Peak  |
| 3    | 307.42  | -55.47 | -48.58     | -13.00 | -6.89  | -42.47 Peak  |
| 4    | 451.95  | -62.78 | -57.27     | -13.00 | -5.51  | -49.78 Peak  |
| 5    | 633.34  | -64.27 | -63.43     | -13.00 | -0.84  | -51.27 Peak  |
| 6    | 986.42  | -62.03 | -65.13     | -13.00 | 3.10   | -49.03 Peak  |
| 7    | 1422.00 | -42.32 | -30.13     | -13.00 | -12.19 | -29.32 Peak  |
| 8    | 2133.00 | -55.04 | -45.37     | -13.00 | -9.67  | -42.04 Peak  |
| 9    | 2844.00 | -56.69 | -48.23     | -13.00 | -8.46  | -43.69 Peak  |
| 10   | 3555.00 | -48.97 | -41.82     | -13.00 | -7.15  | -35.97 Peak  |



# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Over Factor | Limit  | Remark |
|------|---------|--------|------------|------------|-------------|--------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB          | dB     |        |
| 1 pp | 43.58   | -39.01 | -37.54     | -13.00     | -1.47       | -26.01 | Peak   |
| 2    | 76.56   | -46.27 | -36.29     | -13.00     | -9.98       | -33.27 | Peak   |
| 3    | 307.42  | -60.60 | -53.71     | -13.00     | -6.89       | -47.60 | Peak   |
| 4    | 575.14  | -65.27 | -63.47     | -13.00     | -1.80       | -52.27 | Peak   |
| 5    | 788.54  | -63.60 | -64.37     | -13.00     | 0.77        | -50.60 | Peak   |
| 6    | 965.08  | -62.11 | -64.46     | -13.00     | 2.35        | -49.11 | Peak   |
| 7    | 1422.00 | -41.55 | -29.36     | -13.00     | -12.19      | -28.55 | Peak   |
| 8    | 2133.00 | -55.44 | -45.77     | -13.00     | -9.67       | -42.44 | Peak   |
| 9    | 2844.00 | -56.50 | -48.04     | -13.00     | -8.46       | -43.50 | Peak   |
| 10   | 3555.00 | -52.34 | -45.19     | -13.00     | -7.15       | -39.34 | Peak   |

Mode B

WCDMA:

Low Channel

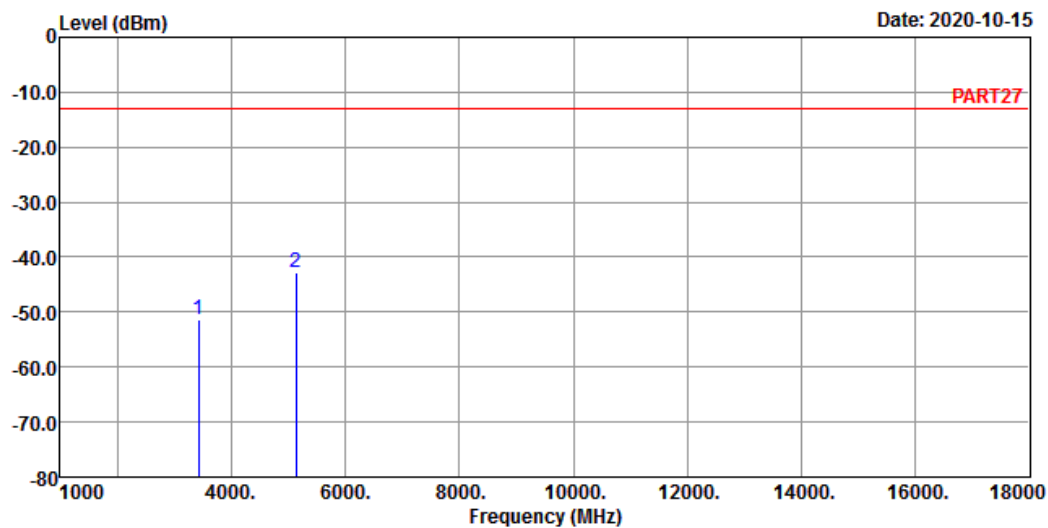


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 2020-10-15



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : WCDMA Band 4 Link\_L-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 3424.80 | -51.30 | -42.96     | -13.00 | -8.34       | -38.30     | Peak   |
| 2 pp | 5137.20 | -42.71 | -40.97     | -13.00 | -1.74       | -29.71     | Peak   |



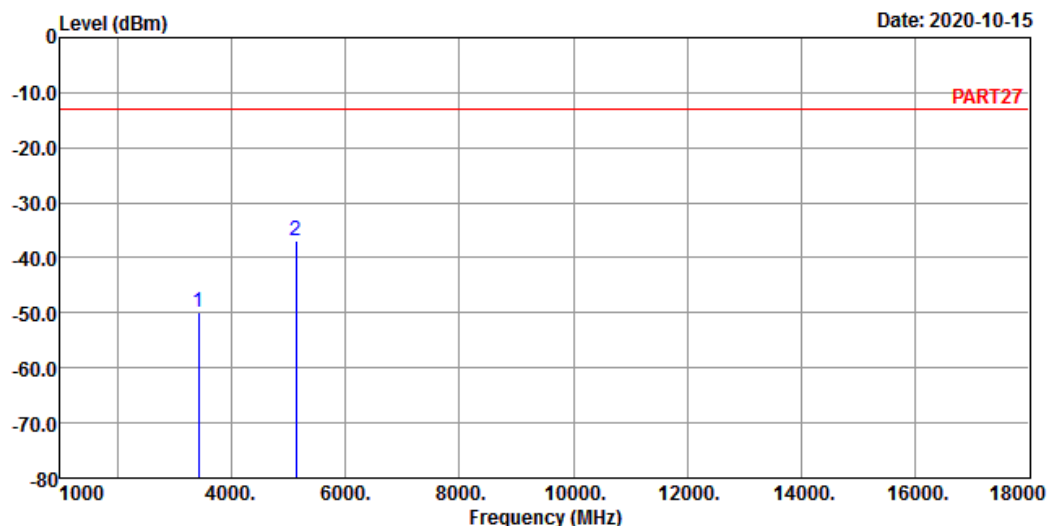


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-10-15



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_L-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 3424.80 | -49.81 | -41.47     | -13.00 | -8.34       | -36.81     | Peak   |
| 2 pp | 5137.20 | -37.02 | -35.28     | -13.00 | -1.74       | -24.02     | Peak   |

# Middle Channel

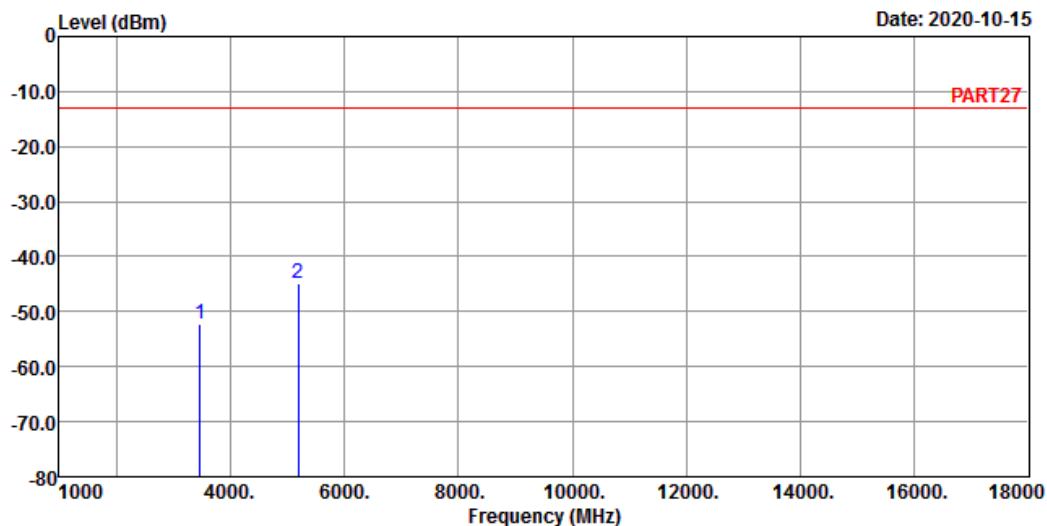


Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch

A D T

Data: 3

Date: 2020-10-15



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : WCDMA Band 4 Link\_M-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.20 | -52.30 | -44.42     | -13.00     | -7.88  | -39.30     | Peak   |
| 2 pp | 5197.80 | -44.87 | -42.80     | -13.00     | -2.07  | -31.87     | Peak   |

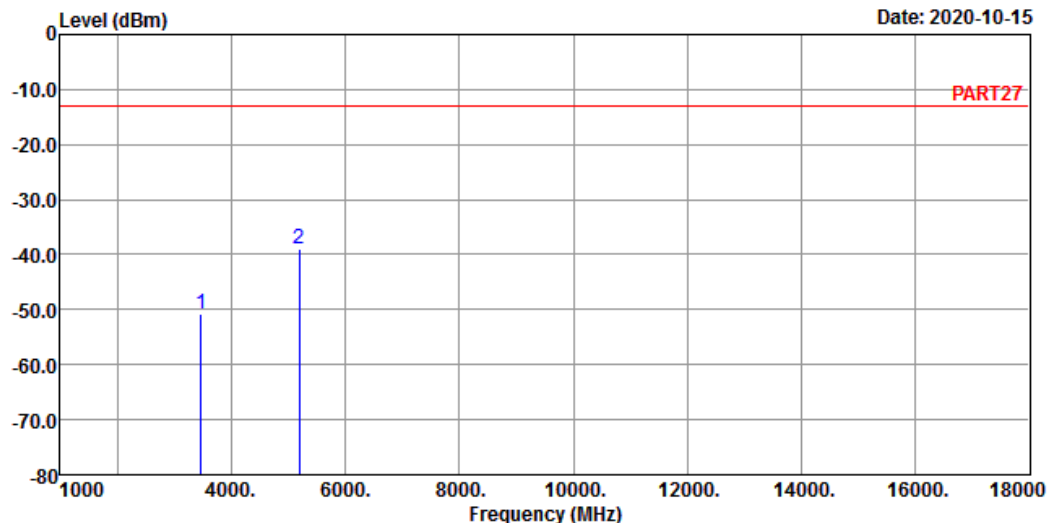


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 2020-10-15



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_M-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.20 | -50.63 | -42.75     | -13.00     | -7.88  | -37.63     | Peak   |
| 2 pp | 5197.80 | -38.82 | -36.75     | -13.00     | -2.07  | -25.82     | Peak   |

# High Channel

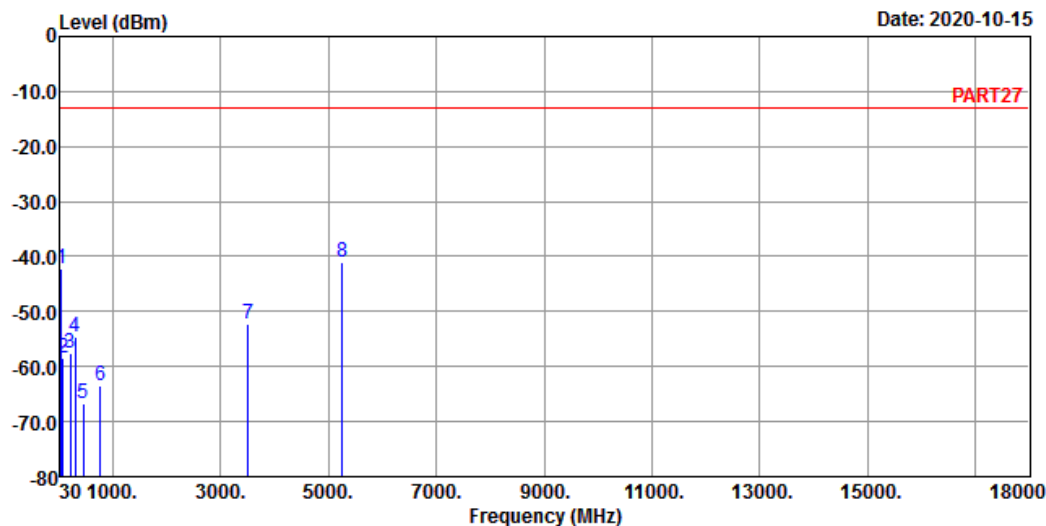


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 2020-10-15



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : WCDMA Band 4 Link\_H-CH  
Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 42.61   | -42.28 | -41.34     | -13.00     | -0.94  | -29.28     | Peak   |
| 2    | 80.44   | -58.40 | -47.52     | -13.00     | -10.88 | -45.40     | Peak   |
| 3    | 211.39  | -57.68 | -50.13     | -13.00     | -7.55  | -44.68     | Peak   |
| 4    | 308.39  | -54.51 | -47.63     | -13.00     | -6.88  | -41.51     | Peak   |
| 5    | 457.77  | -66.76 | -61.35     | -13.00     | -5.41  | -53.76     | Peak   |
| 6    | 778.84  | -63.55 | -64.35     | -13.00     | 0.80   | -50.55     | Peak   |
| 7    | 3505.20 | -52.20 | -44.75     | -13.00     | -7.45  | -39.20     | Peak   |
| 8 pp | 5257.80 | -41.11 | -38.59     | -13.00     | -2.52  | -28.11     | Peak   |

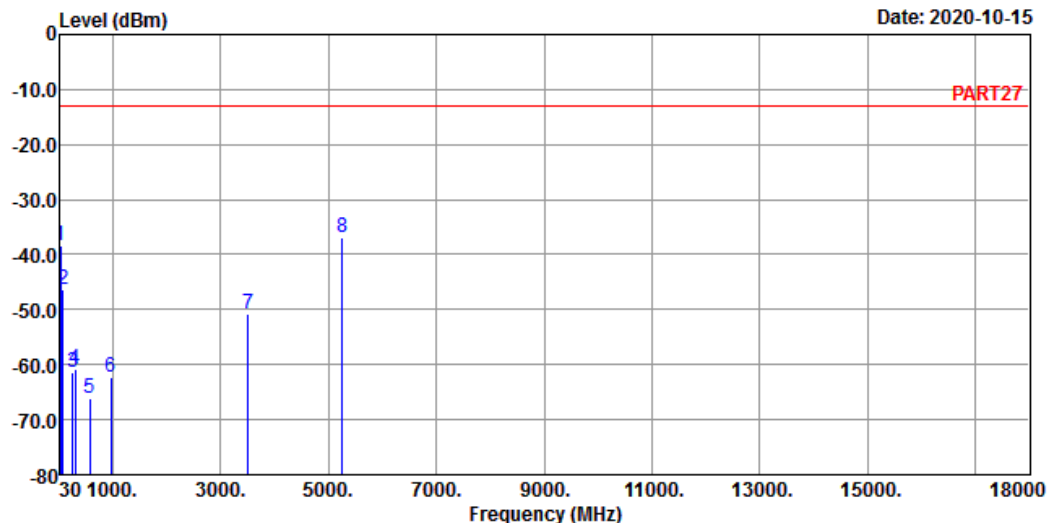


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2020-10-15



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : WCDMA Band 4 Link\_H-CH

Tested by: tim-chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 41.64   | -38.48 | -38.07     | -13.00     | -0.41  | -25.48     | Peak   |
| 2    | 76.56   | -46.29 | -36.31     | -13.00     | -9.98  | -33.29     | Peak   |
| 3    | 259.89  | -61.30 | -55.11     | -13.00     | -6.19  | -48.30     | Peak   |
| 4    | 309.36  | -60.87 | -54.01     | -13.00     | -6.86  | -47.87     | Peak   |
| 5    | 576.11  | -66.24 | -64.48     | -13.00     | -1.76  | -53.24     | Peak   |
| 6    | 969.93  | -62.31 | -64.83     | -13.00     | 2.52   | -49.31     | Peak   |
| 7    | 3505.20 | -50.78 | -43.33     | -13.00     | -7.45  | -37.78     | Peak   |
| 8 pp | 5257.80 | -36.85 | -34.33     | -13.00     | -2.52  | -23.85     | Peak   |

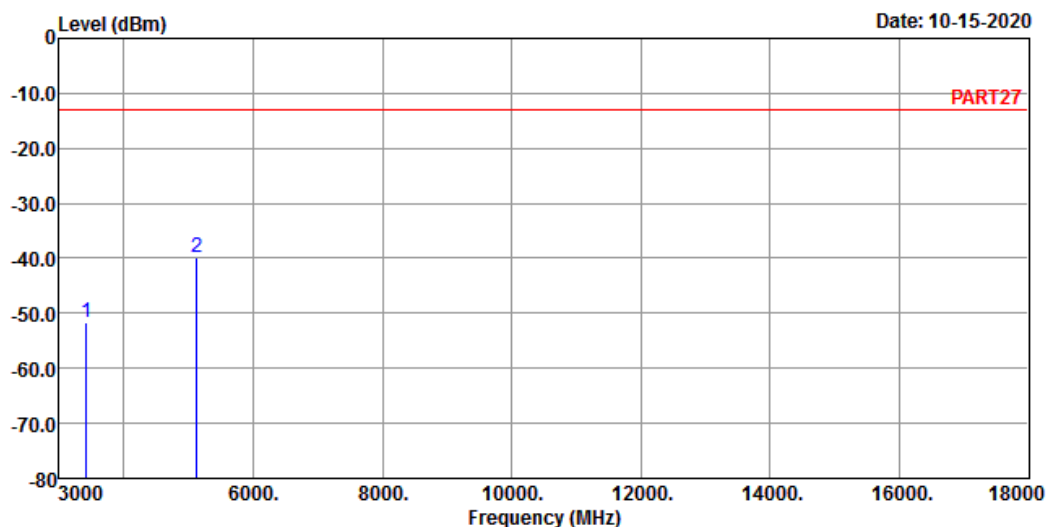
**LTE Band 4**  
**Channel Bandwidth: 1.4 MHz / QPSK**  
**Low Channel**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
Condition: PART27 HORIZONTAL  
Remak : LTE Band 4 QPSK\_1.4M Link\_L-CH  
Tested by: Cyril Chen

|      |         | Read   | Limit  |        | Over  |             |
|------|---------|--------|--------|--------|-------|-------------|
| Freq | Level   | Level  | Line   | Factor | Limit | Remark      |
| MHz  | dBm     | dBm    | dBm    | dB     | dB    |             |
| 1    | 3421.40 | -51.68 | -43.34 | -13.00 | -8.34 | -38.68 Peak |
| 2 pp | 5132.10 | -39.80 | -38.06 | -13.00 | -1.74 | -26.80 Peak |

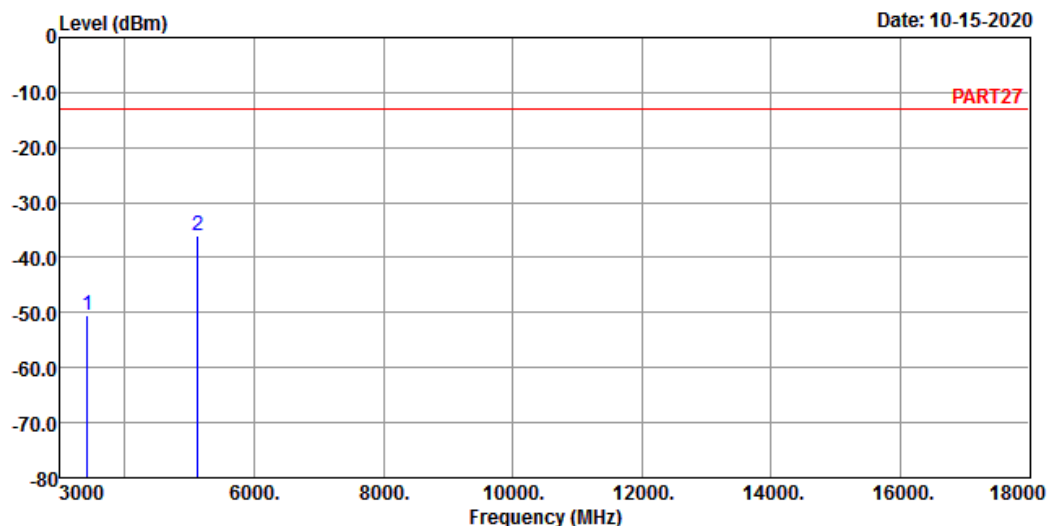


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3421.40 | -50.60 | -42.26     | -13.00     | -8.34  | -37.60     | Peak   |
| 2 pp | 5132.10 | -36.12 | -34.38     | -13.00     | -1.74  | -23.12     | Peak   |

# Middle Channel

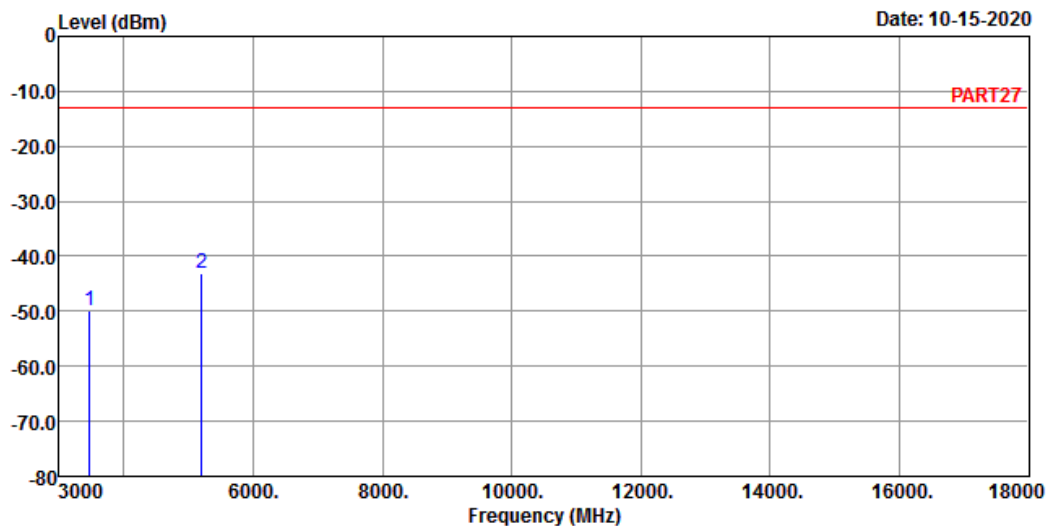


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3465.00 | -49.94 | -42.06 | -13.00 | -7.88  | -36.94 | Peak   |
| 2 pp | 5197.50 | -43.22 | -41.15 | -13.00 | -2.07  | -30.22 | Peak   |



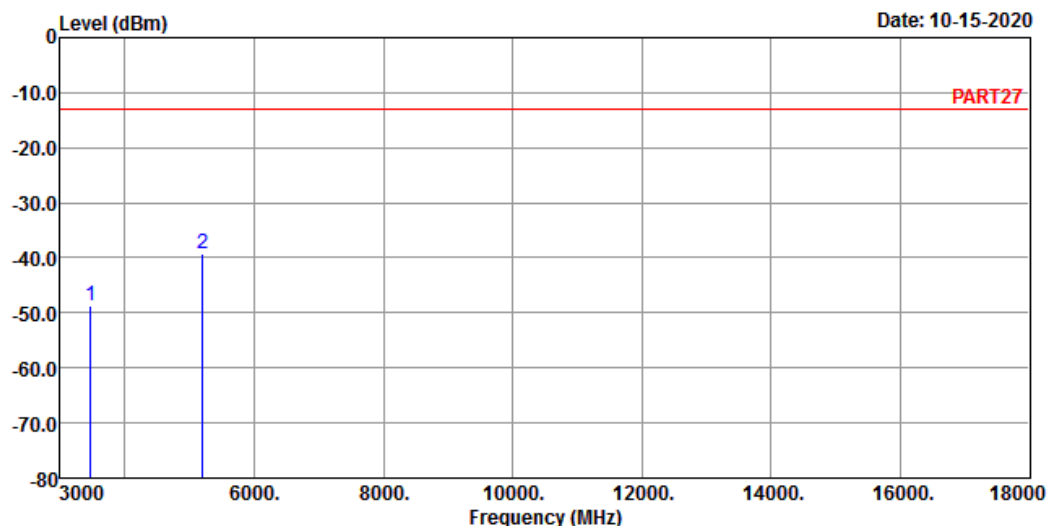


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -48.83 | -40.95     | -13.00     | -7.88  | -35.83     | Peak   |
| 2 pp | 5197.50 | -39.21 | -37.14     | -13.00     | -2.07  | -26.21     | Peak   |

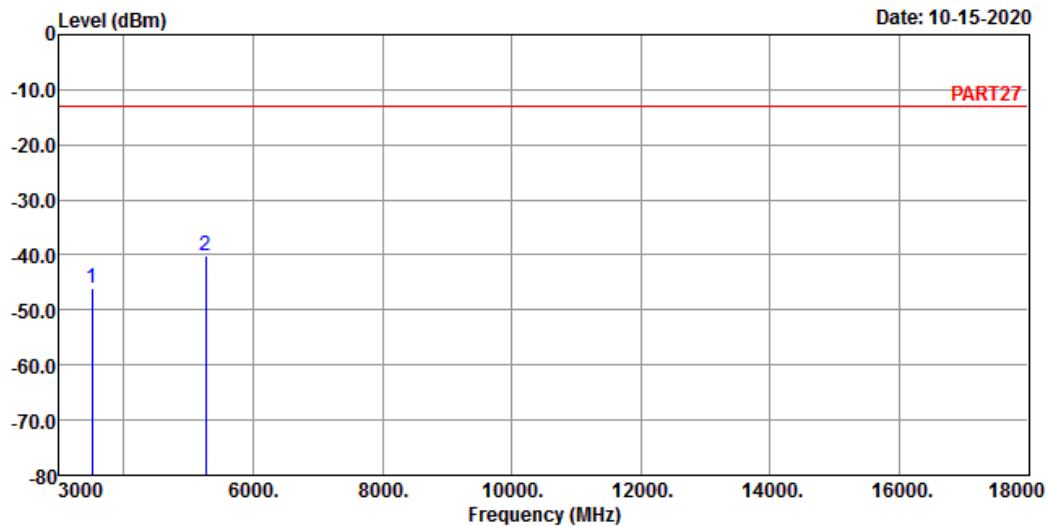
## High Channel



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3508.60 | -45.97 | -38.52 | -13.00 | -7.45  | -32.97 | Peak   |
| 2 pp | 5262.90 | -40.11 | -37.59 | -13.00 | -2.52  | -27.11 | Peak   |

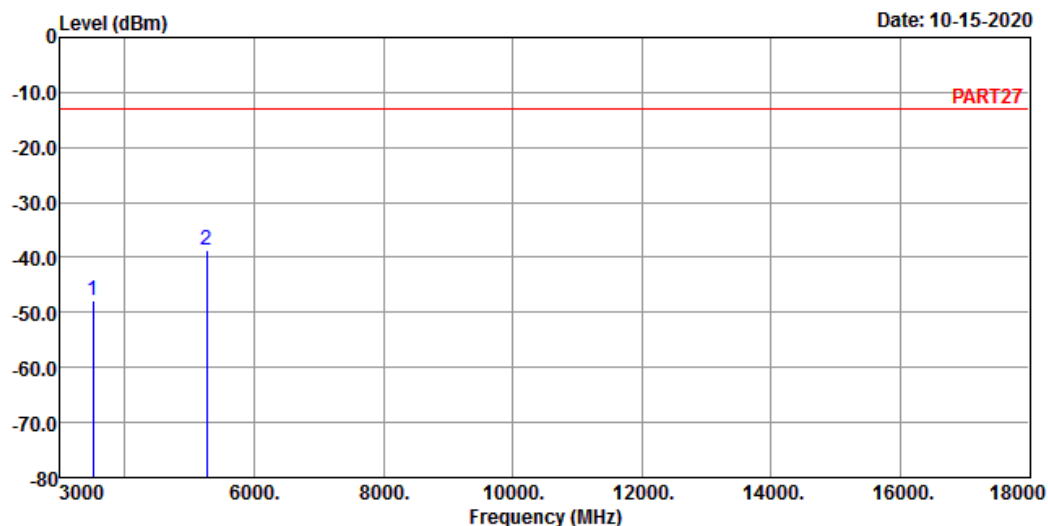


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3508.60 | -47.79 | -40.34     | -13.00     | -7.45  | -34.79     | Peak   |
| 2 pp | 5262.90 | -38.70 | -36.18     | -13.00     | -2.52  | -25.70     | Peak   |

Channel Bandwidth: 5 MHz / QPSK

Low Channel

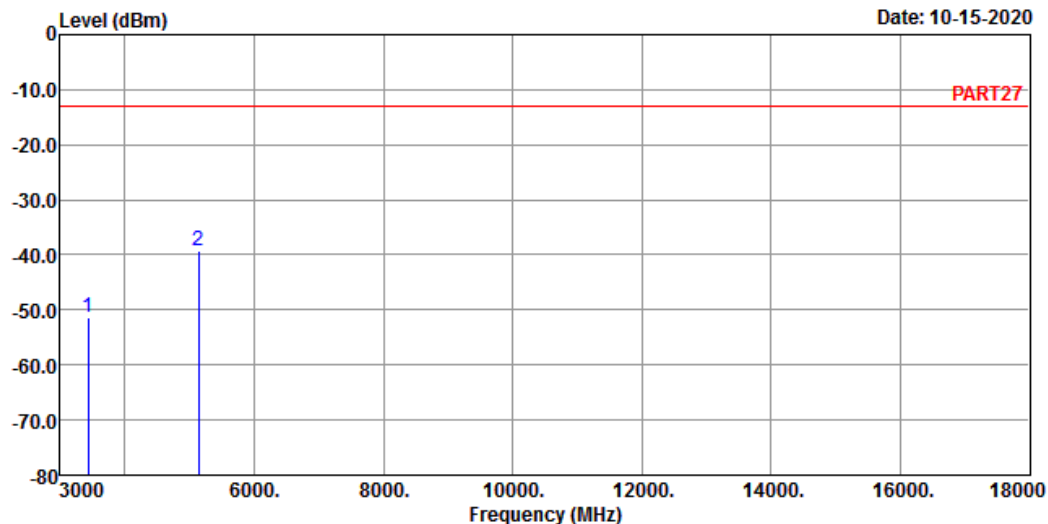


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over  |             |
|------|---------|--------|------------|--------|-------|-------------|
|      | MHz     | dBm    | dBm        | dBm    | dB    | dB          |
| 1    | 3425.00 | -51.49 | -43.15     | -13.00 | -8.34 | -38.49 Peak |
| 2 pp | 5137.50 | -39.35 | -37.61     | -13.00 | -1.74 | -26.35 Peak |

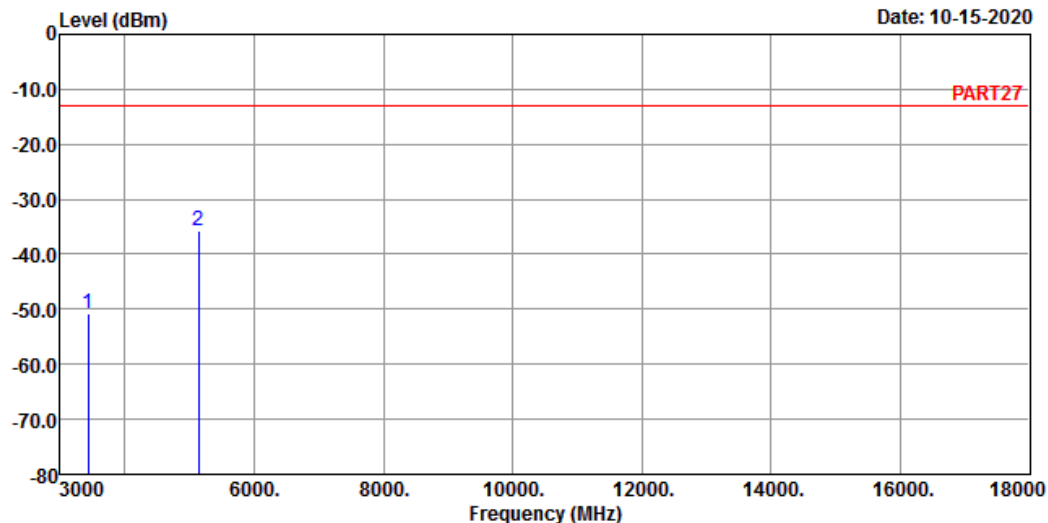


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3425.00 | -50.78 | -42.44     | -13.00     | -8.34  | -37.78     | Peak   |
| 2 pp | 5137.50 | -35.76 | -34.02     | -13.00     | -1.74  | -22.76     | Peak   |

# Middle Channel

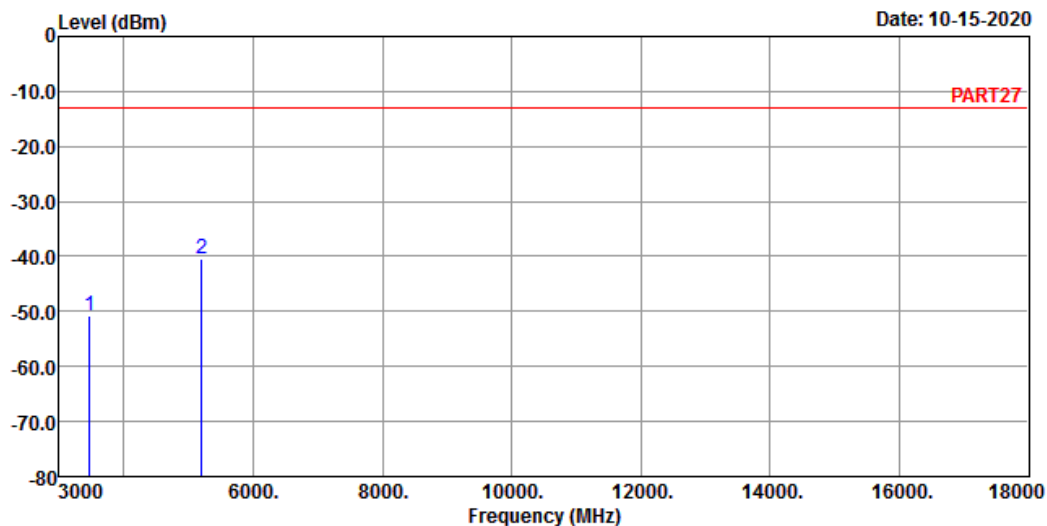


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3465.00 | -50.69 | -42.81 | -13.00 | -7.88  | -37.69 | Peak   |
| 2 pp | 5197.50 | -40.32 | -38.25 | -13.00 | -2.07  | -27.32 | Peak   |

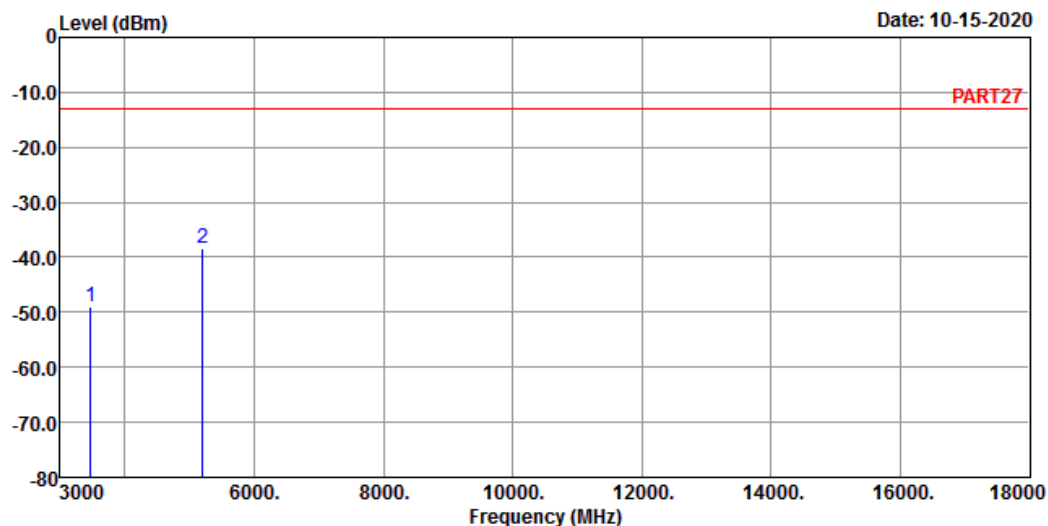


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -49.00 | -41.12     | -13.00     | -7.88  | -36.00     | Peak   |
| 2 pp | 5197.50 | -38.49 | -36.42     | -13.00     | -2.07  | -25.49     | Peak   |

# High Channel

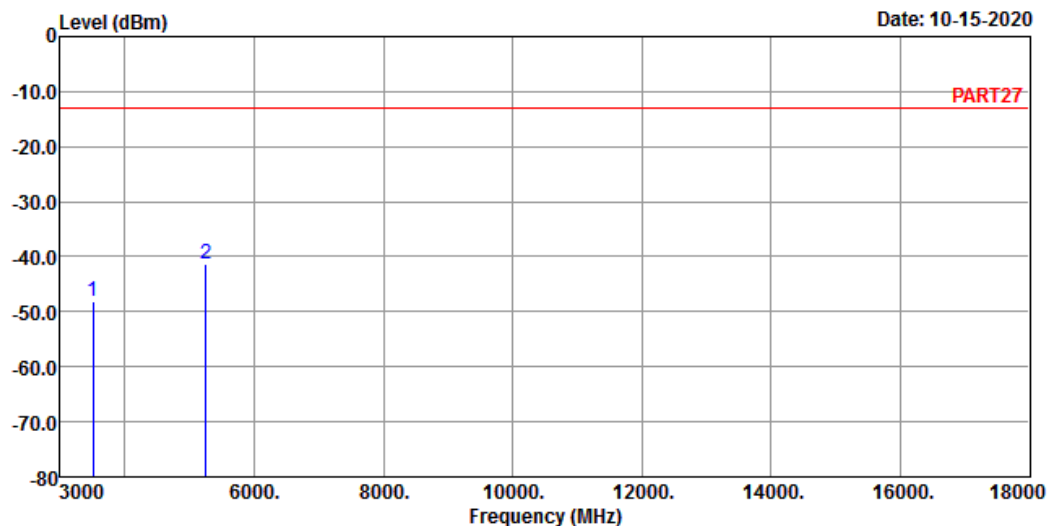


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3505.00 | -48.17 | -40.72 | -13.00 | -7.45  | -35.17 | Peak   |
| 2 pp | 5257.50 | -41.47 | -38.95 | -13.00 | -2.52  | -28.47 | Peak   |



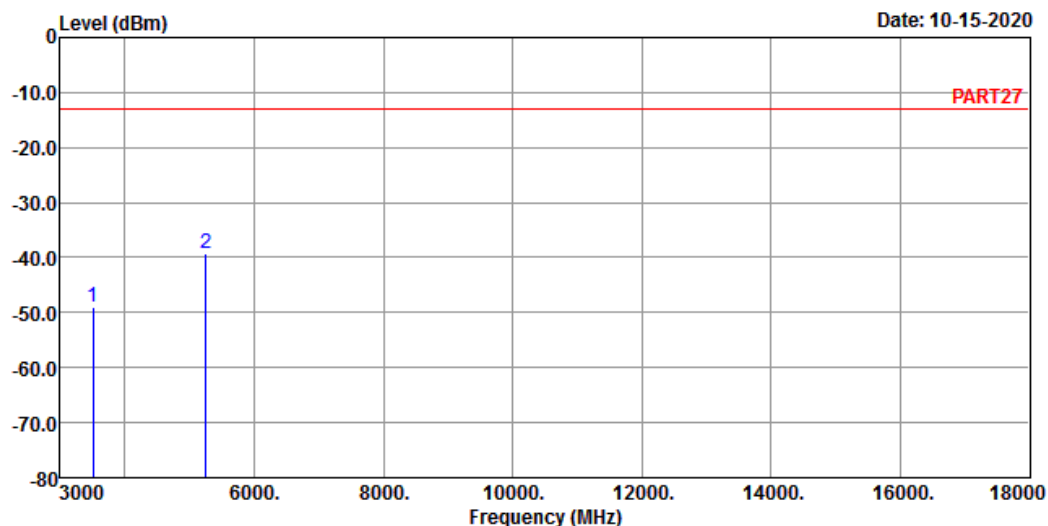


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3505.00 | -49.03 | -41.58     | -13.00     | -7.45  | -36.03     | Peak   |
| 2 pp | 5257.50 | -39.18 | -36.66     | -13.00     | -2.52  | -26.18     | Peak   |

Channel Bandwidth: 20 MHz / QPSK

Low Channel

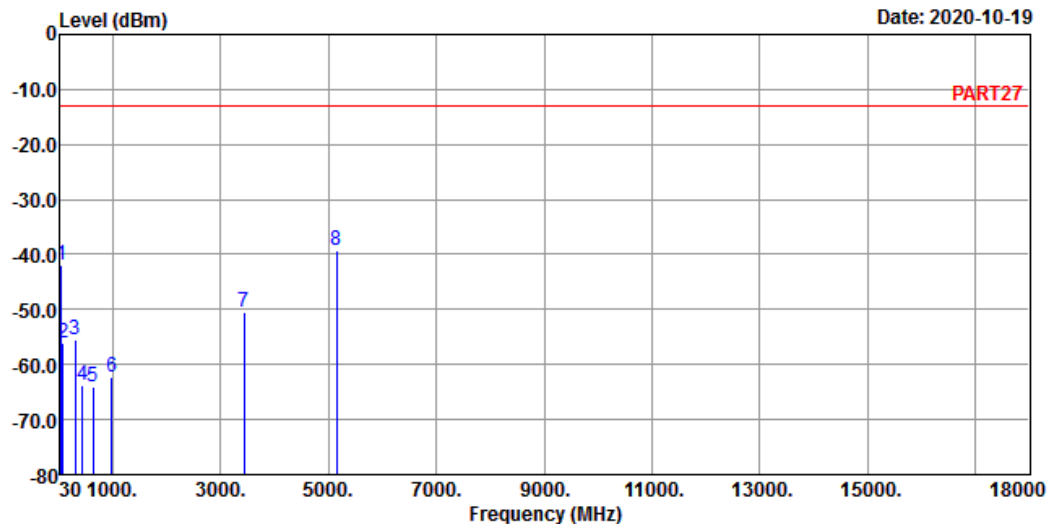


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 2020-10-19



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 42.61   | -41.95 | -41.01     | -13.00 | -0.94       | -28.95     | Peak   |
| 2    | 77.53   | -56.15 | -45.95     | -13.00 | -10.20      | -43.15     | Peak   |
| 3    | 309.36  | -55.45 | -48.59     | -13.00 | -6.86       | -42.45     | Peak   |
| 4    | 448.07  | -63.76 | -58.19     | -13.00 | -5.57       | -50.76     | Peak   |
| 5    | 641.10  | -64.16 | -63.30     | -13.00 | -0.86       | -51.16     | Peak   |
| 6    | 975.75  | -62.15 | -64.87     | -13.00 | 2.72        | -49.15     | Peak   |
| 7    | 3440.00 | -50.53 | -42.31     | -13.00 | -8.22       | -37.53     | Peak   |
| 8 pp | 5160.00 | -39.39 | -37.48     | -13.00 | -1.91       | -26.39     | Peak   |

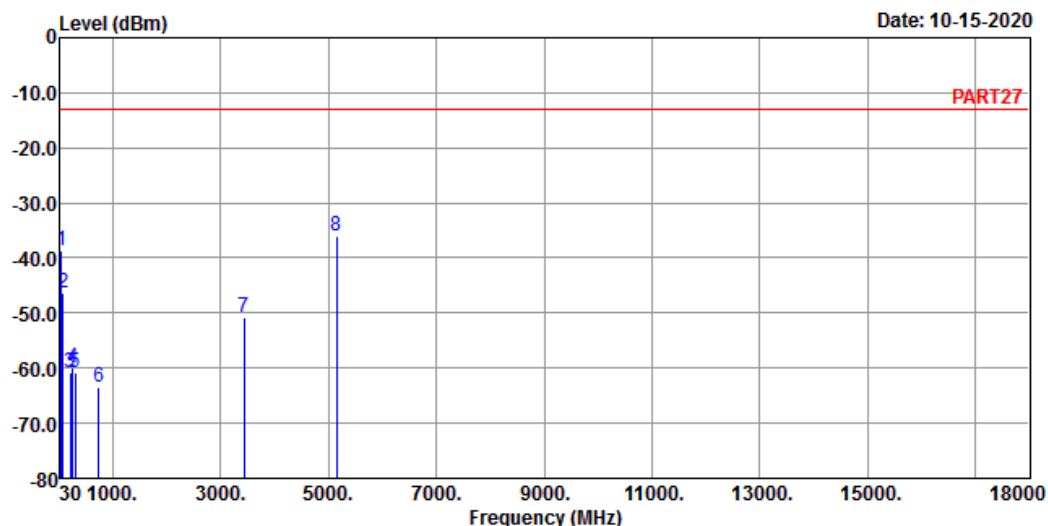


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
| 1    | 42.61   | -38.80 | -37.86     | -13.00 | -0.94  | -25.80 Peak  |
| 2    | 76.56   | -46.26 | -36.28     | -13.00 | -9.98  | -33.26 Peak  |
| 3    | 220.12  | -60.88 | -53.68     | -13.00 | -7.20  | -47.88 Peak  |
| 4    | 259.89  | -60.05 | -53.86     | -13.00 | -6.19  | -47.05 Peak  |
| 5    | 309.36  | -60.87 | -54.01     | -13.00 | -6.86  | -47.87 Peak  |
| 6    | 736.16  | -63.60 | -64.21     | -13.00 | 0.61   | -50.60 Peak  |
| 7    | 3440.00 | -50.78 | -42.56     | -13.00 | -8.22  | -37.78 Peak  |
| 8 pp | 5160.00 | -35.99 | -34.08     | -13.00 | -1.91  | -22.99 Peak  |

# Middle Channel

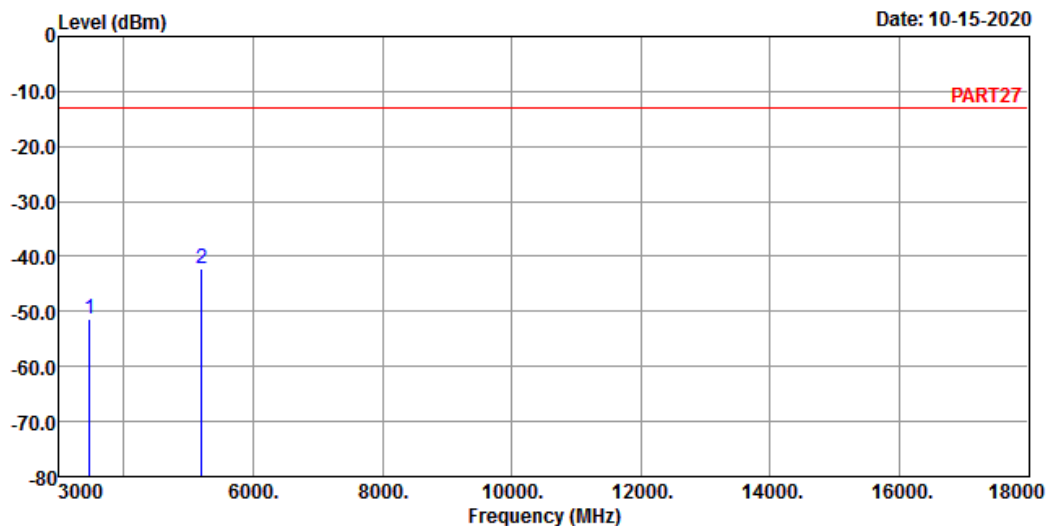


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Cyril Chen

|      |         |        | Read   | Limit  |        | Over   |        |
|------|---------|--------|--------|--------|--------|--------|--------|
|      | Freq    | Level  | Level  | Line   | Factor | Limit  | Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB     |        |
| 1    | 3465.00 | -51.49 | -43.61 | -13.00 | -7.88  | -38.49 | Peak   |
| 2 pp | 5197.50 | -42.23 | -40.16 | -13.00 | -2.07  | -29.23 | Peak   |

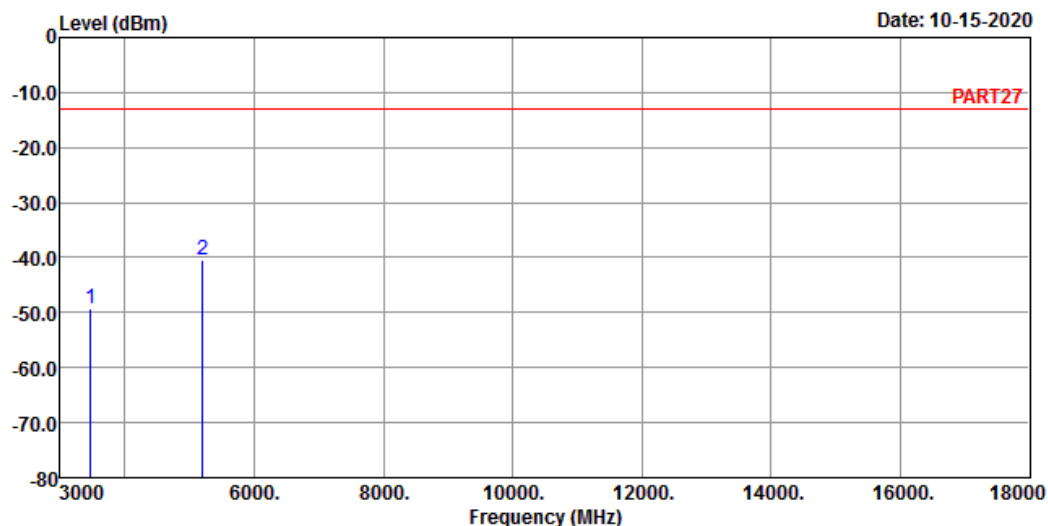


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3465.00 | -49.39 | -41.51     | -13.00     | -7.88  | -36.39     | Peak   |
| 2 pp | 5197.50 | -40.31 | -38.24     | -13.00     | -2.07  | -27.31     | Peak   |

# High Channel

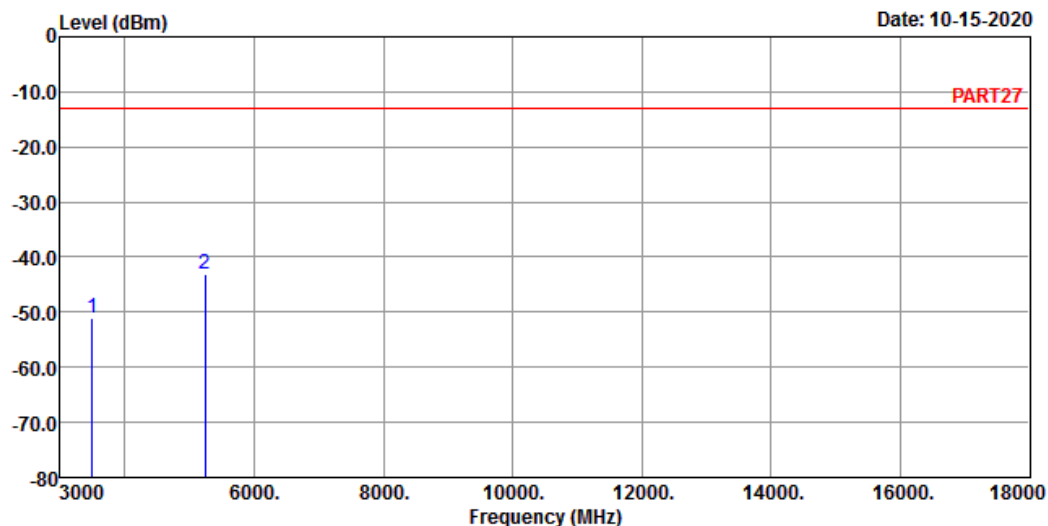


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Cyril Chen

|      |         | Read   | Limit  |        | Over  |             |
|------|---------|--------|--------|--------|-------|-------------|
| Freq | Level   | Level  | Line   | Factor | Limit | Remark      |
| MHz  | dBm     | dBm    | dBm    | dB     | dB    |             |
| 1    | 3490.00 | -51.02 | -43.37 | -13.00 | -7.65 | -38.02 Peak |
| 2 pp | 5235.00 | -43.05 | -40.64 | -13.00 | -2.41 | -30.05 Peak |

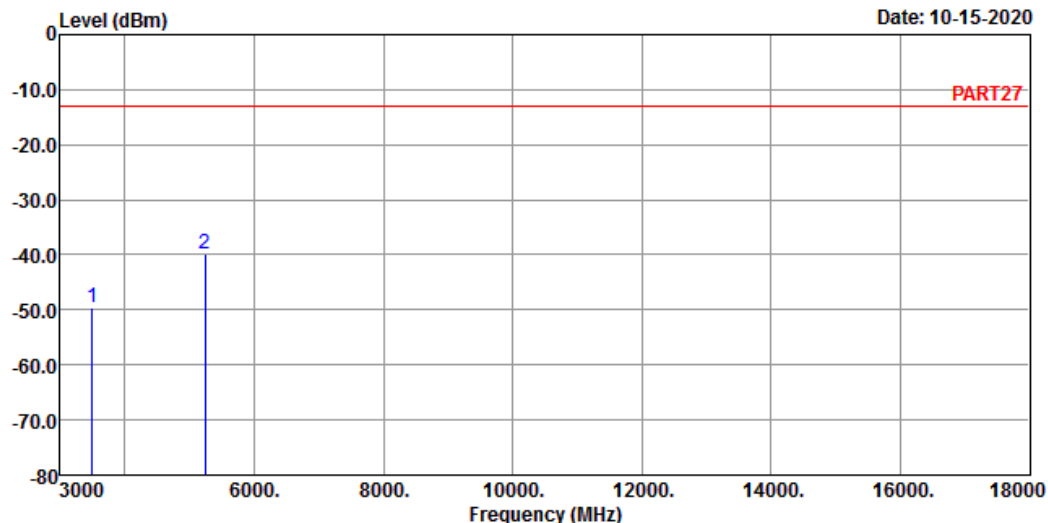


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 4 QPSK\_20M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 3490.00 | -49.53 | -41.88     | -13.00     | -7.65  | -36.53     | Peak   |
| 2 pp | 5235.00 | -39.88 | -37.47     | -13.00     | -2.41  | -26.88     | Peak   |

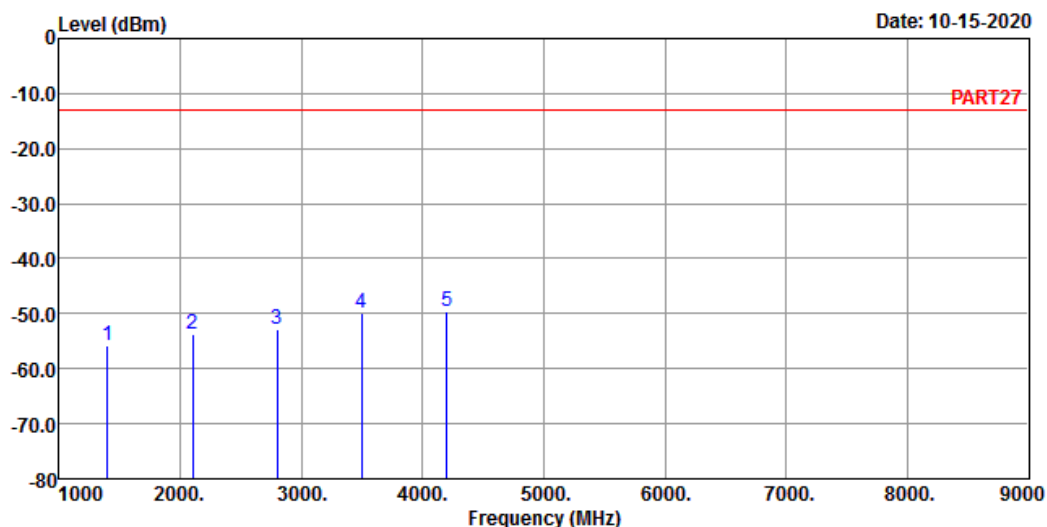
**LTE Band 12**  
**Channel Bandwidth: 1.4 MHz / QPSK**  
**Low Channel**



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3



Site : 966 Chamber 5  
 Condition: PART27 HORIZONTAL  
 Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH  
 Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
| 1    | 1399.40 | -55.90 | -44.05     | -13.00 | -11.85 | -42.90 Peak  |
| 2    | 2099.10 | -53.60 | -43.44     | -13.00 | -10.16 | -40.60 Peak  |
| 3    | 2798.80 | -52.88 | -44.36     | -13.00 | -8.52  | -39.88 Peak  |
| 4    | 3498.50 | -49.89 | -42.36     | -13.00 | -7.53  | -36.89 Peak  |
| 5 pp | 4198.20 | -49.62 | -44.02     | -13.00 | -5.60  | -36.62 Peak  |



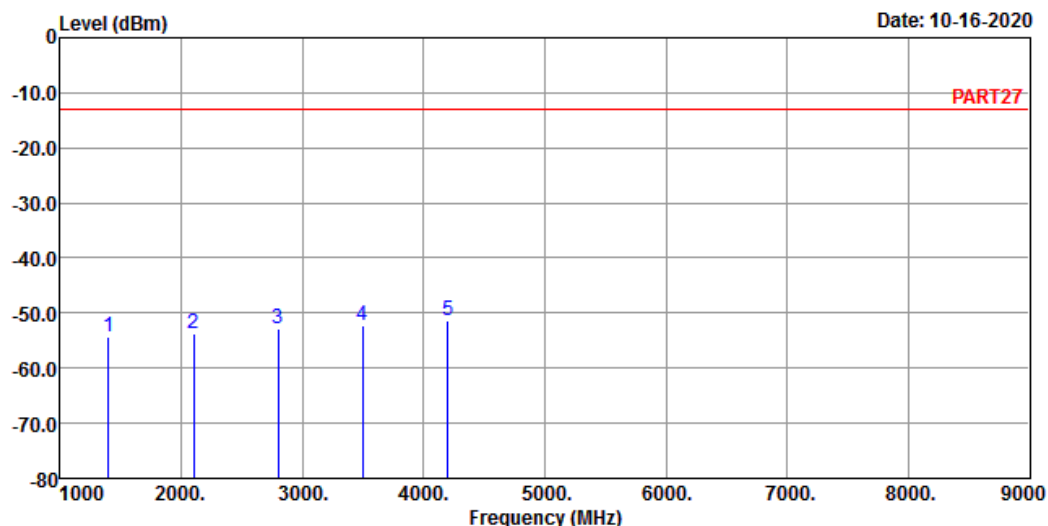


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Over Factor | Limit  | Remark |
|------|---------|--------|------------|------------|-------------|--------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB          | dB     |        |
| 1    | 1399.40 | -54.20 | -42.35     | -13.00     | -11.85      | -41.20 | Peak   |
| 2    | 2099.10 | -53.85 | -43.69     | -13.00     | -10.16      | -40.85 | Peak   |
| 3    | 2798.80 | -52.88 | -44.36     | -13.00     | -8.52       | -39.88 | Peak   |
| 4    | 3498.50 | -52.30 | -44.77     | -13.00     | -7.53       | -39.30 | Peak   |
| 5 pp | 4198.20 | -51.45 | -45.85     | -13.00     | -5.60       | -38.45 | Peak   |

# Middle Channel

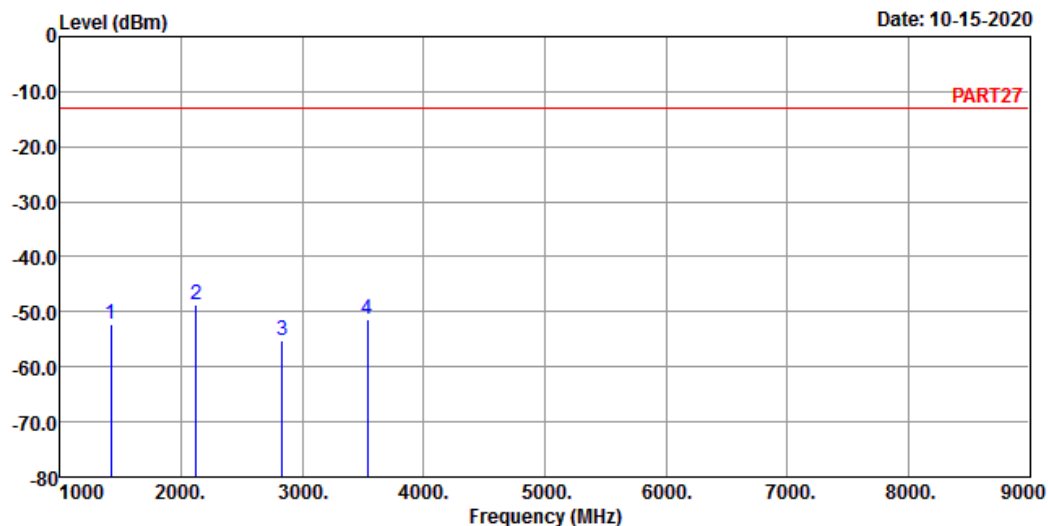


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 1415.00 | -52.17 | -40.09     | -13.00     | -12.08 | -39.17     | Peak   |
| 2 pp | 2122.50 | -48.69 | -38.82     | -13.00     | -9.87  | -35.69     | Peak   |
| 3    | 2830.00 | -55.07 | -46.59     | -13.00     | -8.48  | -42.07     | Peak   |
| 4    | 3537.50 | -51.31 | -44.09     | -13.00     | -7.22  | -38.31     | Peak   |

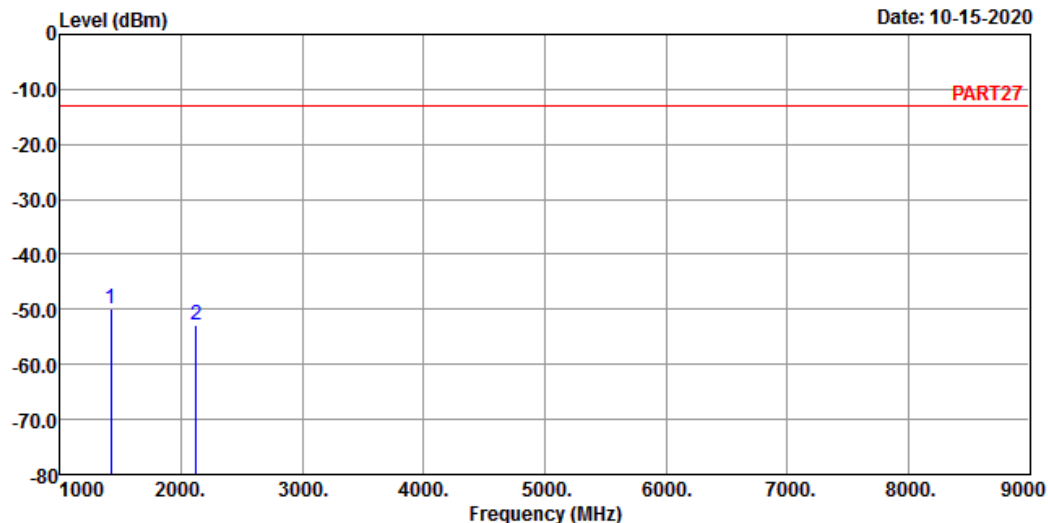


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1415.00 | -50.00 | -37.92     | -13.00     | -12.08 | -37.00     | Peak   |
| 2    | 2122.50 | -52.70 | -42.83     | -13.00     | -9.87  | -39.70     | Peak   |

# High Channel

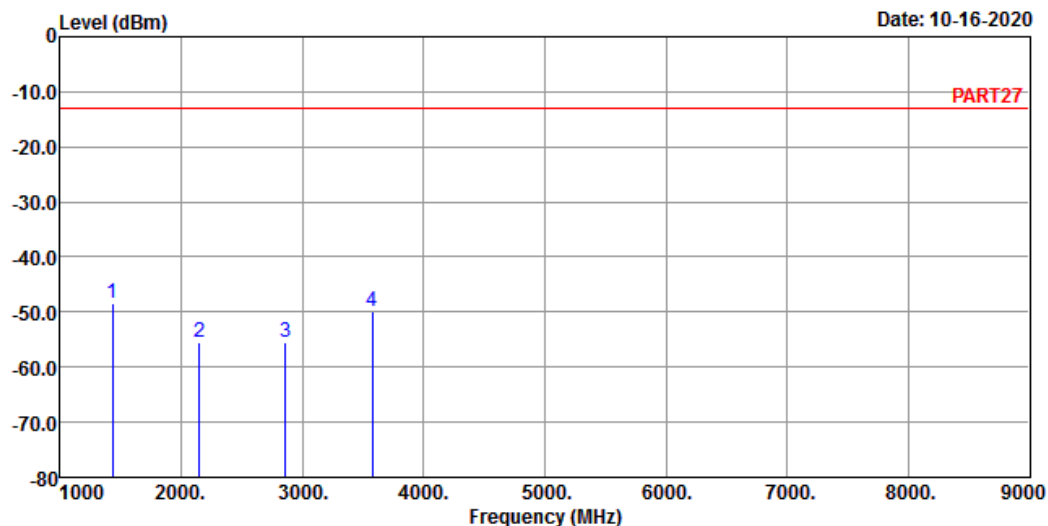


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 1430.60 | -48.48 | -36.17     | -13.00     | -12.31 | -35.48     | Peak   |
| 2    | 2145.90 | -55.59 | -46.12     | -13.00     | -9.47  | -42.59     | Peak   |
| 3    | 2861.20 | -55.53 | -47.10     | -13.00     | -8.43  | -42.53     | Peak   |
| 4    | 3576.50 | -49.75 | -42.76     | -13.00     | -6.99  | -36.75     | Peak   |

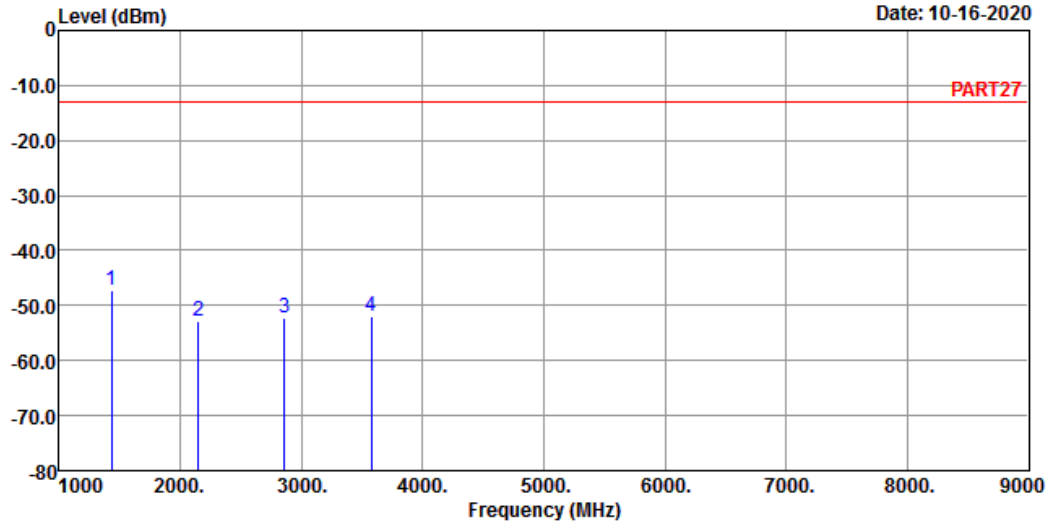


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-16-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_1.4M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1430.60 | -47.35 | -35.04     | -13.00 | -12.31      | -34.35     | Peak   |
| 2    | 2145.90 | -52.82 | -43.35     | -13.00 | -9.47       | -39.82     | Peak   |
| 3    | 2861.20 | -52.24 | -43.81     | -13.00 | -8.43       | -39.24     | Peak   |
| 4    | 3576.50 | -51.88 | -44.89     | -13.00 | -6.99       | -38.88     | Peak   |

Channel Bandwidth: 5 MHz / QPSK

Low Channel

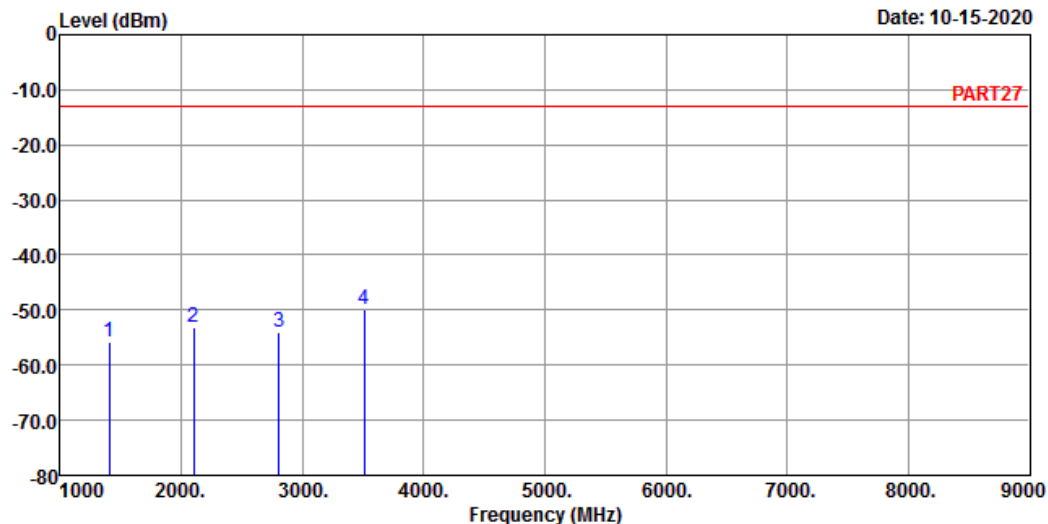


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 1403.00 | -55.85 | -43.94     | -13.00 | -11.91      | -42.85     | Peak   |
| 2    | 2104.50 | -53.06 | -42.90     | -13.00 | -10.16      | -40.06     | Peak   |
| 3    | 2806.00 | -54.09 | -45.57     | -13.00 | -8.52       | -41.09     | Peak   |
| 4 pp | 3507.50 | -49.88 | -42.43     | -13.00 | -7.45       | -36.88     | Peak   |

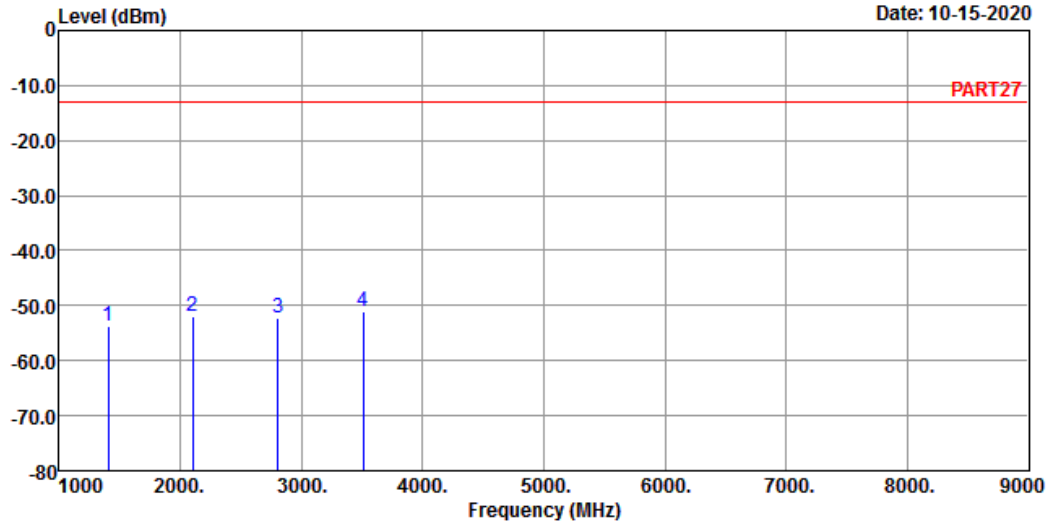


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 1403.00 | -53.78 | -41.87     | -13.00 | -11.91      | -40.78     | Peak   |
| 2    | 2104.50 | -51.88 | -41.72     | -13.00 | -10.16      | -38.88     | Peak   |
| 3    | 2806.00 | -52.39 | -43.87     | -13.00 | -8.52       | -39.39     | Peak   |
| 4 pp | 3507.50 | -51.17 | -43.72     | -13.00 | -7.45       | -38.17     | Peak   |

# Middle Channel

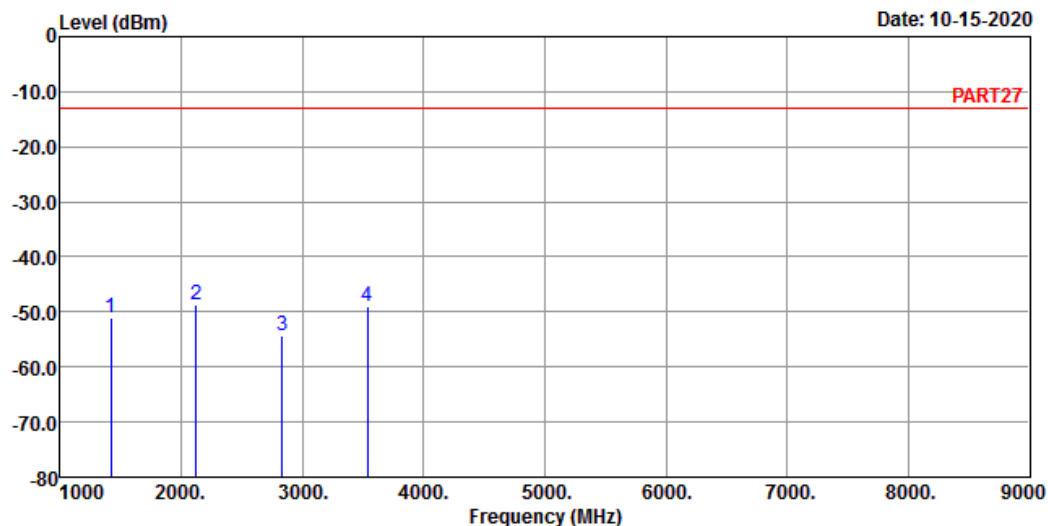


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Over   |              |
|------|---------|--------|------------|--------|--------|--------------|
|      | MHz     | dBm    | dBm        | dBm    | Factor | Limit Remark |
|      | MHz     | dBm    | dBm        | dBm    | dB     | dB           |
| 1    | 1415.00 | -51.04 | -38.96     | -13.00 | -12.08 | -38.04 Peak  |
| 2 pp | 2122.50 | -48.74 | -38.87     | -13.00 | -9.87  | -35.74 Peak  |
| 3    | 2830.00 | -54.33 | -45.85     | -13.00 | -8.48  | -41.33 Peak  |
| 4    | 3537.50 | -49.05 | -41.83     | -13.00 | -7.22  | -36.05 Peak  |



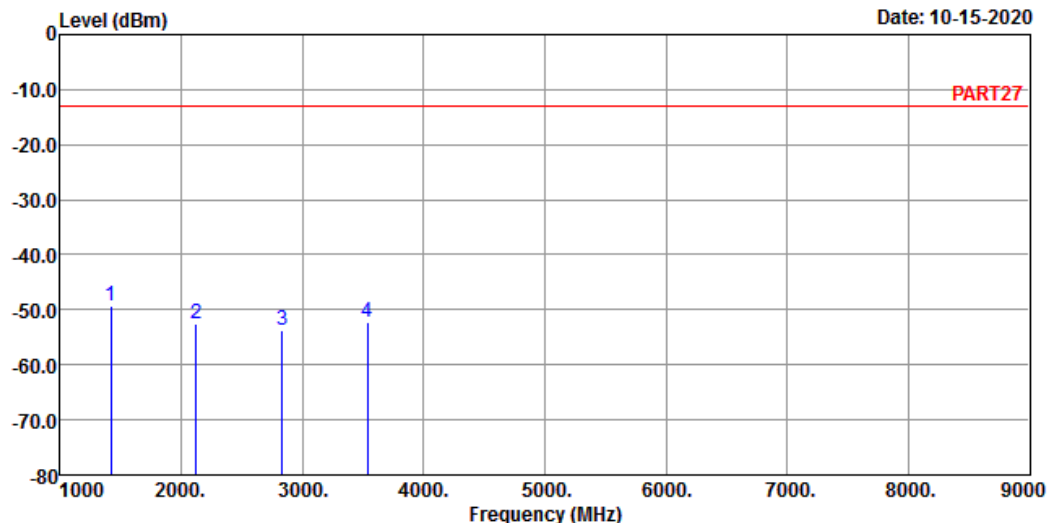


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1415.00 | -49.21 | -37.13     | -13.00 | -12.08      | -36.21     | Peak   |
| 2    | 2122.50 | -52.54 | -42.67     | -13.00 | -9.87       | -39.54     | Peak   |
| 3    | 2830.00 | -53.80 | -45.32     | -13.00 | -8.48       | -40.80     | Peak   |
| 4    | 3537.50 | -52.14 | -44.92     | -13.00 | -7.22       | -39.14     | Peak   |

# High Channel

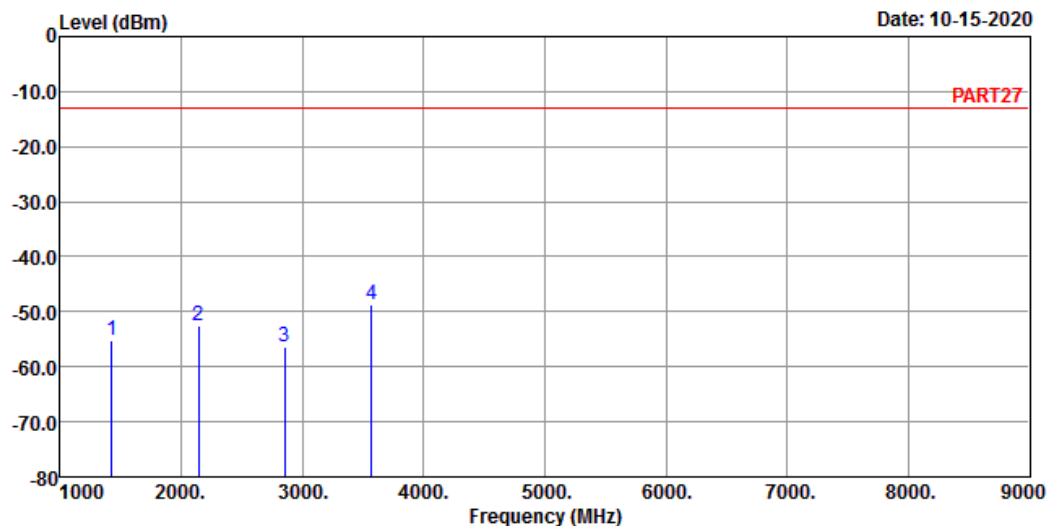


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1    | 1427.00 | -55.15 | -42.90     | -13.00     | -12.25 | -42.15     | Peak   |
| 2    | 2140.50 | -52.65 | -43.08     | -13.00     | -9.57  | -39.65     | Peak   |
| 3    | 2854.00 | -56.52 | -48.08     | -13.00     | -8.44  | -43.52     | Peak   |
| 4 pp | 3567.50 | -48.84 | -41.85     | -13.00     | -6.99  | -35.84     | Peak   |

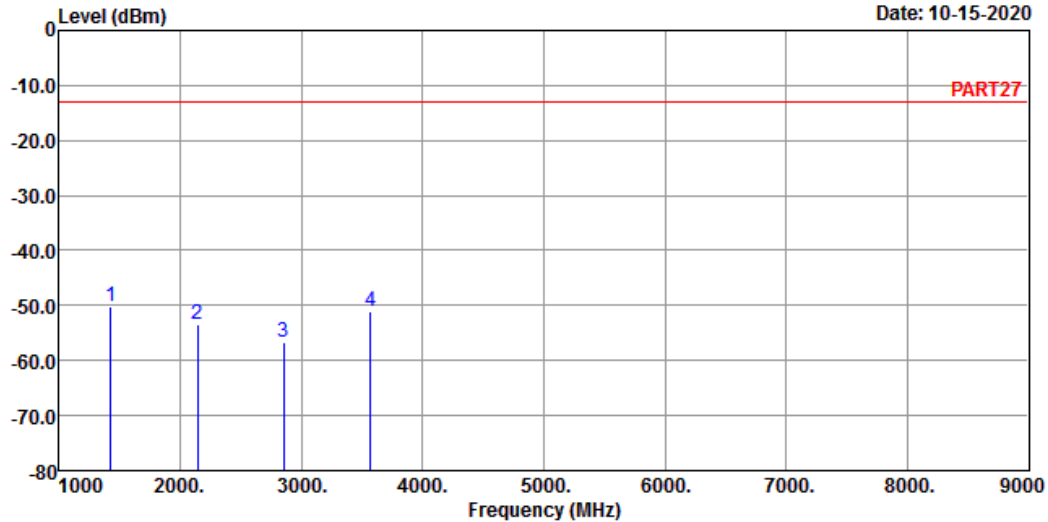


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_5M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1427.00 | -50.04 | -37.79     | -13.00 | -12.25      | -37.04     | Peak   |
| 2    | 2140.50 | -53.54 | -43.97     | -13.00 | -9.57       | -40.54     | Peak   |
| 3    | 2854.00 | -56.57 | -48.13     | -13.00 | -8.44       | -43.57     | Peak   |
| 4    | 3567.50 | -51.19 | -44.20     | -13.00 | -6.99       | -38.19     | Peak   |

Channel Bandwidth: 10 MHz / QPSK

Low Channel

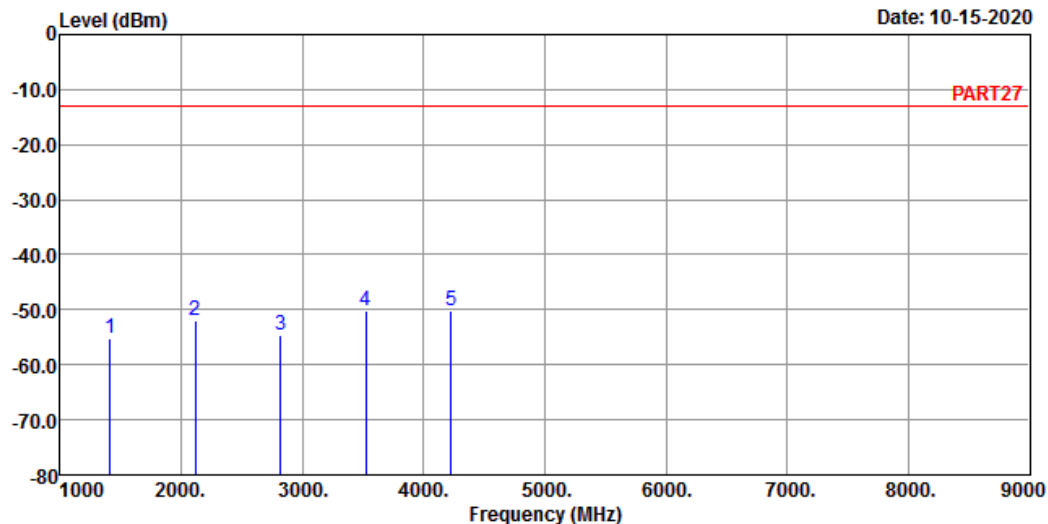


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 1408.00 | -55.31 | -43.35     | -13.00 | -11.96      | -42.31     | Peak   |
| 2    | 2112.00 | -51.92 | -41.96     | -13.00 | -9.96       | -38.92     | Peak   |
| 3    | 2816.00 | -54.73 | -46.24     | -13.00 | -8.49       | -41.73     | Peak   |
| 4 pp | 3520.00 | -50.05 | -42.67     | -13.00 | -7.38       | -37.05     | Peak   |
| 5    | 4224.00 | -50.14 | -44.57     | -13.00 | -5.57       | -37.14     | Peak   |

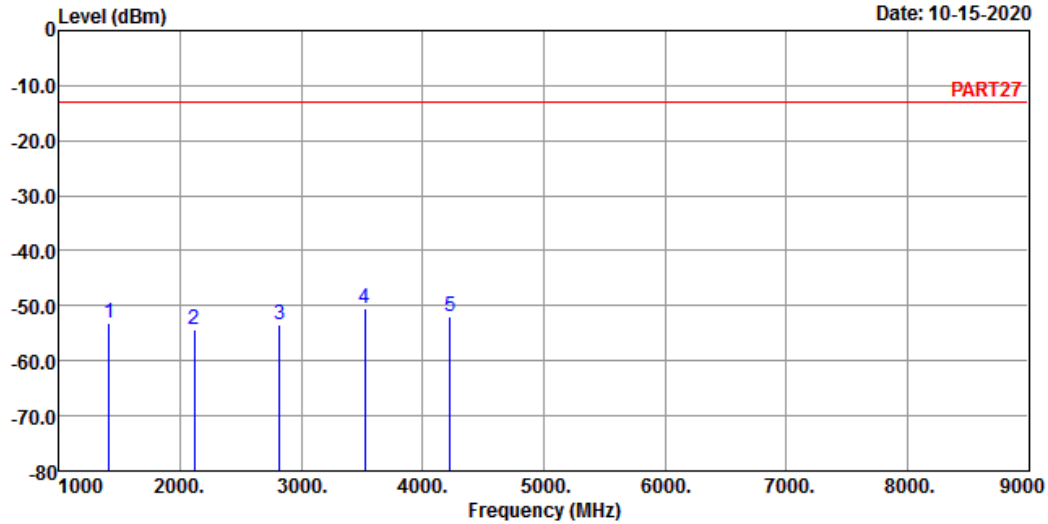


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_L-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Over Factor | Limit  | Remark |
|------|---------|--------|------------|------------|-------------|--------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB          | dB     |        |
| 1    | 1408.00 | -53.08 | -41.12     | -13.00     | -11.96      | -40.08 | Peak   |
| 2    | 2112.00 | -54.27 | -44.31     | -13.00     | -9.96       | -41.27 | Peak   |
| 3    | 2816.00 | -53.29 | -44.80     | -13.00     | -8.49       | -40.29 | Peak   |
| 4 pp | 3520.00 | -50.54 | -43.16     | -13.00     | -7.38       | -37.54 | Peak   |
| 5    | 4224.00 | -51.91 | -46.34     | -13.00     | -5.57       | -38.91 | Peak   |

# Middle Channel

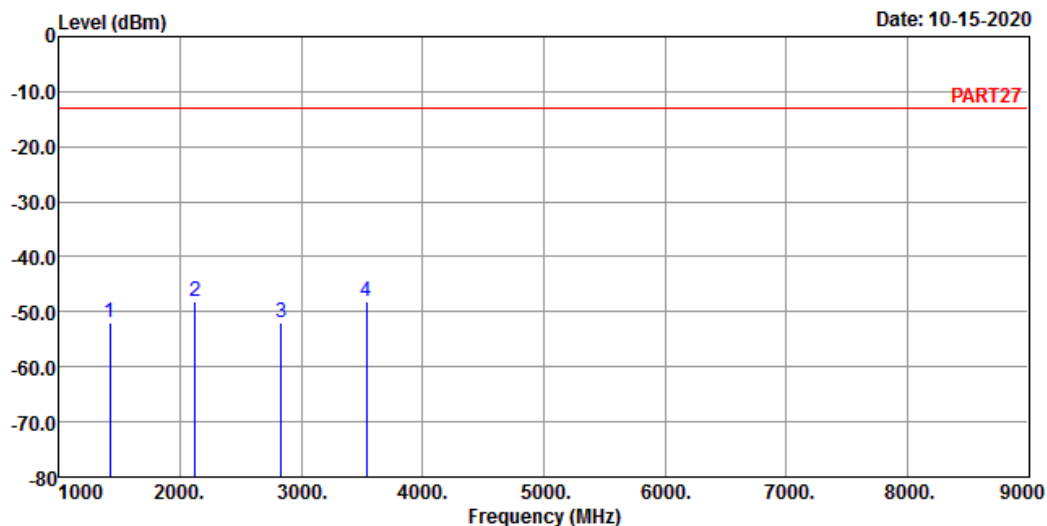


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 3

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1    | 1415.00 | -51.82 | -39.74     | -13.00 | -12.08      | -38.82     | Peak   |
| 2 pp | 2122.50 | -48.08 | -38.21     | -13.00 | -9.87       | -35.08     | Peak   |
| 3    | 2830.00 | -51.99 | -43.51     | -13.00 | -8.48       | -38.99     | Peak   |
| 4    | 3537.50 | -48.14 | -40.92     | -13.00 | -7.22       | -35.14     | Peak   |

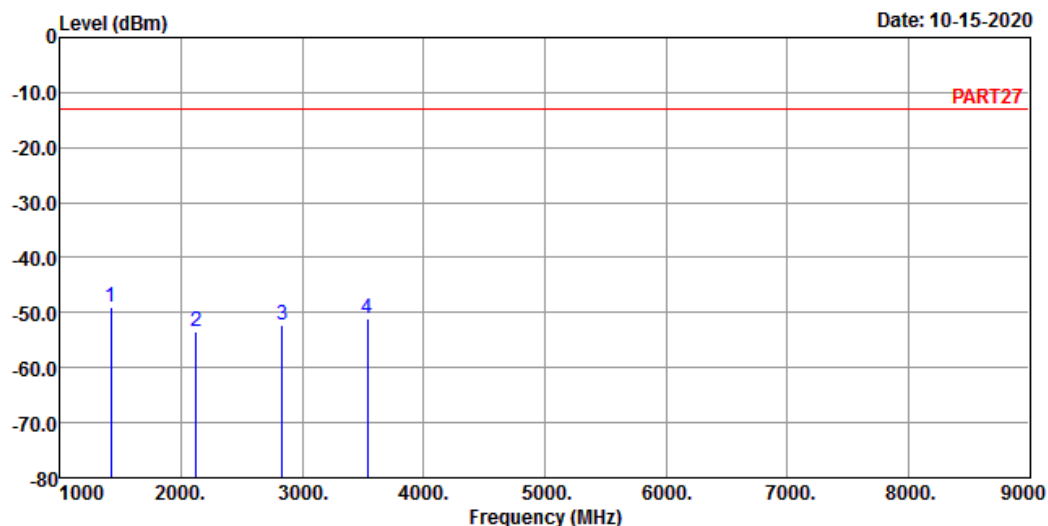


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 4

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_M-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit  | Line Factor | Over Limit | Remark |
|------|---------|--------|------------|--------|-------------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm    | dB          | dB         |        |
| 1 pp | 1415.00 | -49.15 | -37.07     | -13.00 | -12.08      | -36.15     | Peak   |
| 2    | 2122.50 | -53.53 | -43.66     | -13.00 | -9.87       | -40.53     | Peak   |
| 3    | 2830.00 | -52.28 | -43.80     | -13.00 | -8.48       | -39.28     | Peak   |
| 4    | 3537.50 | -50.97 | -43.75     | -13.00 | -7.22       | -37.97     | Peak   |

## High Channel

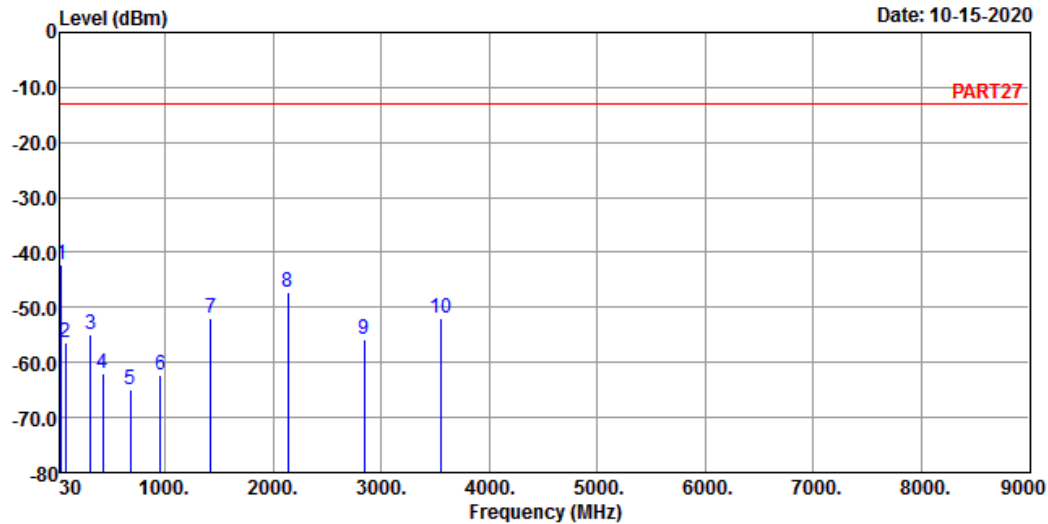


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 5

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 HORIZONTAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read   | Limit  | Over   |              |
|------|---------|--------|--------|--------|--------|--------------|
|      | MHz     | dBm    | Level  | Line   | Factor | Limit Remark |
|      | MHz     | dBm    | dBm    | dBm    | dB     | dB           |
| 1 pp | 42.61   | -42.08 | -41.14 | -13.00 | -0.94  | -29.08 Peak  |
| 2    | 77.53   | -56.44 | -46.24 | -13.00 | -10.20 | -43.44 Peak  |
| 3    | 308.39  | -54.89 | -48.01 | -13.00 | -6.88  | -41.89 Peak  |
| 4    | 419.94  | -62.10 | -56.31 | -13.00 | -5.79  | -49.10 Peak  |
| 5    | 677.96  | -65.08 | -64.63 | -13.00 | -0.45  | -52.08 Peak  |
| 6    | 955.38  | -62.39 | -64.39 | -13.00 | 2.00   | -49.39 Peak  |
| 7    | 1422.00 | -51.85 | -39.66 | -13.00 | -12.19 | -38.85 Peak  |
| 8    | 2133.00 | -47.32 | -37.65 | -13.00 | -9.67  | -34.32 Peak  |
| 9    | 2844.00 | -55.71 | -47.25 | -13.00 | -8.46  | -42.71 Peak  |
| 10   | 3555.00 | -51.87 | -44.72 | -13.00 | -7.15  | -38.87 Peak  |



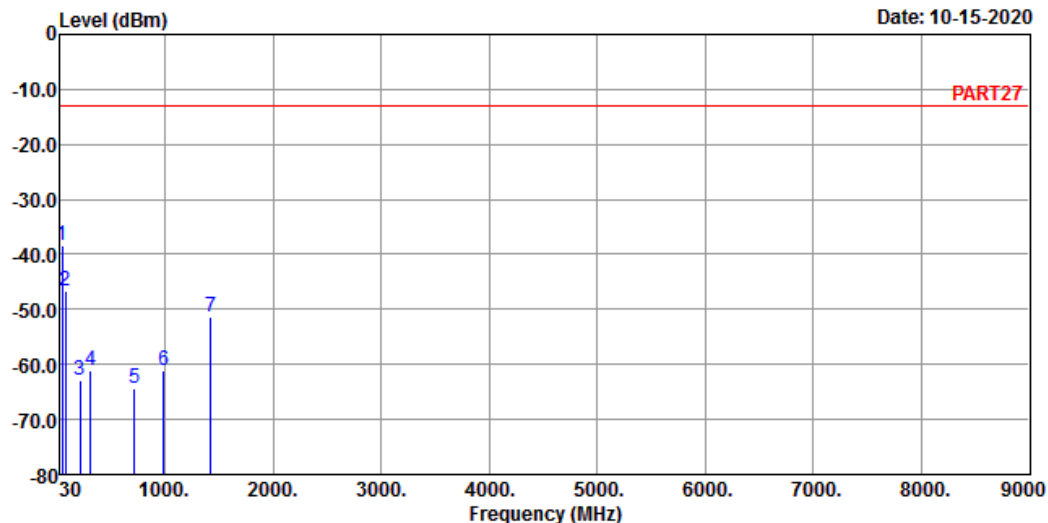


# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 10-15-2020



Site : 966 Chamber 5

Condition: PART27 VERTICAL

Remak : LTE Band 12 QPSK\_10M Link\_H-CH

Tested by: Cyril Chen

|      | Freq    | Level  | Read Level | Limit Line | Factor | Over Limit | Remark |
|------|---------|--------|------------|------------|--------|------------|--------|
|      | MHz     | dBm    | dBm        | dBm        | dB     | dB         |        |
| 1 pp | 43.58   | -38.48 | -37.01     | -13.00     | -1.47  | -25.48     | Peak   |
| 2    | 76.56   | -46.68 | -36.70     | -13.00     | -9.98  | -33.68     | Peak   |
| 3    | 210.42  | -62.76 | -55.17     | -13.00     | -7.59  | -49.76     | Peak   |
| 4    | 308.39  | -61.18 | -54.30     | -13.00     | -6.88  | -48.18     | Peak   |
| 5    | 718.70  | -64.40 | -64.67     | -13.00     | 0.27   | -51.40     | Peak   |
| 6    | 985.45  | -60.98 | -64.04     | -13.00     | 3.06   | -47.98     | Peak   |
| 7    | 1422.00 | -51.30 | -39.11     | -13.00     | -12.19 | -38.30     | Peak   |

## 5 Pictures of Test Arrangements

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

## Appendix – Information of the Testing Laboratories

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

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

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

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