

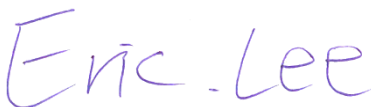
# FCC Radio Test Report

**FCC ID: 2AVVT-CU413UCMPS1**

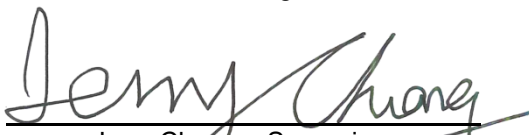
**Report No.** : BTL-FCCP-4-2103T126B  
**Equipment** : iTraMS CCU  
**Model Name** : CU-41-3U-CM-PS1  
**Brand Name** : Bosch  
**Applicant** : Bosch Global Software Technologies Private Limited  
**Address** : MS/PAC, Ban 601, Post Box No 3000 Hosur Road, Adugodi, Bengaluru, Karnataka-560030, India  
  
**Radio Function** : LTE Band 4, 12  
  
**FCC Rule Part(s)** : 47 CFR FCC Part 27 Subpart L  
47 CFR FCC Part 27 Subpart H  
47 CFR FCC Part 2  
  
**Measurement Procedure(s)** : ANSI C63.26-2015  
ANSI/TIA/EIA-603-E-2016  
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01  
  
**Date of Receipt** : 2021/4/6  
**Date of Test** : 2021/4/6 ~ 2021/10/5  
**Issued Date** : 2022/11/22

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

**Prepared by**

  
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**Approved by**

  
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**BTL Inc.**

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**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

**BTL's** laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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### REVISION HISTORY

| Report No.           | Version | Description                                                                            | Issued Date | Note    |
|----------------------|---------|----------------------------------------------------------------------------------------|-------------|---------|
| BTL-FCCP-4-2103T126  | R00     | Original Report.                                                                       | 2021/9/17   | Invalid |
| BTL-FCCP-4-2103T126  | R01     | Revised Typo.                                                                          | 2021/9/27   | Invalid |
| BTL-FCCP-4-2103T126  | R02     | Revised report to address TCB's comments.                                              | 2021/10/6   | Invalid |
| BTL-FCCP-4-2103T126  | R03     | Revised report to address TCB's comments.                                              | 2021/10/13  | Invalid |
| BTL-FCCP-4-2103T126  | R04     | Revised report to address TCB's comments.                                              | 2021/10/14  | Valid   |
| BTL-FCCP-4-2103T126B | R00     | 1. Added the fourth antenna. (MA173. A. LBI.001)<br>2. Modified applicant and address. | 2022/11/22  | Valid   |

## 1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

| FCC Clause No                                    | Description                                                                      | Test Result | Judgement | Remark      |
|--------------------------------------------------|----------------------------------------------------------------------------------|-------------|-----------|-------------|
| 15.207                                           | AC Power Line Conducted Emissions                                                | -----       | N/A       | Note(3)     |
| 2.1046<br>27.50(d)(4)<br>27.50(c)(10)            | Effective Radiated Power (ERP)&<br>Equivalent Isotropic Radiated Power<br>(EIRP) | APPENDIX A  | Pass      | -----       |
| 2.1049                                           | Occupied Bandwidth                                                               | APPENDIX B  | Pass      | -----       |
| 2.1051<br>27.53(h)<br>27.53(g)<br>27.53(c)(2)(4) | Conducted Spurious Emissions                                                     | APPENDIX C  | Pass      | -----       |
| 2.1053<br>27.53(h)                               | Radiated Spurious Emissions                                                      | APPENDIX D  | Pass      | -----       |
| 2.1051<br>27.53(h)<br>27.53(g)<br>27.53(c)(2)(4) | Band Edge Measurements                                                           | APPENDIX E  | Pass      | -----       |
| -                                                | Peak To Average Ratio                                                            | APPENDIX F  | Pass      | Record Only |
| 2.1055<br>27.54                                  | Frequency Stability                                                              | APPENDIX G  | Pass      | -----       |

### NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.
- (3) This is a DC input device.

## 1.1 TEST FACILITY

Test Firm Location: No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan.

TAF Accreditation Number is 0659; FCC Designation Number is TW0659.

The satellite facilities under the test firm used to collect the test data in this report are:

No. 66, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

☒ CB15 ☐ CB16

No. 68-2, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

☐ CB12 ☒ SR05

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k = 2$ , providing a level of confidence of approximately **95 %**.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2  $U_{\text{CISPR}}$  requirement.

### A. Radiated Spurious Emissions test :

| Test Site | Measurement Frequency Range | U,(dB) |
|-----------|-----------------------------|--------|
| CB15      | 0.03 GHz ~ 0.2 GHz          | 4.17   |
|           | 0.2 GHz ~ 1 GHz             | 4.72   |
|           | 1 GHz ~ 6 GHz               | 5.21   |
|           | 6 GHz ~ 18 GHz              | 5.51   |
|           | 18 GHz ~ 26 GHz             | 3.69   |
|           | 26 GHz ~ 40 GHz             | 4.23   |

### NOTE:

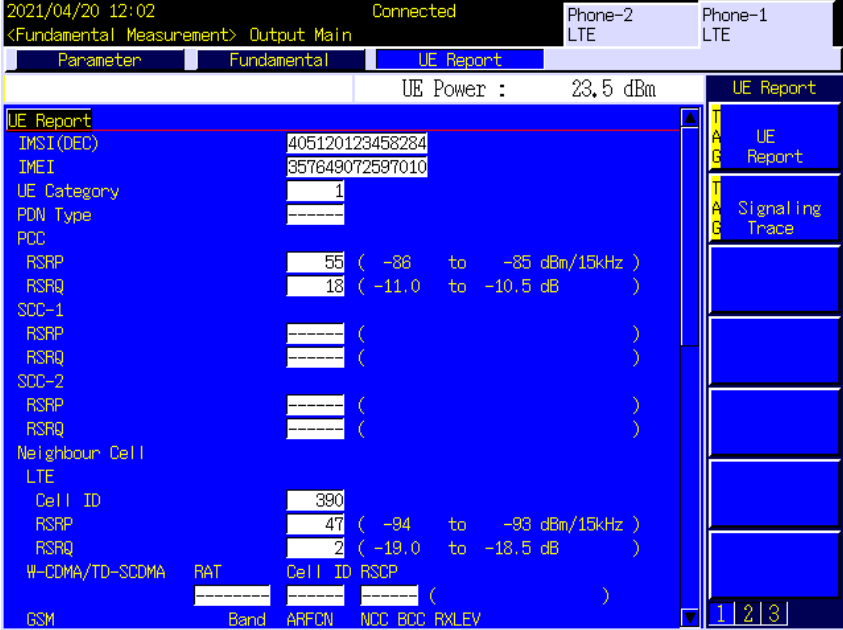
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

## 1.3 TEST ENVIRONMENT CONDITIONS

| Test Item                                             | Environment Condition | Test Voltage | Tested by   |
|-------------------------------------------------------|-----------------------|--------------|-------------|
| ERP & EIRP (Conducted)                                | 24.8 °C, 49 %         | DC 32V       | William Wei |
| Occupied Bandwidth                                    | 24.8 °C, 49 %         | DC 32V       | William Wei |
| Conducted Spurious Emissions                          | 24.8 °C, 49 %         | DC 32V       | William Wei |
| Radiated Spurious Emissions and ERP & EIRP (Radiated) | Refer to data         | DC 32V       | Jay Kao     |
| Band Edge                                             | 24.8 °C, 49 %         | DC 32V       | William Wei |
| Peak to Average Ratio                                 | 24.8 °C, 49 %         | DC 32V       | William Wei |
| Frequency Stability                                   | Normal and Extreme    |              | William Wei |

## 2 GENERAL INFORMATION

### 2.1 DESCRIPTION OF EUT

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |                    |                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|--------------------|
| Equipment                   | iTraMS CCU                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |                    |                    |
| Model Name                  | CU-41-3U-CM-PS1                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |                    |                    |
| Brand Name                  | Bosch                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |                    |                    |
| Model Difference            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |                    |                    |
| Power Source                | DC Voltage supplied from DC Source.                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |                    |                    |
| Power Rating                | DC 9-32V (12V or 24V )                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |                    |                    |
| Products Covered            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |                    |                    |
| Hardware Version/Test Model | AD00 A10 062                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |                    |                    |
| Software Version            | 1277401063                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |                    |                    |
| IEMI No.                    |                                                                                                                                                                                                                                                                                                                                                                                       |      |                    |                    |
| Test Model                  | CU-41-3U-CM-PS1                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |                    |                    |
| Sample Status               | Engineering Sample                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |                    |                    |
| Operation Frequency         | Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Band | UL Frequency (MHz) | DL Frequency (MHz) |
|                             | LTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4    | 1710 ~1755         | 2110 ~ 2155        |
|                             | LTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12   | 699 ~716           | 725 ~746           |
| Maximum EIRP                | LTE Band 4 (1.4 MHz, QPSK): 0.615 W<br>LTE Band 4 (1.4 MHz, 16QAM): 0.509 W<br>LTE Band 4 (3 MHz, QPSK): 0.622 W<br>LTE Band 4 (3 MHz, 16QAM): 0.515 W<br>LTE Band 4 (5 MHz, QPSK): 0.630 W<br>LTE Band 4 (5 MHz, 16QAM): 0.521 W<br>LTE Band 4 (10 MHz, QPSK): 0.637 W<br>LTE Band 4 (10 MHz, 16QAM): 0.527 W<br>LTE Band 4 (15 MHz, QPSK): 0.644 W<br>LTE Band 4 (15 MHz, 16QAM): 0.533 W<br>LTE Band 4 (20 MHz, QPSK): 0.652 W<br>LTE Band 4 (20 MHz, 16QAM): 0.540 W |      |                    |                    |
| Maximum ERP                 | LTE Band 12 (1.4 MHz, QPSK): 0.292 W<br>LTE Band 12 (1.4 MHz, 16QAM): 0.240 W<br>LTE Band 12 (3 MHz, QPSK): 0.295 W<br>LTE Band 12 (3 MHz, 16QAM): 0.243 W<br>LTE Band 12 (5 MHz, QPSK): 0.299 W<br>LTE Band 12 (5 MHz, 16QAM): 0.245 W<br>LTE Band 12 (10 MHz, QPSK): 0.302 W<br>LTE Band 12 (10 MHz, 16QAM): 0.248 W                                                                                                                                                   |      |                    |                    |
| EUT Modification(s)         | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |                    |                    |



**NOTE:**

(1) 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.

**(2) Channel List:**

| LTE Band 4        |                  |                 |                           |                 |                             |
|-------------------|------------------|-----------------|---------------------------|-----------------|-----------------------------|
| Test Frequency ID | Bandwidth (MHz)  | N <sub>UL</sub> | Frequency of Uplink (MHz) | N <sub>DL</sub> | Frequency of Downlink (MHz) |
| Low Range         | 1.4              | 19957           | 1710.7                    | 1957            | 2110.7                      |
|                   | 3                | 19965           | 1711.5                    | 1965            | 2111.5                      |
|                   | 5                | 19975           | 1712.5                    | 1975            | 2112.5                      |
|                   | 10               | 20000           | 1715                      | 2000            | 2115                        |
|                   | 15               | 20025           | 1717.5                    | 2025            | 2117.5                      |
|                   | 20               | 20050           | 1720                      | 2050            | 2120                        |
| Mid Range         | 1.4/3/5/10/15/20 | 20175           | 1732.5                    | 2175            | 2132.5                      |
| High Range        | 1.4              | 20393           | 1754.3                    | 2393            | 2154.3                      |
|                   | 3                | 20385           | 1753.5                    | 2385            | 2153.5                      |
|                   | 5                | 20375           | 1752.5                    | 2375            | 2152.5                      |
|                   | 10               | 20350           | 1750                      | 2350            | 2150                        |
|                   | 15               | 20325           | 1747.5                    | 2325            | 2147.5                      |
|                   | 20               | 20300           | 1745                      | 2300            | 2145                        |

| LTE Band 12       |                 |                 |                           |                 |                             |
|-------------------|-----------------|-----------------|---------------------------|-----------------|-----------------------------|
| Test Frequency ID | Bandwidth (MHz) | N <sub>UL</sub> | Frequency of Uplink (MHz) | N <sub>DL</sub> | Frequency of Downlink (MHz) |
| Low Range         | 1.4             | 23017           | 699.7                     | 5017            | 729.7                       |
|                   | 3               | 23025           | 700.5                     | 5025            | 730.5                       |
|                   | 5               | 23035           | 701.5                     | 5035            | 731.5                       |
|                   | 10              | 23060           | 704                       | 5060            | 734                         |
| Mid Range         | 1.4/3/5/10      | 23095           | 707.5                     | 5095            | 737.5                       |
| High Range        | 1.4             | 23173           | 715.3                     | 5173            | 745.3                       |
|                   | 3               | 23165           | 714.5                     | 5165            | 744.5                       |
|                   | 5               | 23155           | 713.5                     | 5155            | 743.5                       |
|                   | 10              | 23130           | 711                       | 5130            | 741                         |

## (3) Table for Filed Antenna:

## Group I:

| Antenna          | Manufacture                                                                       | Part No.        | Type | Connector    | Gain (dBi) | Note                  |
|------------------|-----------------------------------------------------------------------------------|-----------------|------|--------------|------------|-----------------------|
| External antenna |  | MA250.A.LBI.001 | N/A  | SMA(M)ST     | 3.79       | LTE Band 4            |
|                  |                                                                                   |                 |      |              | 0.72       | LTE Band 12           |
|                  |                                                                                   | TG.08.0723      | N/A  | Fakra Code D | 3.43       | LTE Band 4 (RX only)  |
|                  |                                                                                   |                 |      |              | -1.96      | LTE Band 12 (RX only) |

## Group II:

| Antenna          | Manufacture                                                                       | Part No. | Type | Connector                 | Gain (dBi) | Note        |
|------------------|-----------------------------------------------------------------------------------|----------|------|---------------------------|------------|-------------|
| Built-in antenna |  | N/A      | N/A  | Integrated (Through Hole) | 4.6        | LTE Band 4  |
|                  |                                                                                   |          |      |                           | -1.5       | LTE Band 12 |

## Group III:

| Antenna          | Manufacture                                                                       | Part No.      | Type | Connector | Gain (dBi) | Note        |
|------------------|-----------------------------------------------------------------------------------|---------------|------|-----------|------------|-------------|
| External antenna |  | MA240.LBI.001 | N/A  | SMA(M)    | 2.46       | LTE Band 4  |
|                  |                                                                                   |               |      |           | 3.11       | LTE Band 12 |

## Group IV:

| Antenna          | Manufacture                                                                       | Part No.          | Type | Connector | Gain (dBi) | Note        |
|------------------|-----------------------------------------------------------------------------------|-------------------|------|-----------|------------|-------------|
| External antenna |  | MA173. A. LBI.001 | N/A  | SMA(M)ST  | 2.40       | LTE Band 4  |
|                  |                                                                                   |                   |      |           | 0.98       | LTE Band 12 |

Note: The EUT includes three groups of external antennas, for Radiated test items only the worst case Band 4: MA250.A.LBI.001, Band 12: MA240.LBI.001 antenna is recorded.

(4) The above Antenna information are derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

(5) This is a supplement report of BTL-FCCP-4-2103T126 report. The differences compared with original report are

(1) Added the fourth antenna (MA173. A. LBI.001).

(2) Modified applicant and address.

After evaluated, the changes with respect to the original one, not affect the test results.

## 2.2 TEST MODES

| LTE BAND 4 MODE                    |                   |                     |                   |             |                |
|------------------------------------|-------------------|---------------------|-------------------|-------------|----------------|
| Test Item                          | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode           |
| EIRP<br>(Conducted)                | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 1RB/3RB/6RB    |
|                                    | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 1RB/8RB/15RB   |
|                                    | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB  |
|                                    | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB  |
|                                    | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 1RB/36RB/75RB  |
|                                    | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 1RB/50RB/100RB |
| EIRP<br>(Radiated)                 | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK        | 1RB/50RB/100RB |
| Occupied<br>Bandwidth              | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 6RB            |
|                                    | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 15RB           |
|                                    | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 25RB           |
|                                    | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 50RB           |
|                                    | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 75 RB          |
|                                    | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 100RB          |
| Conducted<br>Spurious<br>Emissions | 19957 to 20393    | 20175               | 1.4MHz            | QPSK        | 1RB            |
|                                    | 19965 to 20385    | 20175               | 3MHz              | QPSK        | 1RB            |
|                                    | 19975 to 20375    | 20175               | 5MHz              | QPSK        | 1RB            |
|                                    | 20000 to 20350    | 20175               | 10MHz             | QPSK        | 1RB            |
|                                    | 20025 to 20325    | 20175               | 15MHz             | QPSK        | 1RB            |
|                                    | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB            |
| Radiated<br>Spurious<br>Emissions  | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB            |
| Band Edge                          | 19957 to 20393    | 19957, 20393        | 1.4MHz            | QPSK        | 1RB/6RB        |
|                                    | 19965 to 20385    | 19965, 20385        | 3MHz              | QPSK        | 1RB/15RB       |
|                                    | 19975 to 20375    | 19975, 20375        | 5MHz              | QPSK        | 1RB/25RB       |
|                                    | 20000 to 20350    | 20000, 20350        | 10MHz             | QPSK        | 1RB/50RB       |
|                                    | 20025 to 20325    | 20025, 20325        | 15MHz             | QPSK        | 1RB/75RB       |
|                                    | 20050 to 20300    | 20050, 20300        | 20MHz             | QPSK        | 1RB/100RB      |
| Peak To<br>Average<br>Ratio        | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 1RB            |
|                                    | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 1RB            |
|                                    | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 1RB            |
|                                    | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 1RB            |
|                                    | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 1RB            |
|                                    | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 1RB            |
| Frequency<br>Stability             | 19957 to 20393    | 20175               | 1.4MHz            | QPSK        | 1RB            |
|                                    | 19965 to 20385    | 20175               | 3MHz              | QPSK        | 1RB            |
|                                    | 19975 to 20375    | 20175               | 5MHz              | QPSK        | 1RB            |
|                                    | 20000 to 20350    | 20175               | 10MHz             | QPSK        | 1RB            |
|                                    | 20025 to 20325    | 20175               | 15MHz             | QPSK        | 1RB            |
|                                    | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB            |

| LTE BAND 12 MODE                   |                   |                     |                   |             |               |
|------------------------------------|-------------------|---------------------|-------------------|-------------|---------------|
| Test Item                          | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode          |
| ERP<br>(Conducted)                 | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK, 16QAM | 1RB/3RB/6RB   |
|                                    | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK, 16QAM | 1RB/8RB/15RB  |
|                                    | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB |
|                                    | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB |
| ERP<br>(Radiated)                  | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK        | 1RB/25RB/50RB |
| Occupied<br>Bandwidth              | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK, 16QAM | 6RB           |
|                                    | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK, 16QAM | 15RB          |
|                                    | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK, 16QAM | 25RB          |
|                                    | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK, 16QAM | 50RB          |
| Conducted<br>Spurious<br>Emissions | 23017 to 23173    | 23095               | 1.4MHz            | QPSK        | 1RB           |
|                                    | 23025 to 23165    | 23095               | 3MHz              | QPSK        | 1RB           |
|                                    | 23035 to 23155    | 23095               | 5MHz              | QPSK        | 1RB           |
|                                    | 23060 to 23130    | 23095               | 10MHz             | QPSK        | 1RB           |
| Radiated<br>Spurious<br>Emissions  | 23060 to 23130    | 23095               | 10MHz             | QPSK        | 1RB           |
| Band Edge                          | 23017 to 23173    | 23017, 23173        | 1.4MHz            | QPSK, 16QAM | 1RB/6RB       |
|                                    | 23025 to 23165    | 23025, 23165        | 3MHz              | QPSK, 16QAM | 1RB/15RB      |
|                                    | 23035 to 23155    | 23035, 23155        | 5MHz              | QPSK, 16QAM | 1RB/25RB      |
|                                    | 23060 to 23130    | 23060, 23130        | 10MHz             | QPSK, 16QAM | 1RB/50RB      |
| Peak To<br>Average<br>Ratio        | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz            | QPSK, 16QAM | 1RB/3RB/6RB   |
|                                    | 23025 to 23165    | 23025, 23095, 23165 | 3MHz              | QPSK, 16QAM | 1RB/8RB/15RB  |
|                                    | 23035 to 23155    | 23035, 23095, 23155 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB |
|                                    | 23060 to 23130    | 23060, 23095, 23130 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB |
| Frequency<br>Stability             | 23017 to 23173    | 23095               | 1.4MHz            | QPSK        | 1RB           |
|                                    | 23025 to 23165    | 23095               | 3MHz              | QPSK        | 1RB           |
|                                    | 23035 to 23155    | 23095               | 5MHz              | QPSK        | 1RB           |
|                                    | 23060 to 23130    | 23095               | 10MHz             | QPSK        | 1RB           |

**NOTE:**

(1) All X, Y and Z axes are evaluated, but only the worst case is recorded. See below table for detail.

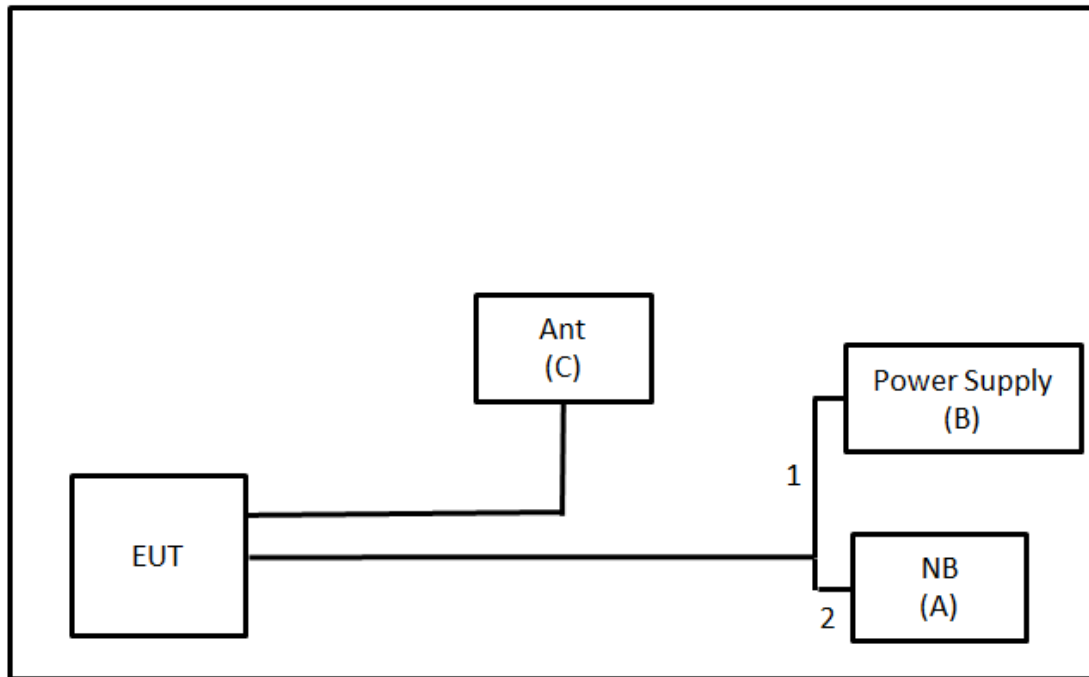
| Test Item                                 | External antenna |         | Built-in antenna |         |
|-------------------------------------------|------------------|---------|------------------|---------|
|                                           | BAND 4           | BAND 12 | BAND 4           | BAND 12 |
| Radiated Spurious Emissions<br>(below 1G) | X axis           | Z axis  | Y axis           | Z axis  |
| Radiated Spurious Emissions<br>(above 1G) | X axis           | Z axis  | Y axis           | Z axis  |

(2) For ERP & EIRP radiated part, only the worst cases are recorded.

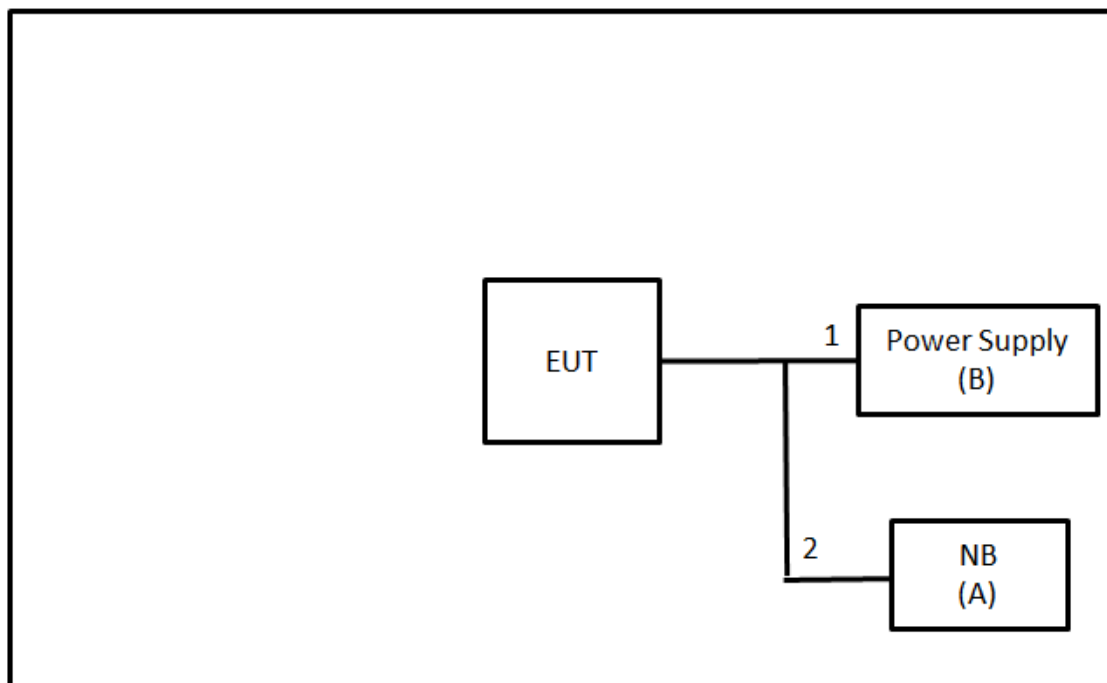
## 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

Radiated Emissions\_External antenna



Radiated Emissions\_Built-in antenna



## 2.4 SUPPORT UNITS

| Item | Equipment        | Brand   | Model No.       | Series No. | Remarks                    |
|------|------------------|---------|-----------------|------------|----------------------------|
| A    | NB               | HP      | TPN-I119        | N/A        | Furnished by test lab.     |
| B    | Power Supply     | Twintex | TDS-60-15       | N/A        | Furnished by test lab.     |
| C    | external antenna | Taoglas | MA250.A.LBI.001 | N/A        | Supplied by test requester |
| D    | Stubby antenna   | Taoglas | TG.08.0723      | N/A        | Supplied by test requester |

| Item | Shielded | Ferrite Core | Length | Cable Type    | Remarks                    |
|------|----------|--------------|--------|---------------|----------------------------|
| 1    | N/A      | N/A          | 2m     | Power Cord    | Supplied by test requester |
| 2    | N/A      | N/A          | 2.1m   | RS 232 to USB | Supplied by test requester |

### 3 ERP & EIRP TEST

#### 3.1 LIMIT

LTE Band 4:

27.50(d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP (30 dBm).

LTE Band 12:

27.50(c)(10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP (34.77 dBm).

NOTE:

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

| Reading Level |   | Correct Factor |   | Measurement Value |
|---------------|---|----------------|---|-------------------|
| -29.66        | + | 34.26          | = | 4.60              |

| Measurement Value |   | Limit Value |   | Margin Level |
|-------------------|---|-------------|---|--------------|
| 4.60              | - | 30          | = | -25.40       |

#### 3.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

##### EIRP / ERP Power Measurement:

EIRP = Conducted Power + Antenna gain.

ERP power = EIPR power - 2.15 dBi.

##### Conducted Measurement:

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

##### Radiated Measurement:

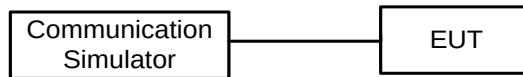
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
- EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
- ERP can be calculated form EIRP by subtracting the gain of dipole, ERP = EIPR - 2.15dBi..
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 3.3 DEVIATION FROM TEST STANDARD

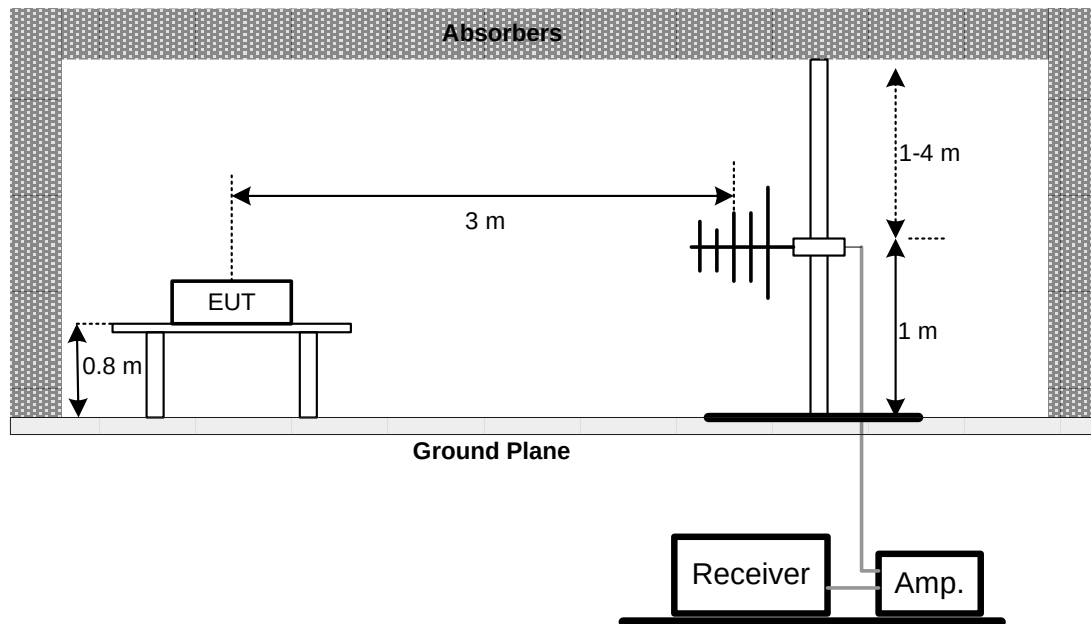
No deviation.

### 3.4 TEST SETUP

**Conducted Measurement:**



**Radiated Measurement:**



### 3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 3.6 TEST RESULT

Please refer to the APPENDIX A.



## 4 OCCUPIED BANDWIDTH MEASUREMENT

### 4.1 TEST PROCEDURE

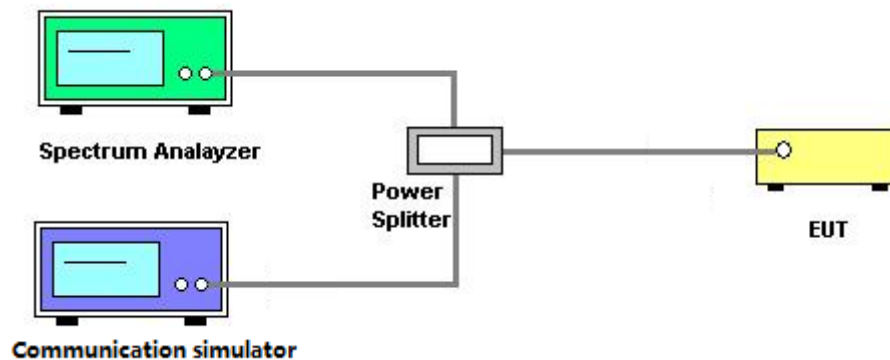
The testing follows FCC KDB 971168 v03r01 Section 4.

- The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.
- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- $RBW = (1\% \sim 5\%) * EBW$   
 $VBW \geq 3 * RBW$ .
- Set spectrum analyzer with Peak detector.

### 4.2 DEVIATION FROM TEST STANDARD

No deviation.

### 4.3 TEST SETUP



### 4.4 TEST RESULT

Please refer to the APPENDIX B.

## 5 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

### 5.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to -13dBm. (Part 27 Subpart L & H)

### 5.2 TEST PROCEDURE

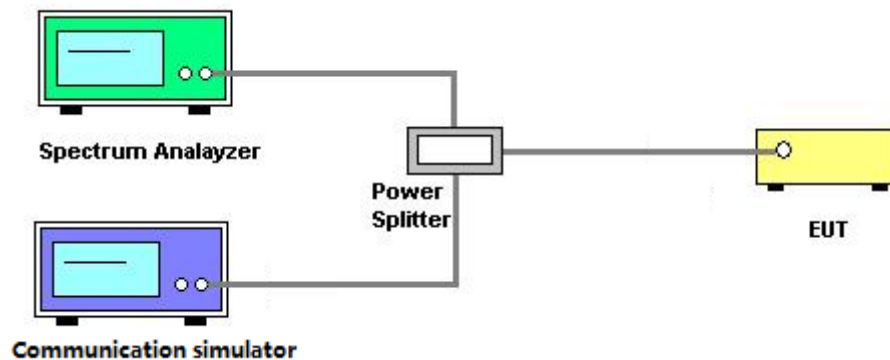
The testing follows FCC KDB 971168 v03r01 Section 6.

- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- The band edges of low and high channels for the highest RF powers were measured. Set RBW  $\geq 1\%$  EBW in the 1MHz band immediately outside and adjacent to the band edge.
- Set spectrum analyzer with Peak detector.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

### 5.3 DEVIATION FROM TEST STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 TEST RESULT

Please refer to the APPENDIX C.

## 6 RADIATED SPURIOUS EMISSIONS TEST

### 6.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to -13dBm. (Part 27 Subpart L & H)

NOTE:

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

| Reading Level |   | Correct Factor |   | Measurement Value |
|---------------|---|----------------|---|-------------------|
| -50.43        | + | -2.11          | = | -52.54            |

| Measurement Value |   | Limit Value |   | Margin Level |
|-------------------|---|-------------|---|--------------|
| -52.54            | - | -13         | = | -39.54       |

### 6.2 TEST PROCEDURE

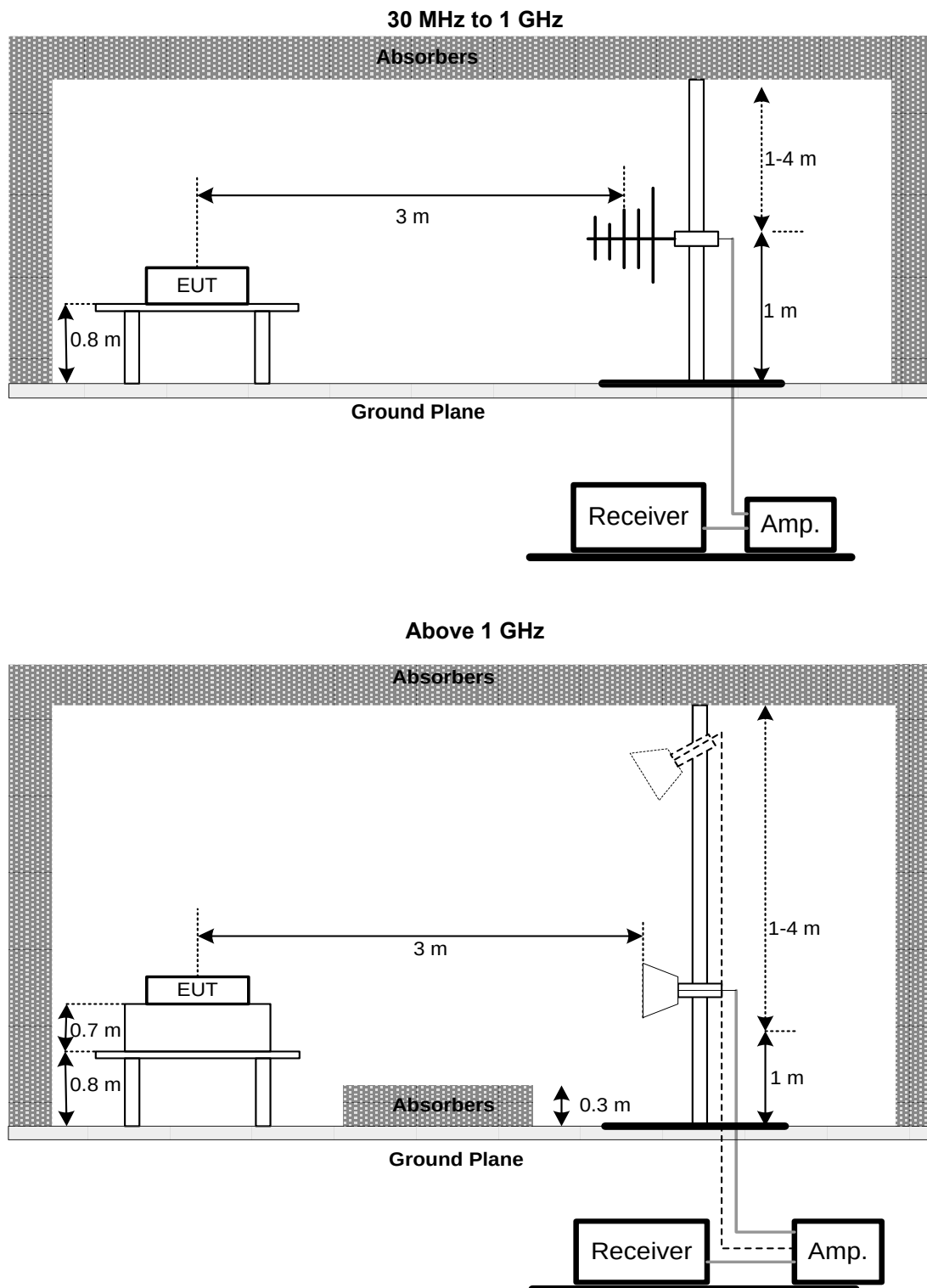
The testing follows FCC KDB 971168 v03r01 Section 6.2.

- In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- ERP can be calculated form EIRP by subtracting the gain of dipole,  $ERP = EIPR - 2.15\text{dBi}.$   
The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 6.3 DEVIATION FROM TEST STANDARD

No deviation.

## 6.4 TEST SETUP



## 6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

## 6.6 TEST RESULT

Please refer to the APPENDIX D

## 7 BAND EDGE MEASUREMENT

### 7.1 LIMIT

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. (Part 27 Subpart L & H)

### 7.2 TEST PROCEDURE

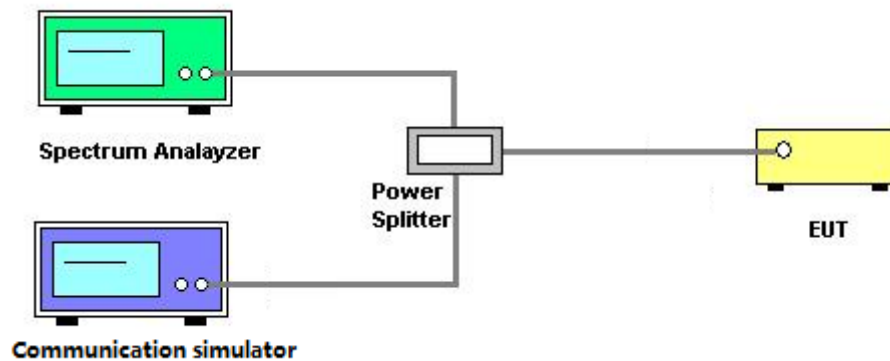
The testing follows FCC KDB 971168 v03r01 Section 6.

- a. All measurements were done at low and high operational frequency range.
- b. Record the max trace plot into the test report.

### 7.3 DEVIATION FROM TEST STANDARD

No deviation.

### 7.4 TEST SETUP



### 7.5 TEST RESULT

Please refer to the APPENDIX E.

## 8 PEAK TO AVERAGE RATIO MEASUREMENT

### 8.1 LIMIT

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

### 8.2 TEST PROCEDURE

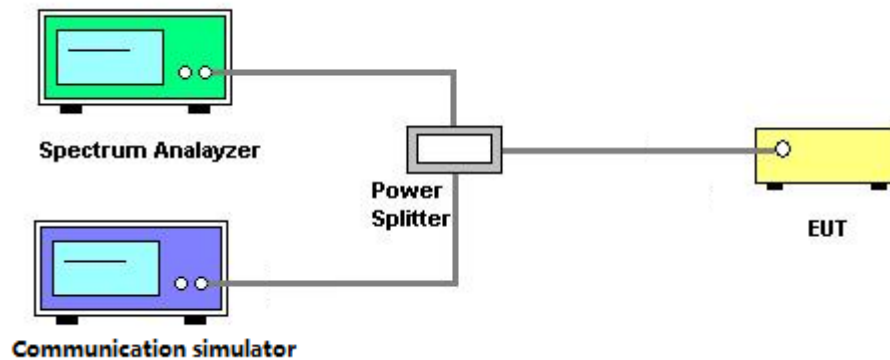
The testing follows FCC KDB 971168 v03r01 Section 5.7.

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

### 8.3 DEVIATION FROM TEST STANDARD

No deviation.

### 8.4 TEST SETUP



### 8.5 TEST RESULT

Please refer to the APPENDIX F.

## 9 FREQUENCY STABILITY MEASUREMENT

### 9.1 LIMIT

$\pm 1.5$  ppm is for base and fixed station.  $\pm 2.5$  ppm is for mobile station.

### 9.2 TEST PROCEDURE

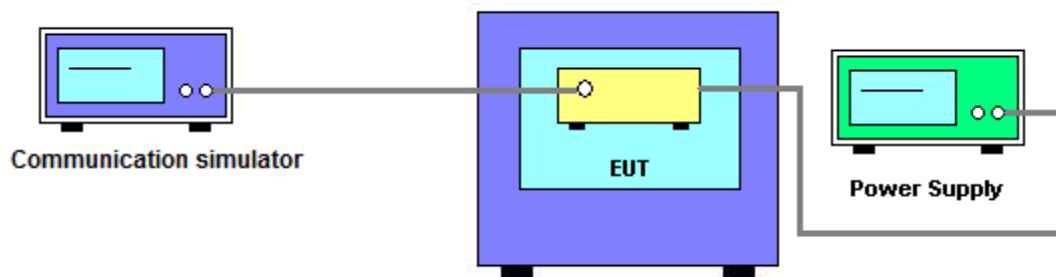
The testing follows FCC KDB 971168 v03r01 Section 9.

- 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.
- The frequency error was recorded frequency error from the communication simulator.

### 9.3 DEVIATION FROM TEST STANDARD

No deviation.

### 9.4 TEST SETUP



### 9.5 TEST RESULT

Please refer to the APPENDIX G.

## 10 LIST OF MEASURING EQUIPMENTS

| RF Power Output |                                      |              |          |            |                 |                  |
|-----------------|--------------------------------------|--------------|----------|------------|-----------------|------------------|
| Item            | Kind of Equipment                    | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1               | 8960 Series 10 Wireless Com Test Set | Agilent      | E5515C   | GB47390193 | 2020/6/4        | 2021/6/3         |
| 2               | Radio Communication Analyzer         | Anritsu      | MT8820C  | 6201525878 | 2020/6/19       | 2021/6/18        |

| Radiated Spurious Emissions |                                      |              |                             |               |                 |                  |
|-----------------------------|--------------------------------------|--------------|-----------------------------|---------------|-----------------|------------------|
| Item                        | Kind of Equipment                    | Manufacturer | Type No.                    | Serial No.    | Calibrated Date | Calibrated Until |
| 1                           | Preamplifier                         | EMCI         | EMC02325B                   | 980217        | 2021/4/8        | 2022/4/7         |
| 2                           | Preamplifier                         | EMCI         | EMC012645B                  | 980267        | 2021/4/8        | 2022/4/7         |
| 3                           | Test Cable                           | EMCI         | EMC-SM-SM-1000              | 180809        | 2021/4/8        | 2022/4/7         |
| 4                           | Test Cable                           | EMCI         | EMC104-SM-SM-3000           | 151205        | 2021/4/8        | 2022/4/7         |
| 5                           | Test Cable                           | EMCI         | EMC-SM-SM-7000              | 180408        | 2021/4/8        | 2022/4/7         |
| 6                           | MXE EMI Receiver                     | Agilent      | N9038A                      | MY554200087   | 2021/5/27       | 2022/5/26        |
| 7                           | Signal Analyzer                      | Agilent      | N9010A                      | MY56480554    | 2021/8/25       | 2022/8/24        |
| 8                           | Horn Ant                             | SCHWARZBECK  | BBHA 9120D                  | 9120D-1342    | 2021/6/2        | 2022/6/1         |
| 9                           | Trilog-Broadband Antenna             | Schwarzbeck  | VULB 9168                   | VULB 9168-352 | 2021/8/11       | 2022/8/10        |
| 10                          | 5dB Attenuator                       | EMCI         | EMCI-N-6-05                 | AT-N0625      | 2021/8/11       | 2022/8/10        |
| 11                          | Measurement Software                 | EZ           | EZ EMC (Version NB-03A1-01) | N/A           | N/A             | N/A              |
| 12                          | 8960 Series 10 Wireless Com Test Set | Agilent      | E5515C                      | GB47390193    | 2020/7/23       | 2021/7/22        |
| 13                          | Radio Communication Analyzer (LTE)   | Anritsu      | MT8820C                     | 6201381608    | 2021/1/7        | 2022/1/6         |

| Frequency Stability Measurement |                                      |              |          |            |                 |                  |
|---------------------------------|--------------------------------------|--------------|----------|------------|-----------------|------------------|
| Item                            | Kind of Equipment                    | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1                               | 8960 Series 10 Wireless Com Test Set | Agilent      | E5515C   | GB47390193 | 2020/6/4        | 2021/6/3         |
| 2                               | Radio Communication Analyzer         | Anritsu      | MT8820C  | 6201525878 | 2020/6/19       | 2021/6/18        |

| Others Conducted Measurement |                   |              |          |            |                 |                  |
|------------------------------|-------------------|--------------|----------|------------|-----------------|------------------|
| Item                         | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated Date | Calibrated Until |
| 1                            | Spectrum Analyzer | R&S          | FSP40    | 100129     | 2020/5/22       | 2021/5/21        |

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.  
All calibration period of equipment list is one year.



**11 EUT TEST PHOTO**

Please refer to document Appendix No.: TP-2103T126B-FCCP-2 (APPENDIX-TEST PHOTOS).

**12 EUT PHOTOS**

Please refer to document Appendix No.: EP-2103T126B-3 (APPENDIX-EUT PHOTOS).

## APPENDIX A ERP & EIRP

**EIRP (Conducted):**

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 1.4      | 19957   | 1710.7          | QPSK  | 1                | 0            | 0   | 23.09         | 4.60       | 27.69      | 0.587        |
|      |          |         |                 |       | 1                | 2            | 0   | 22.81         | 4.60       | 27.41      | 0.551        |
|      |          |         |                 |       | 1                | 5            | 0   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 |       | 3                | 0            | 0   | 23.09         | 4.60       | 27.69      | 0.587        |
|      |          |         |                 |       | 3                | 1            | 0   | 22.81         | 4.60       | 27.41      | 0.551        |
|      |          |         |                 |       | 3                | 2            | 0   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.15         | 4.60       | 26.75      | 0.473        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.27         | 4.60       | 26.87      | 0.486        |
|      |          |         |                 |       | 1                | 2            | 1   | 22.23         | 4.60       | 26.83      | 0.482        |
|      |          |         |                 |       | 1                | 5            | 1   | 21.57         | 4.60       | 26.17      | 0.414        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.27         | 4.60       | 26.87      | 0.486        |
|      |          |         |                 |       | 3                | 1            | 1   | 22.23         | 4.60       | 26.83      | 0.482        |
|      |          | 20175   | 1732.5          | QPSK  | 3                | 2            | 1   | 21.57         | 4.60       | 26.17      | 0.414        |
|      |          |         |                 |       | 6                | 0            | 2   | 21.24         | 4.60       | 25.84      | 0.384        |
|      |          |         |                 | 16QAM | 1                | 0            | 0   | 23.19         | 4.60       | 27.79      | 0.601        |
|      |          |         |                 |       | 1                | 2            | 0   | 22.73         | 4.60       | 27.33      | 0.541        |
|      |          |         |                 |       | 1                | 5            | 0   | 22.60         | 4.60       | 27.20      | 0.525        |
|      |          |         |                 |       | 3                | 0            | 0   | 23.19         | 4.60       | 27.79      | 0.601        |
|      |          |         |                 |       | 3                | 1            | 0   | 22.73         | 4.60       | 27.33      | 0.541        |
|      |          |         |                 |       | 3                | 2            | 0   | 22.60         | 4.60       | 27.20      | 0.525        |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.25         | 4.60       | 26.85      | 0.484        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.37         | 4.60       | 26.97      | 0.498        |
|      |          |         |                 |       | 1                | 2            | 1   | 22.33         | 4.60       | 26.93      | 0.493        |
|      |          |         |                 |       | 1                | 5            | 1   | 21.67         | 4.60       | 26.27      | 0.424        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.37         | 4.60       | 26.97      | 0.498        |
|      |          |         |                 |       | 3                | 1            | 1   | 22.33         | 4.60       | 26.93      | 0.493        |
|      |          | 20392   | 1754.2          | QPSK  | 3                | 2            | 1   | 21.67         | 4.60       | 26.27      | 0.424        |
|      |          |         |                 |       | 6                | 0            | 2   | 20.50         | 4.60       | 25.10      | 0.324        |
|      |          |         |                 | 16QAM | 1                | 0            | 0   | 23.29         | 4.60       | 27.89      | <b>0.615</b> |
|      |          |         |                 |       | 1                | 2            | 0   | 22.85         | 4.60       | 27.45      | 0.556        |
|      |          |         |                 |       | 1                | 5            | 0   | 22.66         | 4.60       | 27.26      | 0.532        |
|      |          |         |                 |       | 3                | 0            | 0   | 23.29         | 4.60       | 27.89      | <b>0.615</b> |
|      |          |         |                 |       | 3                | 1            | 0   | 22.85         | 4.60       | 27.45      | 0.556        |
|      |          |         |                 |       | 3                | 2            | 0   | 22.66         | 4.60       | 27.26      | 0.532        |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.35         | 4.60       | 26.95      | 0.495        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.47         | 4.60       | 27.07      | <b>0.509</b> |
|      |          |         |                 |       | 1                | 2            | 1   | 22.43         | 4.60       | 27.03      | 0.505        |
|      |          |         |                 |       | 1                | 5            | 1   | 21.73         | 4.60       | 26.33      | 0.430        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.47         | 4.60       | 27.07      | <b>0.509</b> |
|      |          |         |                 |       | 3                | 1            | 1   | 22.43         | 4.60       | 27.03      | 0.505        |
|      |          |         |                 |       | 3                | 2            | 1   | 21.73         | 4.60       | 26.33      | 0.430        |
|      |          |         |                 |       | 6                | 0            | 2   | 20.60         | 4.60       | 25.20      | 0.331        |

**NOTE:**

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 3        | 19965   | 1711.5          | QPSK  | 1                | 0            | 0   | 23.14         | 4.60       | 27.74      | 0.594        |
|      |          |         |                 |       | 1                | 7            | 0   | 22.86         | 4.60       | 27.46      | 0.557        |
|      |          |         |                 |       | 1                | 14           | 0   | 22.55         | 4.60       | 27.15      | 0.519        |
|      |          |         |                 |       | 8                | 0            | 1   | 22.25         | 4.60       | 26.85      | 0.484        |
|      |          |         |                 |       | 8                | 4            | 1   | 21.90         | 4.60       | 26.50      | 0.447        |
|      |          |         |                 |       | 8                | 7            | 1   | 21.73         | 4.60       | 26.33      | 0.430        |
|      |          |         |                 |       | 15               | 0            | 1   | 22.20         | 4.60       | 26.80      | 0.479        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.32         | 4.60       | 26.92      | 0.492        |
|      |          |         |                 |       | 1                | 7            | 1   | 22.28         | 4.60       | 26.88      | 0.488        |
|      |          |         |                 |       | 1                | 14           | 1   | 21.62         | 4.60       | 26.22      | 0.419        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.15         | 4.60       | 25.75      | 0.376        |
|      |          |         |                 |       | 8                | 4            | 2   | 21.00         | 4.60       | 25.60      | 0.363        |
|      |          |         |                 |       | 8                | 7            | 2   | 20.58         | 4.60       | 25.18      | 0.330        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.29         | 4.60       | 25.89      | 0.388        |
|      |          | 20175   | 1732.5          | QPSK  | 1                | 0            | 0   | 23.24         | 4.60       | 27.84      | 0.608        |
|      |          |         |                 |       | 1                | 7            | 0   | 22.78         | 4.60       | 27.38      | 0.547        |
|      |          |         |                 |       | 1                | 14           | 0   | 22.65         | 4.60       | 27.25      | 0.531        |
|      |          |         |                 |       | 8                | 0            | 1   | 22.35         | 4.60       | 26.95      | 0.495        |
|      |          |         |                 |       | 8                | 4            | 1   | 21.82         | 4.60       | 26.42      | 0.439        |
|      |          |         |                 |       | 8                | 7            | 1   | 21.83         | 4.60       | 26.43      | 0.440        |
|      |          |         |                 |       | 15               | 0            | 1   | 22.30         | 4.60       | 26.90      | 0.490        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.42         | 4.60       | 27.02      | 0.504        |
|      |          |         |                 |       | 1                | 7            | 1   | 22.38         | 4.60       | 26.98      | 0.499        |
|      |          |         |                 |       | 1                | 14           | 1   | 21.72         | 4.60       | 26.32      | 0.429        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.25         | 4.60       | 25.85      | 0.385        |
|      |          |         |                 |       | 8                | 4            | 2   | 20.92         | 4.60       | 25.52      | 0.356        |
|      |          |         |                 |       | 8                | 7            | 2   | 20.68         | 4.60       | 25.28      | 0.337        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.39         | 4.60       | 25.99      | 0.397        |
|      |          | 20384   | 1753.4          | QPSK  | 1                | 0            | 0   | 23.34         | 4.60       | 27.94      | <b>0.622</b> |
|      |          |         |                 |       | 1                | 7            | 0   | 22.90         | 4.60       | 27.50      | 0.562        |
|      |          |         |                 |       | 1                | 14           | 0   | 22.71         | 4.60       | 27.31      | 0.538        |
|      |          |         |                 |       | 8                | 0            | 1   | 22.45         | 4.60       | 27.05      | 0.507        |
|      |          |         |                 |       | 8                | 4            | 1   | 21.94         | 4.60       | 26.54      | 0.451        |
|      |          |         |                 |       | 8                | 7            | 1   | 21.89         | 4.60       | 26.49      | 0.446        |
|      |          |         |                 |       | 15               | 0            | 1   | 22.40         | 4.60       | 27.00      | 0.501        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.52         | 4.60       | 27.12      | <b>0.515</b> |
|      |          |         |                 |       | 1                | 7            | 1   | 22.48         | 4.60       | 27.08      | 0.511        |
|      |          |         |                 |       | 1                | 14           | 1   | 21.78         | 4.60       | 26.38      | 0.435        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.35         | 4.60       | 25.95      | 0.394        |
|      |          |         |                 |       | 8                | 4            | 2   | 21.04         | 4.60       | 25.64      | 0.366        |
|      |          |         |                 |       | 8                | 7            | 2   | 20.74         | 4.60       | 25.34      | 0.342        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.49         | 4.60       | 26.09      | 0.406        |

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

(3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

(4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 5        | 19975   | 1712.5          | QPSK  | 1                | 0            | 0   | 23.19         | 4.60       | 27.79      | 0.601        |
|      |          |         |                 |       | 1                | 12           | 0   | 22.91         | 4.60       | 27.51      | 0.564        |
|      |          |         |                 |       | 1                | 24           | 0   | 22.60         | 4.60       | 27.20      | 0.525        |
|      |          |         |                 |       | 12               | 0            | 1   | 22.30         | 4.60       | 26.90      | 0.490        |
|      |          |         |                 |       | 12               | 6            | 1   | 21.95         | 4.60       | 26.55      | 0.452        |
|      |          |         |                 |       | 12               | 11           | 1   | 21.78         | 4.60       | 26.38      | 0.435        |
|      |          |         |                 | 16QAM | 25               | 0            | 1   | 22.25         | 4.60       | 26.85      | 0.484        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.37         | 4.60       | 26.97      | 0.498        |
|      |          |         |                 |       | 1                | 12           | 1   | 22.33         | 4.60       | 26.93      | 0.493        |
|      |          |         |                 |       | 1                | 24           | 1   | 21.67         | 4.60       | 26.27      | 0.424        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.20         | 4.60       | 25.80      | 0.380        |
|      |          |         |                 |       | 12               | 6            | 2   | 21.05         | 4.60       | 25.65      | 0.367        |
|      |          |         |                 |       | 12               | 11           | 2   | 20.63         | 4.60       | 25.23      | 0.333        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.34         | 4.60       | 25.94      | 0.393        |
|      |          | 20175   | 1732.5          | QPSK  | 1                | 0            | 0   | 23.29         | 4.60       | 27.89      | 0.615        |
|      |          |         |                 |       | 1                | 12           | 0   | 22.83         | 4.60       | 27.43      | 0.553        |
|      |          |         |                 |       | 1                | 24           | 0   | 22.70         | 4.60       | 27.30      | 0.537        |
|      |          |         |                 |       | 12               | 0            | 1   | 22.40         | 4.60       | 27.00      | 0.501        |
|      |          |         |                 |       | 12               | 6            | 1   | 21.87         | 4.60       | 26.47      | 0.444        |
|      |          |         |                 |       | 12               | 11           | 1   | 21.88         | 4.60       | 26.48      | 0.445        |
|      |          |         |                 | 16QAM | 25               | 0            | 1   | 22.35         | 4.60       | 26.95      | 0.495        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.47         | 4.60       | 27.07      | 0.509        |
|      |          |         |                 |       | 1                | 12           | 1   | 22.43         | 4.60       | 27.03      | 0.505        |
|      |          |         |                 |       | 1                | 24           | 1   | 21.77         | 4.60       | 26.37      | 0.434        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.30         | 4.60       | 25.90      | 0.389        |
|      |          |         |                 |       | 12               | 6            | 2   | 20.97         | 4.60       | 25.57      | 0.361        |
|      |          |         |                 |       | 12               | 11           | 2   | 20.73         | 4.60       | 25.33      | 0.341        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.44         | 4.60       | 26.04      | 0.402        |
|      |          | 20375   | 1752.5          | QPSK  | 1                | 0            | 0   | 23.39         | 4.60       | 27.99      | <b>0.630</b> |
|      |          |         |                 |       | 1                | 12           | 0   | 22.95         | 4.60       | 27.55      | 0.569        |
|      |          |         |                 |       | 1                | 24           | 0   | 22.76         | 4.60       | 27.36      | 0.545        |
|      |          |         |                 |       | 12               | 0            | 1   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 |       | 12               | 6            | 1   | 21.99         | 4.60       | 26.59      | 0.456        |
|      |          |         |                 |       | 12               | 11           | 1   | 21.94         | 4.60       | 26.54      | 0.451        |
|      |          |         |                 | 16QAM | 25               | 0            | 1   | 22.45         | 4.60       | 27.05      | 0.507        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.57         | 4.60       | 27.17      | <b>0.521</b> |
|      |          |         |                 |       | 1                | 12           | 1   | 22.53         | 4.60       | 27.13      | 0.516        |
|      |          |         |                 |       | 1                | 24           | 1   | 21.83         | 4.60       | 26.43      | 0.440        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.40         | 4.60       | 26.00      | 0.398        |
|      |          |         |                 |       | 12               | 6            | 2   | 21.09         | 4.60       | 25.69      | 0.371        |
|      |          |         |                 |       | 12               | 11           | 2   | 20.79         | 4.60       | 25.39      | 0.346        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.54         | 4.60       | 26.14      | 0.411        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 10       | 20000   | 1715.0          | QPSK  | 1                | 0            | 0   | 23.24         | 4.60       | 27.84      | 0.608        |
|      |          |         |                 |       | 1                | 24           | 0   | 22.96         | 4.60       | 27.56      | 0.570        |
|      |          |         |                 |       | 1                | 49           | 0   | 22.65         | 4.60       | 27.25      | 0.531        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.35         | 4.60       | 26.95      | 0.495        |
|      |          |         |                 |       | 25               | 12           | 1   | 22.00         | 4.60       | 26.60      | 0.457        |
|      |          |         |                 |       | 25               | 24           | 1   | 21.83         | 4.60       | 26.43      | 0.440        |
|      |          |         |                 | 16QAM | 50               | 0            | 1   | 22.30         | 4.60       | 26.90      | 0.490        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.42         | 4.60       | 27.02      | 0.504        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.38         | 4.60       | 26.98      | 0.499        |
|      |          |         |                 |       | 1                | 49           | 1   | 21.72         | 4.60       | 26.32      | 0.429        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.25         | 4.60       | 25.85      | 0.385        |
|      |          |         |                 |       | 25               | 12           | 2   | 21.10         | 4.60       | 25.70      | 0.372        |
|      |          |         |                 |       | 25               | 24           | 2   | 20.68         | 4.60       | 25.28      | 0.337        |
|      |          | 20175   | 1732.5          | QPSK  | 50               | 0            | 2   | 21.39         | 4.60       | 25.99      | 0.397        |
|      |          |         |                 |       | 1                | 0            | 0   | 23.34         | 4.60       | 27.94      | 0.622        |
|      |          |         |                 |       | 1                | 24           | 0   | 22.88         | 4.60       | 27.48      | 0.560        |
|      |          |         |                 |       | 1                | 49           | 0   | 22.75         | 4.60       | 27.35      | 0.543        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.45         | 4.60       | 27.05      | 0.507        |
|      |          |         |                 |       | 25               | 12           | 1   | 21.92         | 4.60       | 26.52      | 0.449        |
|      |          |         |                 | 16QAM | 25               | 24           | 1   | 21.93         | 4.60       | 26.53      | 0.450        |
|      |          |         |                 |       | 50               | 0            | 1   | 22.40         | 4.60       | 27.00      | 0.501        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.52         | 4.60       | 27.12      | 0.515        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.48         | 4.60       | 27.08      | 0.511        |
|      |          |         |                 |       | 1                | 49           | 1   | 21.82         | 4.60       | 26.42      | 0.439        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.35         | 4.60       | 25.95      | 0.394        |
|      |          | 20350   | 1750.0          | QPSK  | 25               | 12           | 2   | 21.02         | 4.60       | 25.62      | 0.365        |
|      |          |         |                 |       | 25               | 24           | 2   | 20.78         | 4.60       | 25.38      | 0.345        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.49         | 4.60       | 26.09      | 0.406        |
|      |          |         |                 | 16QAM | 1                | 0            | 0   | 23.44         | 4.60       | 28.04      | <b>0.637</b> |
|      |          |         |                 |       | 1                | 24           | 0   | 23.00         | 4.60       | 27.60      | 0.575        |
|      |          |         |                 |       | 1                | 49           | 0   | 22.81         | 4.60       | 27.41      | 0.551        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.55         | 4.60       | 27.15      | 0.519        |
|      |          |         |                 |       | 25               | 12           | 1   | 22.04         | 4.60       | 26.64      | 0.461        |
|      |          |         |                 |       | 25               | 24           | 1   | 21.99         | 4.60       | 26.59      | 0.456        |
|      |          |         |                 |       | 50               | 0            | 1   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.62         | 4.60       | 27.22      | <b>0.527</b> |
|      |          |         |                 |       | 1                | 24           | 1   | 22.58         | 4.60       | 27.18      | 0.522        |
|      |          |         |                 |       | 1                | 49           | 1   | 21.88         | 4.60       | 26.48      | 0.445        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.45         | 4.60       | 26.05      | 0.403        |
|      |          |         |                 |       | 25               | 12           | 2   | 21.14         | 4.60       | 25.74      | 0.375        |
|      |          |         |                 |       | 25               | 24           | 2   | 20.84         | 4.60       | 25.44      | 0.350        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.59         | 4.60       | 26.19      | 0.416        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 15       | 20025   | 1717.5          | QPSK  | 1                | 0            | 0   | 23.29         | 4.60       | 27.89      | 0.615        |
|      |          |         |                 |       | 1                | 37           | 0   | 23.01         | 4.60       | 27.61      | 0.577        |
|      |          |         |                 |       | 1                | 74           | 0   | 22.70         | 4.60       | 27.30      | 0.537        |
|      |          |         |                 |       | 36               | 0            | 1   | 22.40         | 4.60       | 27.00      | 0.501        |
|      |          |         |                 |       | 36               | 18           | 1   | 22.05         | 4.60       | 26.65      | 0.462        |
|      |          |         |                 |       | 36               | 35           | 1   | 21.88         | 4.60       | 26.48      | 0.445        |
|      |          |         |                 | 16QAM | 75               | 0            | 1   | 22.35         | 4.60       | 26.95      | 0.495        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.47         | 4.60       | 27.07      | 0.509        |
|      |          |         |                 |       | 1                | 37           | 1   | 22.43         | 4.60       | 27.03      | 0.505        |
|      |          |         |                 |       | 1                | 74           | 1   | 21.77         | 4.60       | 26.37      | 0.434        |
|      |          |         |                 |       | 36               | 0            | 2   | 21.30         | 4.60       | 25.90      | 0.389        |
|      |          |         |                 |       | 36               | 18           | 2   | 21.15         | 4.60       | 25.75      | 0.376        |
|      |          |         |                 |       | 36               | 35           | 2   | 20.73         | 4.60       | 25.33      | 0.341        |
|      |          |         |                 |       | 75               | 0            | 2   | 21.44         | 4.60       | 26.04      | 0.402        |
|      |          | 20175   | 1732.5          | QPSK  | 1                | 0            | 0   | 23.39         | 4.60       | 27.99      | 0.630        |
|      |          |         |                 |       | 1                | 37           | 0   | 22.93         | 4.60       | 27.53      | 0.566        |
|      |          |         |                 |       | 1                | 74           | 0   | 22.80         | 4.60       | 27.40      | 0.550        |
|      |          |         |                 |       | 36               | 0            | 1   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 |       | 36               | 18           | 1   | 21.97         | 4.60       | 26.57      | 0.454        |
|      |          |         |                 |       | 36               | 35           | 1   | 21.98         | 4.60       | 26.58      | 0.455        |
|      |          |         |                 | 16QAM | 75               | 0            | 1   | 22.45         | 4.60       | 27.05      | 0.507        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.57         | 4.60       | 27.17      | 0.521        |
|      |          |         |                 |       | 1                | 37           | 1   | 22.53         | 4.60       | 27.13      | 0.516        |
|      |          |         |                 |       | 1                | 74           | 1   | 21.87         | 4.60       | 26.47      | 0.444        |
|      |          |         |                 |       | 36               | 0            | 2   | 21.40         | 4.60       | 26.00      | 0.398        |
|      |          |         |                 |       | 36               | 18           | 2   | 21.07         | 4.60       | 25.67      | 0.369        |
|      |          |         |                 |       | 36               | 35           | 2   | 20.83         | 4.60       | 25.43      | 0.349        |
|      |          |         |                 |       | 75               | 0            | 2   | 21.54         | 4.60       | 26.14      | 0.411        |
|      |          | 20325   | 1747.5          | QPSK  | 1                | 0            | 0   | 23.49         | 4.60       | 28.09      | <b>0.644</b> |
|      |          |         |                 |       | 1                | 37           | 0   | 23.05         | 4.60       | 27.65      | 0.582        |
|      |          |         |                 |       | 1                | 74           | 0   | 22.86         | 4.60       | 27.46      | 0.557        |
|      |          |         |                 |       | 36               | 0            | 1   | 22.60         | 4.60       | 27.20      | 0.525        |
|      |          |         |                 |       | 36               | 18           | 1   | 22.09         | 4.60       | 26.69      | 0.467        |
|      |          |         |                 |       | 36               | 35           | 1   | 22.04         | 4.60       | 26.64      | 0.461        |
|      |          |         |                 | 16QAM | 75               | 0            | 1   | 22.55         | 4.60       | 27.15      | 0.519        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.67         | 4.60       | 27.27      | <b>0.533</b> |
|      |          |         |                 |       | 1                | 37           | 1   | 22.63         | 4.60       | 27.23      | 0.528        |
|      |          |         |                 |       | 1                | 74           | 1   | 21.93         | 4.60       | 26.53      | 0.450        |
|      |          |         |                 |       | 36               | 0            | 2   | 21.50         | 4.60       | 26.10      | 0.407        |
|      |          |         |                 |       | 36               | 18           | 2   | 21.19         | 4.60       | 25.79      | 0.379        |
|      |          |         |                 |       | 36               | 35           | 2   | 20.89         | 4.60       | 25.49      | 0.354        |
|      |          |         |                 |       | 75               | 0            | 2   | 21.64         | 4.60       | 26.24      | 0.421        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | EIRP (dBm) | EIRP (W)     |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|------------|--------------|
| 4    | 20       | 20050   | 1720.0          | QPSK  | 1                | 0            | 0   | 23.34         | 4.60       | 27.94      | 0.622        |
|      |          |         |                 |       | 1                | 49           | 0   | 23.06         | 4.60       | 27.66      | 0.583        |
|      |          |         |                 |       | 1                | 99           | 0   | 22.75         | 4.60       | 27.35      | 0.543        |
|      |          |         |                 |       | 50               | 0            | 1   | 22.45         | 4.60       | 27.05      | 0.507        |
|      |          |         |                 |       | 50               | 24           | 1   | 22.10         | 4.60       | 26.70      | 0.468        |
|      |          |         |                 |       | 50               | 49           | 1   | 21.93         | 4.60       | 26.53      | 0.450        |
|      |          |         |                 | 16QAM | 100              | 0            | 1   | 22.40         | 4.60       | 27.00      | 0.501        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.52         | 4.60       | 27.12      | 0.515        |
|      |          |         |                 |       | 1                | 49           | 1   | 22.48         | 4.60       | 27.08      | 0.511        |
|      |          |         |                 |       | 1                | 99           | 1   | 21.82         | 4.60       | 26.42      | 0.439        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.35         | 4.60       | 25.95      | 0.394        |
|      |          |         |                 |       | 50               | 24           | 2   | 21.20         | 4.60       | 25.80      | 0.380        |
|      |          |         |                 |       | 50               | 49           | 2   | 20.78         | 4.60       | 25.38      | 0.345        |
|      |          |         |                 |       | 100              | 0            | 2   | 21.49         | 4.60       | 26.09      | 0.406        |
|      |          | 20175   | 1732.5          | QPSK  | 1                | 0            | 0   | 23.44         | 4.60       | 28.04      | 0.637        |
|      |          |         |                 |       | 1                | 49           | 0   | 22.98         | 4.60       | 27.58      | 0.573        |
|      |          |         |                 |       | 1                | 99           | 0   | 22.85         | 4.60       | 27.45      | 0.556        |
|      |          |         |                 |       | 50               | 0            | 1   | 22.55         | 4.60       | 27.15      | 0.519        |
|      |          |         |                 |       | 50               | 24           | 1   | 22.02         | 4.60       | 26.62      | 0.459        |
|      |          |         |                 |       | 50               | 49           | 1   | 22.03         | 4.60       | 26.63      | 0.460        |
|      |          |         |                 | 16QAM | 100              | 0            | 1   | 22.50         | 4.60       | 27.10      | 0.513        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.62         | 4.60       | 27.22      | 0.527        |
|      |          |         |                 |       | 1                | 49           | 1   | 22.58         | 4.60       | 27.18      | 0.522        |
|      |          |         |                 |       | 1                | 99           | 1   | 21.92         | 4.60       | 26.52      | 0.449        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.45         | 4.60       | 26.05      | 0.403        |
|      |          |         |                 |       | 50               | 24           | 2   | 21.12         | 4.60       | 25.72      | 0.373        |
|      |          |         |                 |       | 50               | 49           | 2   | 20.88         | 4.60       | 25.48      | 0.353        |
|      |          |         |                 |       | 100              | 0            | 2   | 21.59         | 4.60       | 26.19      | 0.416        |
|      |          | 20300   | 1745.0          | QPSK  | 1                | 0            | 0   | 23.54         | 4.60       | 28.14      | <b>0.652</b> |
|      |          |         |                 |       | 1                | 49           | 0   | 23.10         | 4.60       | 27.70      | 0.589        |
|      |          |         |                 |       | 1                | 99           | 0   | 22.91         | 4.60       | 27.51      | 0.564        |
|      |          |         |                 |       | 50               | 0            | 1   | 22.65         | 4.60       | 27.25      | 0.531        |
|      |          |         |                 |       | 50               | 24           | 1   | 22.14         | 4.60       | 26.74      | 0.472        |
|      |          |         |                 |       | 50               | 49           | 1   | 22.09         | 4.60       | 26.69      | 0.467        |
|      |          |         |                 | 16QAM | 100              | 0            | 1   | 22.60         | 4.60       | 27.20      | 0.525        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.72         | 4.60       | 27.32      | <b>0.540</b> |
|      |          |         |                 |       | 1                | 49           | 1   | 22.68         | 4.60       | 27.28      | 0.535        |
|      |          |         |                 |       | 1                | 99           | 1   | 21.98         | 4.60       | 26.58      | 0.455        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.55         | 4.60       | 26.15      | 0.412        |
|      |          |         |                 |       | 50               | 24           | 2   | 21.24         | 4.60       | 25.84      | 0.384        |
|      |          |         |                 |       | 50               | 49           | 2   | 20.94         | 4.60       | 25.54      | 0.358        |
|      |          |         |                 |       | 100              | 0            | 2   | 21.69         | 4.60       | 26.29      | 0.426        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$
- (4) The maximum antenna gain is applied.



**ERP (Conducted):**

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | ERP (dBm) | ERP (W)      |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|-----------|--------------|
| 12   | 1.4      | 23017   | 699.7           | QPSK  | 1                | 0            | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 1                | 2            | 0   | 23.61         | 3.11       | 24.57     | 0.286        |
|      |          |         |                 |       | 1                | 5            | 0   | 23.56         | 3.11       | 24.52     | 0.283        |
|      |          |         |                 |       | 3                | 0            | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 3                | 1            | 0   | 23.61         | 3.11       | 24.57     | 0.286        |
|      |          |         |                 |       | 3                | 2            | 0   | 23.56         | 3.11       | 24.52     | 0.283        |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.72         | 3.11       | 23.68     | 0.233        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.84         | 3.11       | 23.80     | <b>0.240</b> |
|      |          |         |                 |       | 1                | 2            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 1                | 5            | 1   | 22.63         | 3.11       | 23.59     | 0.229        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.84         | 3.11       | 23.80     | <b>0.240</b> |
|      |          |         |                 |       | 3                | 1            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 3                | 2            | 1   | 22.63         | 3.11       | 23.59     | 0.229        |
|      |          |         |                 |       | 6                | 0            | 2   | 21.81         | 3.11       | 22.77     | 0.189        |
|      |          | 23095   | 707.5           | QPSK  | 1                | 0            | 0   | 23.62         | 3.11       | 24.58     | 0.287        |
|      |          |         |                 |       | 1                | 2            | 0   | 23.51         | 3.11       | 24.47     | 0.280        |
|      |          |         |                 |       | 1                | 5            | 0   | 23.46         | 3.11       | 24.42     | 0.277        |
|      |          |         |                 |       | 3                | 0            | 0   | 23.62         | 3.11       | 24.58     | 0.287        |
|      |          |         |                 |       | 3                | 1            | 0   | 23.51         | 3.11       | 24.47     | 0.280        |
|      |          |         |                 |       | 3                | 2            | 0   | 23.46         | 3.11       | 24.42     | 0.277        |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.68         | 3.11       | 23.64     | 0.231        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 1                | 2            | 1   | 22.76         | 3.11       | 23.72     | 0.236        |
|      |          |         |                 |       | 1                | 5            | 1   | 22.53         | 3.11       | 23.49     | 0.223        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 3                | 1            | 1   | 22.76         | 3.11       | 23.72     | 0.236        |
|      |          |         |                 |       | 3                | 2            | 1   | 22.53         | 3.11       | 23.49     | 0.223        |
|      |          |         |                 |       | 6                | 0            | 2   | 20.50         | 3.11       | 21.46     | 0.140        |
|      |          | 23173   | 715.3           | QPSK  | 1                | 0            | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 1                | 2            | 0   | 23.64         | 3.11       | 24.60     | 0.288        |
|      |          |         |                 |       | 1                | 5            | 0   | 23.69         | 3.11       | 24.65     | <b>0.292</b> |
|      |          |         |                 |       | 3                | 0            | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 3                | 1            | 0   | 23.64         | 3.11       | 24.60     | 0.288        |
|      |          |         |                 |       | 3                | 2            | 0   | 23.69         | 3.11       | 24.65     | <b>0.292</b> |
|      |          |         |                 | 16QAM | 6                | 0            | 1   | 22.72         | 3.11       | 23.68     | 0.233        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.84         | 3.11       | 23.80     | <b>0.240</b> |
|      |          |         |                 |       | 1                | 2            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 1                | 5            | 1   | 22.76         | 3.11       | 23.72     | 0.236        |
|      |          |         |                 |       | 3                | 0            | 1   | 22.84         | 3.11       | 23.80     | <b>0.240</b> |
|      |          |         |                 |       | 3                | 1            | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 3                | 2            | 1   | 22.76         | 3.11       | 23.72     | 0.236        |
|      |          |         |                 |       | 6                | 0            | 2   | 20.60         | 3.11       | 21.56     | 0.143        |

**NOTE:**

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 W \cdot 10^{(P(dBm) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | ERP (dBm) | ERP (W)      |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|-----------|--------------|
| 12   | 3        | 23025   | 700.5           | QPSK  | 1                | 0            | 0   | 23.71         | 3.11       | 24.67     | 0.293        |
|      |          |         |                 |       | 1                | 7            | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 1                | 14           | 0   | 23.61         | 3.11       | 24.57     | 0.286        |
|      |          |         |                 |       | 8                | 0            | 1   | 22.82         | 3.11       | 23.78     | 0.239        |
|      |          |         |                 |       | 8                | 4            | 1   | 22.70         | 3.11       | 23.66     | 0.232        |
|      |          |         |                 |       | 8                | 7            | 1   | 22.79         | 3.11       | 23.75     | 0.237        |
|      |          |         |                 | 16QAM | 15               | 0            | 1   | 22.77         | 3.11       | 23.73     | 0.236        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.89         | 3.11       | 23.85     | <b>0.243</b> |
|      |          |         |                 |       | 1                | 7            | 1   | 22.85         | 3.11       | 23.81     | 0.240        |
|      |          |         |                 |       | 1                | 14           | 1   | 22.68         | 3.11       | 23.64     | 0.231        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.72         | 3.11       | 22.68     | 0.185        |
|      |          |         |                 |       | 8                | 4            | 2   | 21.80         | 3.11       | 22.76     | 0.189        |
|      |          |         |                 |       | 8                | 7            | 2   | 21.64         | 3.11       | 22.60     | 0.182        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.86         | 3.11       | 22.82     | 0.191        |
|      |          | 23095   | 707.5           | QPSK  | 1                | 0            | 0   | 23.67         | 3.11       | 24.63     | 0.290        |
|      |          |         |                 |       | 1                | 7            | 0   | 23.56         | 3.11       | 24.52     | 0.283        |
|      |          |         |                 |       | 1                | 14           | 0   | 23.51         | 3.11       | 24.47     | 0.280        |
|      |          |         |                 |       | 8                | 0            | 1   | 22.78         | 3.11       | 23.74     | 0.237        |
|      |          |         |                 |       | 8                | 4            | 1   | 22.60         | 3.11       | 23.56     | 0.227        |
|      |          |         |                 |       | 8                | 7            | 1   | 22.69         | 3.11       | 23.65     | 0.232        |
|      |          |         |                 | 16QAM | 15               | 0            | 1   | 22.73         | 3.11       | 23.69     | 0.234        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.85         | 3.11       | 23.81     | 0.240        |
|      |          |         |                 |       | 1                | 7            | 1   | 22.81         | 3.11       | 23.77     | 0.238        |
|      |          |         |                 |       | 1                | 14           | 1   | 22.58         | 3.11       | 23.54     | 0.226        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.68         | 3.11       | 22.64     | 0.184        |
|      |          |         |                 |       | 8                | 4            | 2   | 21.70         | 3.11       | 22.66     | 0.185        |
|      |          |         |                 |       | 8                | 7            | 2   | 21.54         | 3.11       | 22.50     | 0.178        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.82         | 3.11       | 22.78     | 0.190        |
|      |          | 23165   | 714.5           | QPSK  | 1                | 0            | 0   | 23.71         | 3.11       | 24.67     | 0.293        |
|      |          |         |                 |       | 1                | 7            | 0   | 23.69         | 3.11       | 24.65     | 0.292        |
|      |          |         |                 |       | 1                | 14           | 0   | 23.74         | 3.11       | 24.70     | <b>0.295</b> |
|      |          |         |                 |       | 8                | 0            | 1   | 22.82         | 3.11       | 23.78     | 0.239        |
|      |          |         |                 |       | 8                | 4            | 1   | 22.73         | 3.11       | 23.69     | 0.234        |
|      |          |         |                 |       | 8                | 7            | 1   | 22.92         | 3.11       | 23.88     | 0.244        |
|      |          |         |                 | 16QAM | 15               | 0            | 1   | 22.77         | 3.11       | 23.73     | 0.236        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.89         | 3.11       | 23.85     | <b>0.243</b> |
|      |          |         |                 |       | 1                | 7            | 1   | 22.85         | 3.11       | 23.81     | 0.240        |
|      |          |         |                 |       | 1                | 14           | 1   | 22.81         | 3.11       | 23.77     | 0.238        |
|      |          |         |                 |       | 8                | 0            | 2   | 21.72         | 3.11       | 22.68     | 0.185        |
|      |          |         |                 |       | 8                | 4            | 2   | 21.83         | 3.11       | 22.79     | 0.190        |
|      |          |         |                 |       | 8                | 7            | 2   | 21.77         | 3.11       | 22.73     | 0.187        |
|      |          |         |                 |       | 15               | 0            | 2   | 21.86         | 3.11       | 22.82     | 0.191        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | ERP (dBm) | ERP (W)      |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|-----------|--------------|
| 12   | 5        | 23035   | 701.5           | QPSK  | 1                | 0            | 0   | 23.76         | 3.11       | 24.72     | 0.296        |
|      |          |         |                 |       | 1                | 12           | 0   | 23.71         | 3.11       | 24.67     | 0.293        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 12               | 0            | 1   | 22.87         | 3.11       | 23.83     | 0.242        |
|      |          |         |                 |       | 12               | 6            | 1   | 22.75         | 3.11       | 23.71     | 0.235        |
|      |          |         |                 |       | 12               | 11           | 1   | 22.84         | 3.11       | 23.80     | 0.240        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.82         | 3.11       | 23.78     | 0.239        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.94         | 3.11       | 23.90     | <b>0.245</b> |
|      |          |         |                 |       | 1                | 12           | 1   | 22.90         | 3.11       | 23.86     | 0.243        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.73         | 3.11       | 23.69     | 0.234        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.77         | 3.11       | 22.73     | 0.187        |
|      |          |         |                 |       | 12               | 6            | 2   | 21.85         | 3.11       | 22.81     | 0.191        |
|      |          |         |                 |       | 12               | 11           | 2   | 21.69         | 3.11       | 22.65     | 0.184        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.91         | 3.11       | 22.87     | 0.194        |
|      |          | 23095   | 707.5           | QPSK  | 1                | 0            | 0   | 23.72         | 3.11       | 24.68     | 0.294        |
|      |          |         |                 |       | 1                | 12           | 0   | 23.61         | 3.11       | 24.57     | 0.286        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.56         | 3.11       | 24.52     | 0.283        |
|      |          |         |                 |       | 12               | 0            | 1   | 22.83         | 3.11       | 23.79     | 0.239        |
|      |          |         |                 |       | 12               | 6            | 1   | 22.65         | 3.11       | 23.61     | 0.230        |
|      |          |         |                 |       | 12               | 11           | 1   | 22.74         | 3.11       | 23.70     | 0.234        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.78         | 3.11       | 23.74     | 0.237        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.90         | 3.11       | 23.86     | 0.243        |
|      |          |         |                 |       | 1                | 12           | 1   | 22.86         | 3.11       | 23.82     | 0.241        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.63         | 3.11       | 23.59     | 0.229        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.73         | 3.11       | 22.69     | 0.186        |
|      |          |         |                 |       | 12               | 6            | 2   | 21.75         | 3.11       | 22.71     | 0.187        |
|      |          |         |                 |       | 12               | 11           | 2   | 21.59         | 3.11       | 22.55     | 0.180        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.87         | 3.11       | 22.83     | 0.192        |
|      |          | 23155   | 713.5           | QPSK  | 1                | 0            | 0   | 23.76         | 3.11       | 24.72     | 0.296        |
|      |          |         |                 |       | 1                | 12           | 0   | 23.74         | 3.11       | 24.70     | 0.295        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.79         | 3.11       | 24.75     | <b>0.299</b> |
|      |          |         |                 |       | 12               | 0            | 1   | 22.87         | 3.11       | 23.83     | 0.242        |
|      |          |         |                 |       | 12               | 6            | 1   | 22.78         | 3.11       | 23.74     | 0.237        |
|      |          |         |                 |       | 12               | 11           | 1   | 22.97         | 3.11       | 23.93     | 0.247        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.82         | 3.11       | 23.78     | 0.239        |
|      |          |         |                 | 16QAM | 1                | 0            | 1   | 22.94         | 3.11       | 23.90     | <b>0.245</b> |
|      |          |         |                 |       | 1                | 12           | 1   | 22.90         | 3.11       | 23.86     | 0.243        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.86         | 3.11       | 23.82     | 0.241        |
|      |          |         |                 |       | 12               | 0            | 2   | 21.77         | 3.11       | 22.73     | 0.187        |
|      |          |         |                 |       | 12               | 6            | 2   | 21.88         | 3.11       | 22.84     | 0.192        |
|      |          |         |                 |       | 12               | 11           | 2   | 21.82         | 3.11       | 22.78     | 0.190        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.91         | 3.11       | 22.87     | 0.194        |

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$
- (4) The maximum antenna gain is applied.

| Band | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Offset | MPR | Average power | Gain (dBi) | ERP (dBm) | ERP (W)      |
|------|----------|---------|-----------------|-------|------------------|--------------|-----|---------------|------------|-----------|--------------|
| 12   | 10       | 23060   | 704.0           | QPSK  | 1                | 0            | 0   | 23.81         | 3.11       | 24.77     | 0.300        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.76         | 3.11       | 24.72     | 0.296        |
|      |          |         |                 |       | 1                | 49           | 0   | 23.71         | 3.11       | 24.67     | 0.293        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.92         | 3.11       | 23.88     | 0.244        |
|      |          |         |                 |       | 25               | 12           | 1   | 22.80         | 3.11       | 23.76     | 0.238        |
|      |          |         |                 |       | 25               | 24           | 1   | 22.89         | 3.11       | 23.85     | 0.243        |
|      |          |         |                 | 16QAM | 50               | 0            | 1   | 22.87         | 3.11       | 23.83     | 0.242        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.99         | 3.11       | 23.95     | <b>0.248</b> |
|      |          |         |                 |       | 1                | 24           | 1   | 22.95         | 3.11       | 23.91     | 0.246        |
|      |          |         |                 |       | 1                | 49           | 1   | 22.78         | 3.11       | 23.74     | 0.237        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.82         | 3.11       | 22.78     | 0.190        |
|      |          |         |                 |       | 25               | 12           | 2   | 21.90         | 3.11       | 22.86     | 0.193        |
|      |          |         |                 |       | 25               | 24           | 2   | 21.74         | 3.11       | 22.70     | 0.186        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.96         | 3.11       | 22.92     | 0.196        |
|      |          | 23095   | 707.5           | QPSK  | 1                | 0            | 0   | 23.77         | 3.11       | 24.73     | 0.297        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.66         | 3.11       | 24.62     | 0.290        |
|      |          |         |                 |       | 1                | 49           | 0   | 23.61         | 3.11       | 24.57     | 0.286        |
|      |          |         |                 |       | 25               | 0            | 1   | 22.88         | 3.11       | 23.84     | 0.242        |
|      |          |         |                 |       | 25               | 12           | 1   | 22.70         | 3.11       | 23.66     | 0.232        |
|      |          |         |                 |       | 25               | 24           | 1   | 22.79         | 3.11       | 23.75     | 0.237        |
|      |          |         |                 | 16QAM | 50               | 0            | 1   | 22.83         | 3.11       | 23.79     | 0.239        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.95         | 3.11       | 23.91     | 0.246        |
|      |          |         |                 |       | 1                | 24           | 1   | 22.91         | 3.11       | 23.87     | 0.244        |
|      |          |         |                 |       | 1                | 49           | 1   | 22.68         | 3.11       | 23.64     | 0.231        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.78         | 3.11       | 22.74     | 0.188        |
|      |          |         |                 |       | 25               | 12           | 2   | 21.80         | 3.11       | 22.76     | 0.189        |
|      |          |         |                 |       | 25               | 24           | 2   | 21.64         | 3.11       | 22.60     | 0.182        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.92         | 3.11       | 22.88     | 0.194        |
|      |          | 23130   | 711.0           | QPSK  | 1                | 0            | 0   | 23.81         | 3.11       | 24.77     | 0.300        |
|      |          |         |                 |       | 1                | 24           | 0   | 23.79         | 3.11       | 24.75     | 0.299        |
|      |          |         |                 |       | 1                | 49           | 0   | 23.84         | 3.11       | 24.80     | <b>0.302</b> |
|      |          |         |                 |       | 25               | 0            | 1   | 22.92         | 3.11       | 23.88     | 0.244        |
|      |          |         |                 |       | 25               | 12           | 1   | 22.83         | 3.11       | 23.79     | 0.239        |
|      |          |         |                 |       | 25               | 24           | 1   | 23.02         | 3.11       | 23.98     | 0.250        |
|      |          |         |                 | 16QAM | 50               | 0            | 1   | 22.87         | 3.11       | 23.83     | 0.242        |
|      |          |         |                 |       | 1                | 0            | 1   | 22.99         | 3.11       | 23.95     | <b>0.248</b> |
|      |          |         |                 |       | 1                | 24           | 1   | 22.95         | 3.11       | 23.91     | 0.246        |
|      |          |         |                 |       | 1                | 49           | 1   | 22.91         | 3.11       | 23.87     | 0.244        |
|      |          |         |                 |       | 25               | 0            | 2   | 21.82         | 3.11       | 22.78     | 0.190        |
|      |          |         |                 |       | 25               | 12           | 2   | 21.93         | 3.11       | 22.89     | 0.195        |
|      |          |         |                 |       | 25               | 24           | 2   | 21.87         | 3.11       | 22.83     | 0.192        |
|      |          |         |                 |       | 50               | 0            | 2   | 21.96         | 3.11       | 22.92     | 0.196        |

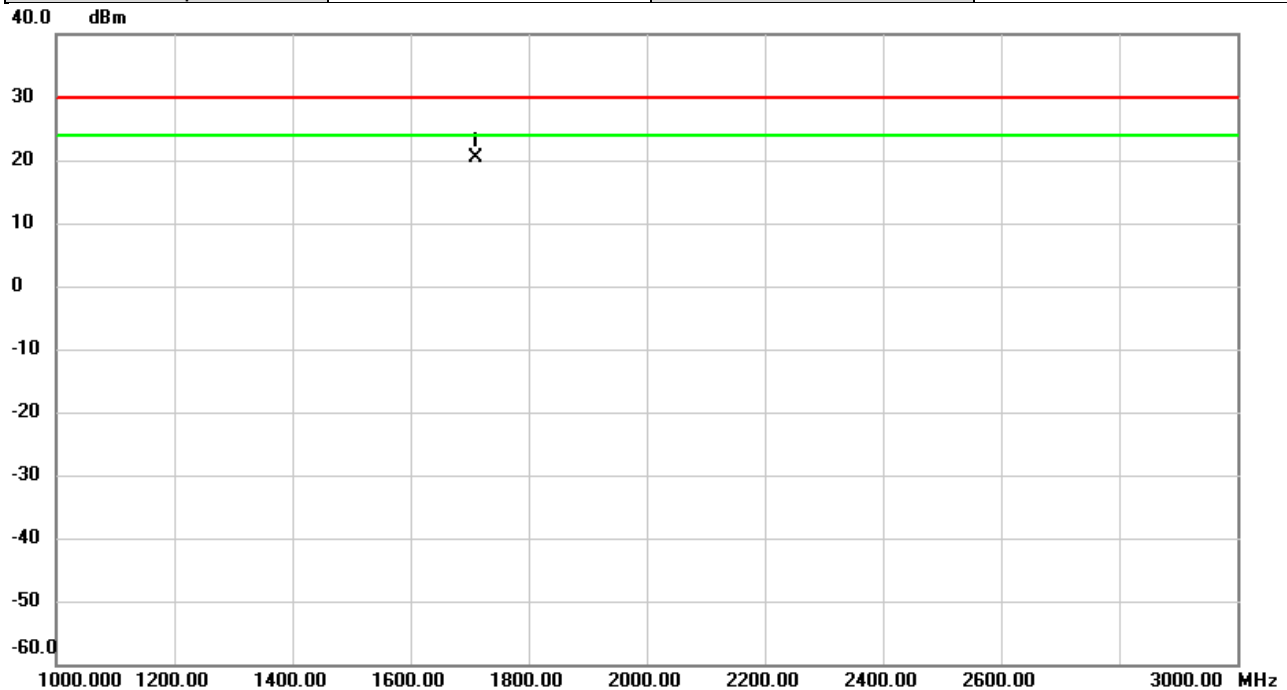
NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3)  $P(W) = 1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10)} / 1000$
- (4) The maximum antenna gain is applied.

## EIRP (Radiated):

For External antenna:

|              |            |              |           |
|--------------|------------|--------------|-----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15 |
| Test Channel | CH 20050   | Polarization | Vertical  |
| Temp         | 22°C       | Hum.         | 61%       |

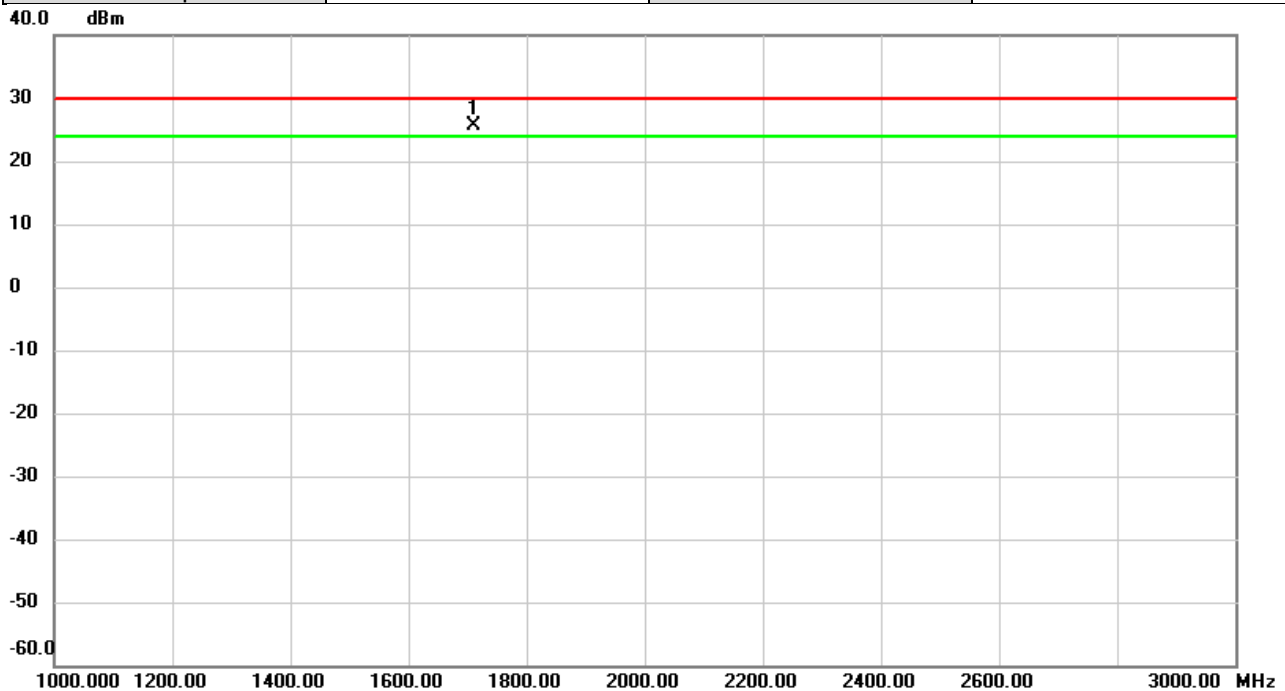


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    |          |         |
| 1   | *   | 1711.400 | -18.98        | 39.47          | 20.49       | 30.00 | -9.51 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15  |
| Test Channel | CH 20050   | Polarization | Horizontal |
| Temp         | 22°C       | Hum.         | 61%        |

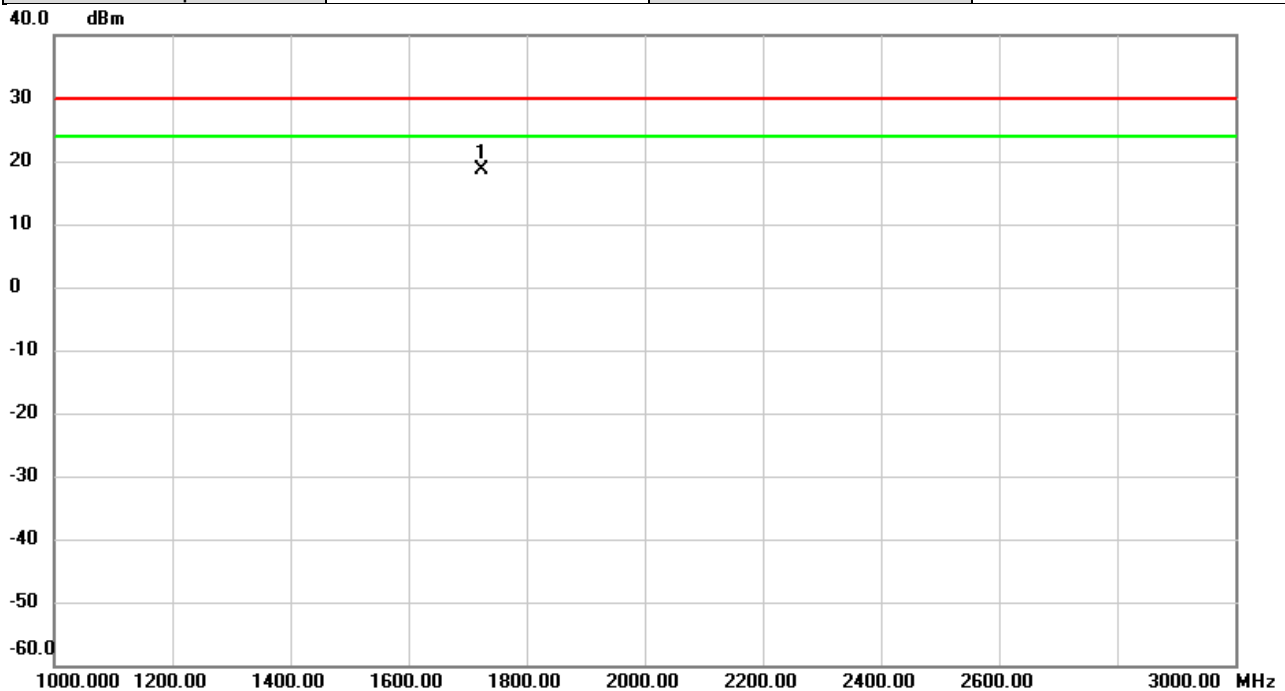


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1711.400 | -14.48        | 40.11          | 25.63       | 30.00 | -4.37 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |           |
|--------------|------------|--------------|-----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15 |
| Test Channel | CH 20175   | Polarization | Vertical  |
| Temp         | 22°C       | Hum.         | 61%       |

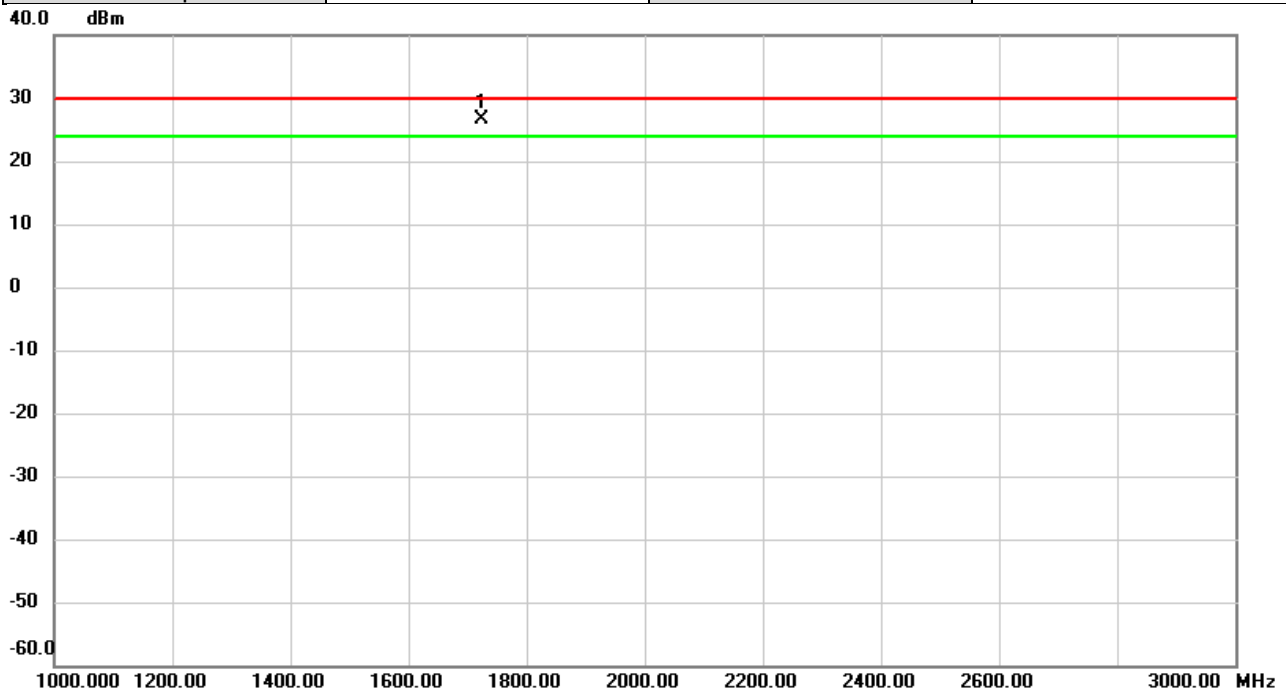


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 1723.933 | -20.89        | 39.53          | 18.64       | 30.00 | -11.36 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15  |
| Test Channel | CH 20175   | Polarization | Horizontal |
| Temp         | 22°C       | Hum.         | 61%        |



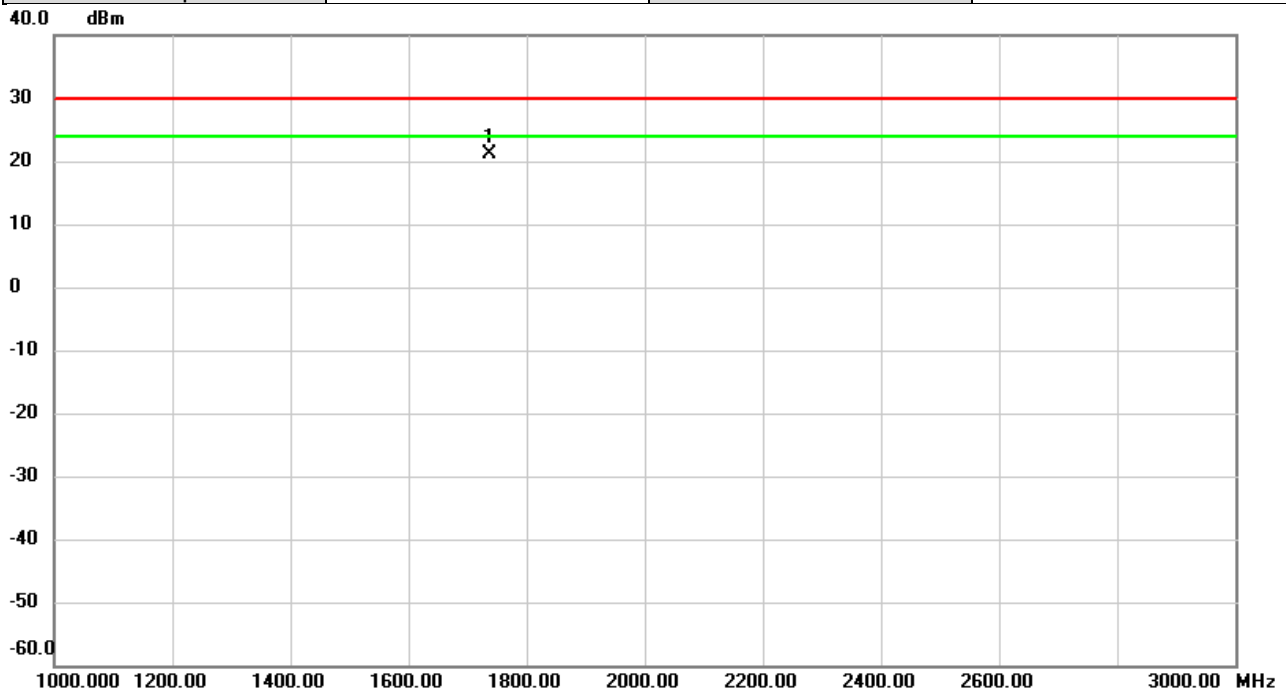
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1723.867 | -13.49        | 40.15          | 26.66       | 30.00 | -3.34 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



|              |            |              |           |
|--------------|------------|--------------|-----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15 |
| Test Channel | CH 20300   | Polarization | Vertical  |
| Temp         | 22°C       | Hum.         | 61%       |

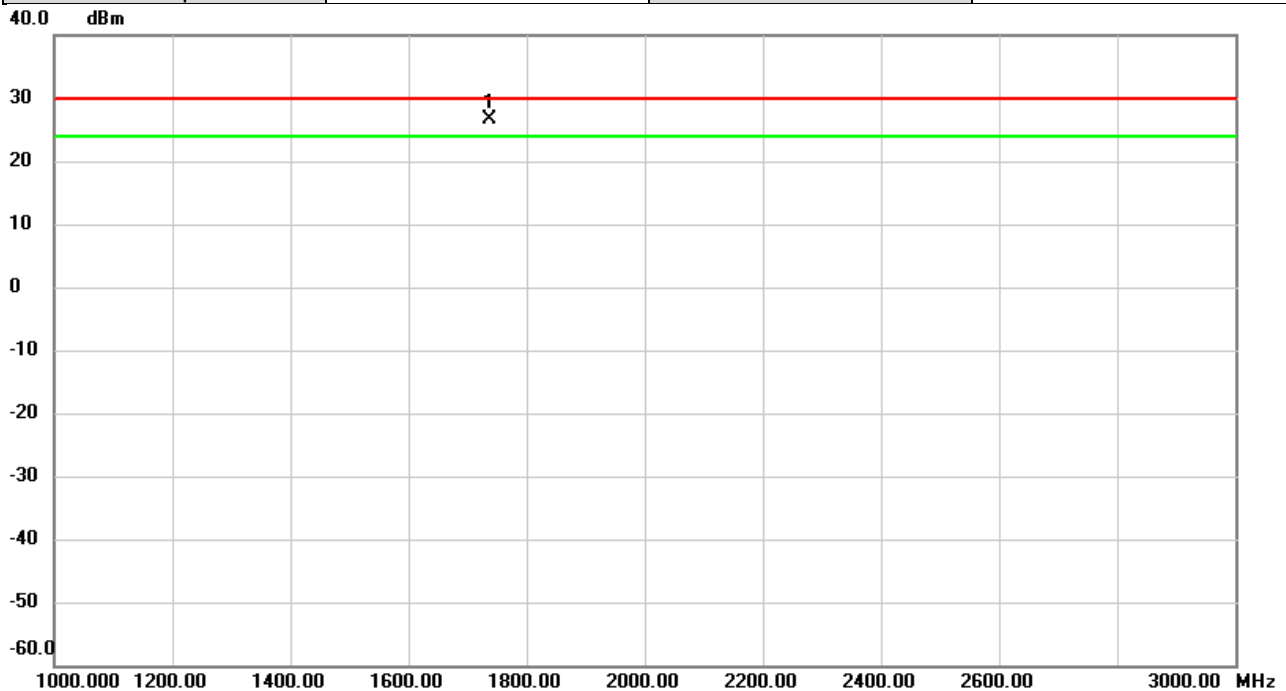


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1736.400 | -18.52        | 39.58          | 21.06       | 30.00 | -8.94 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/4/15  |
| Test Channel | CH 20300   | Polarization | Horizontal |
| Temp         | 22°C       | Hum.         | 61%        |



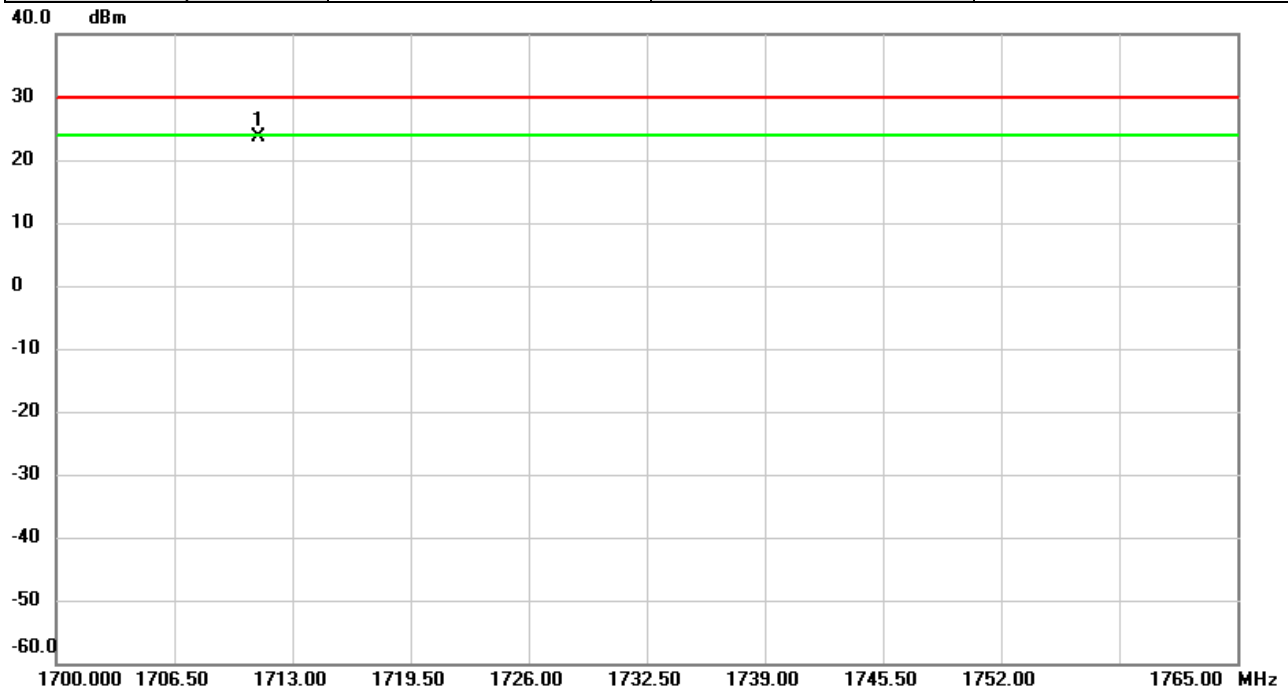
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1736.400 | -13.60        | 40.20          | 26.60       | 30.00 | -3.40 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

For Built-in antenna:

|              |            |              |          |
|--------------|------------|--------------|----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8 |
| Test Channel | CH 20050   | Polarization | Vertical |
| Temp         | 24°C       | Hum.         | 58%      |

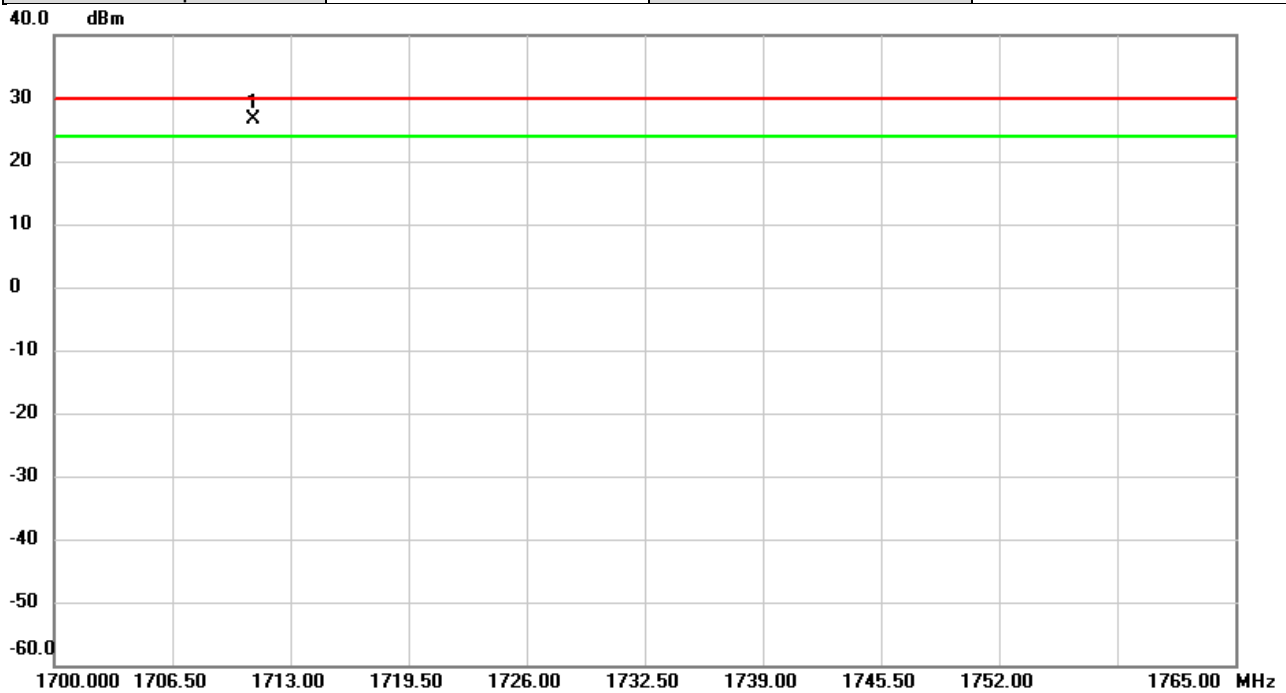


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    |          |         |
| 1   | *   | 1711.113 | -15.84        | 39.47          | 23.63       | 30.00 | -6.37 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8   |
| Test Channel | CH 20050   | Polarization | Horizontal |
| Temp         | 24°C       | Hum.         | 58%        |

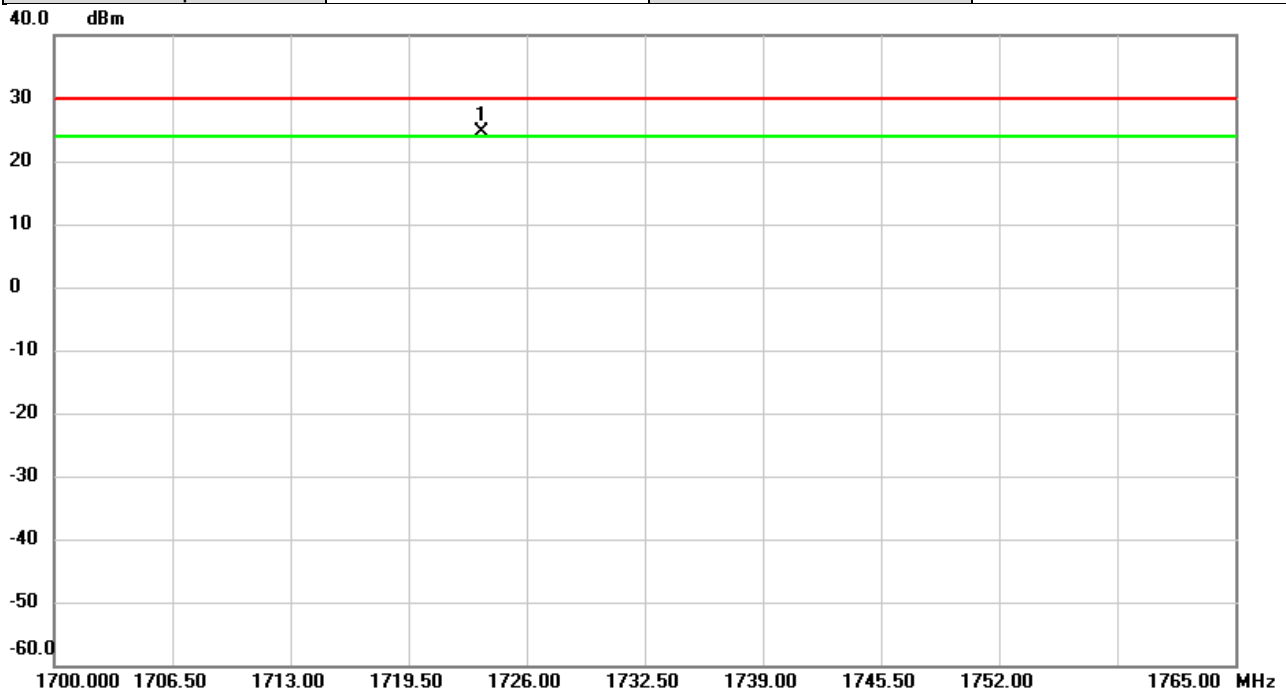


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1710.966 | -13.57        | 40.11          | 26.54       | 30.00 | -3.46 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |          |
|--------------|------------|--------------|----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8 |
| Test Channel | CH 20175   | Polarization | Vertical |
| Temp         | 24°C       | Hum.         | 58%      |

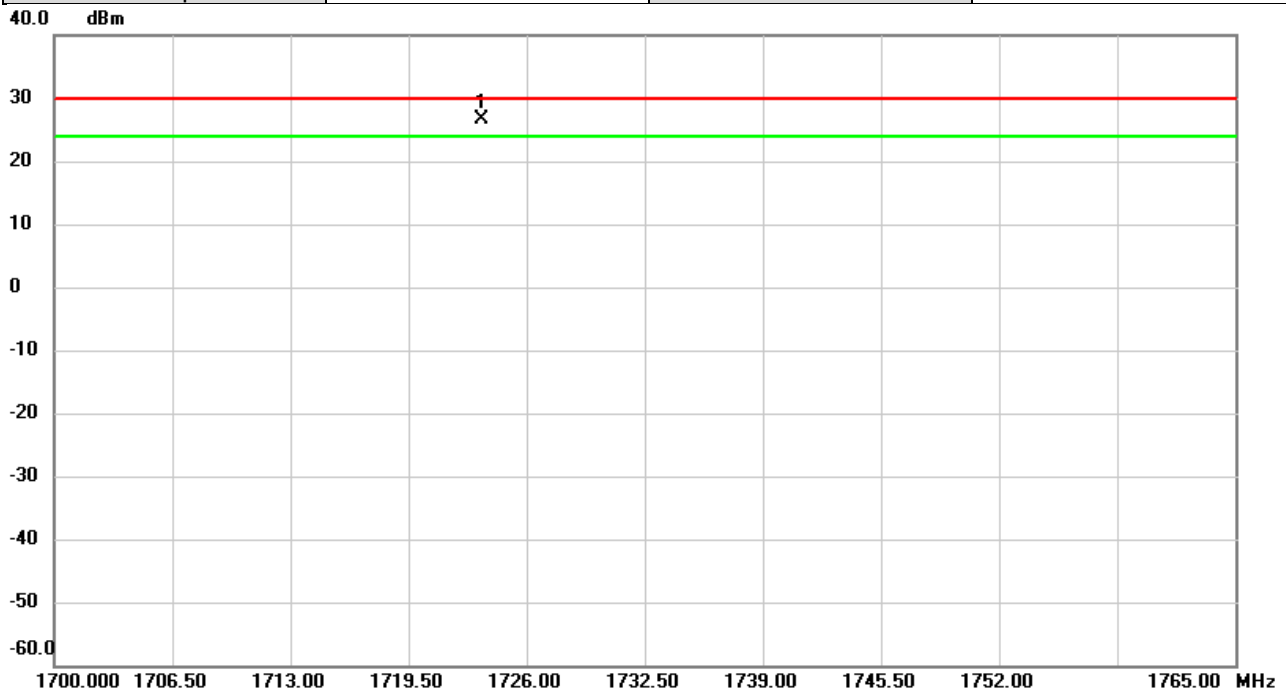


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1723.563 | -14.98        | 39.53          | 24.55       | 30.00 | -5.45 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8   |
| Test Channel | CH 20175   | Polarization | Horizontal |
| Temp         | 24°C       | Hum.         | 58%        |

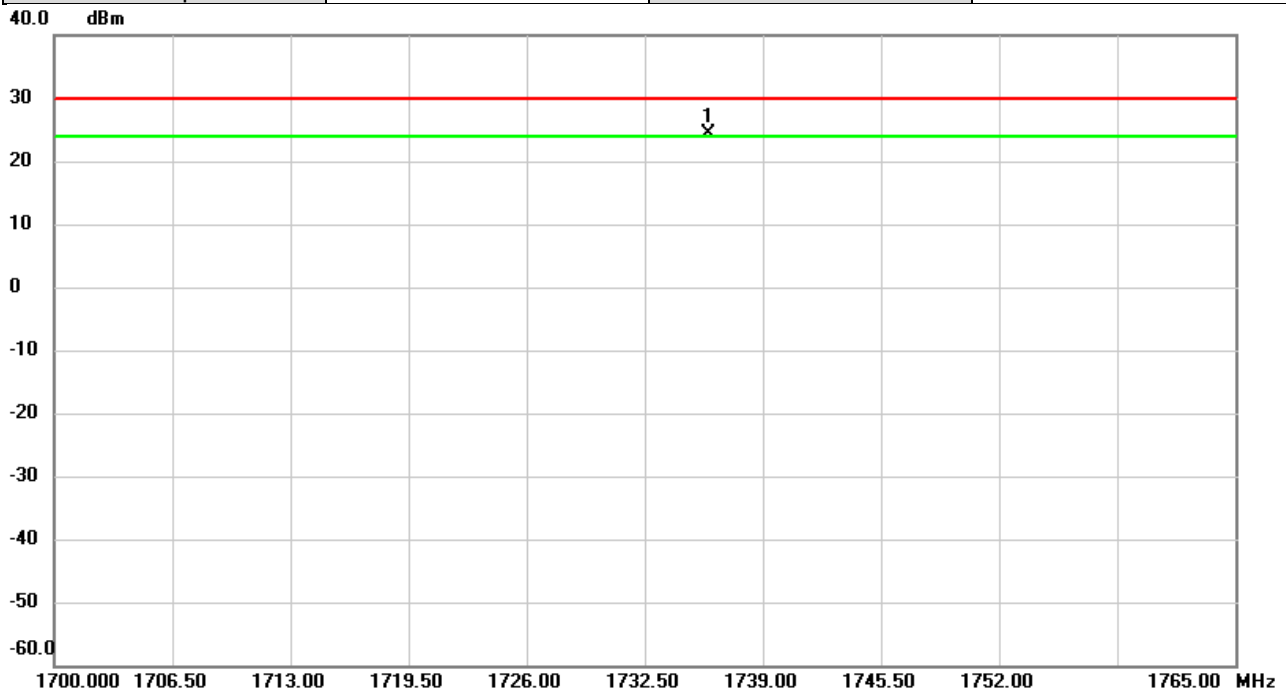


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1723.556 | -13.42        | 40.15          | 26.73       | 30.00 | -3.27 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |          |
|--------------|------------|--------------|----------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8 |
| Test Channel | CH 20300   | Polarization | Vertical |
| Temp         | 24°C       | Hum.         | 58%      |

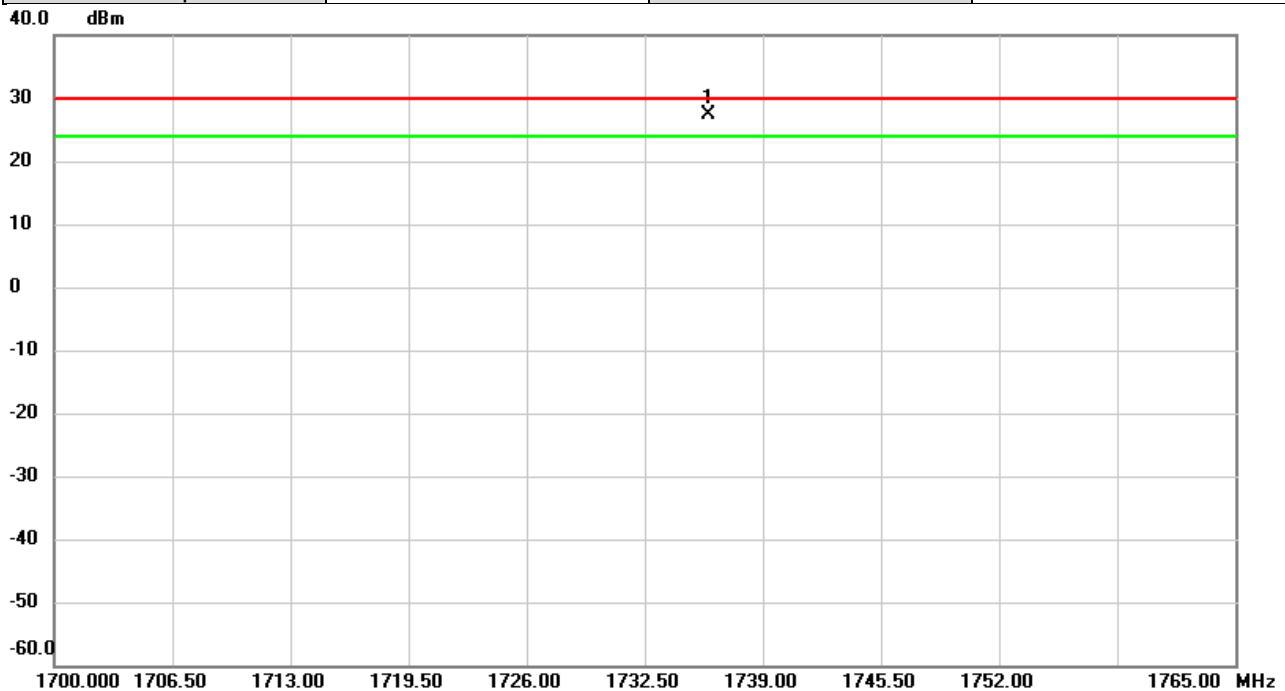


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    | Detector | Comment |
| 1   | *   | 1735.967 | -15.13        | 39.58          | 24.45       | 30.00 | -5.55 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |            |              |            |
|--------------|------------|--------------|------------|
| Test Mode    | LTE Band 4 | Test Date    | 2021/5/8   |
| Test Channel | CH 20300   | Polarization | Horizontal |
| Temp         | 24°C       | Hum.         | 58%        |



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over  | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|-------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB    |          |         |
| 1   | *   | 1736.043 | -12.85        | 40.20          | 27.35       | 30.00 | -2.65 | peak     |         |

## REMARKS:

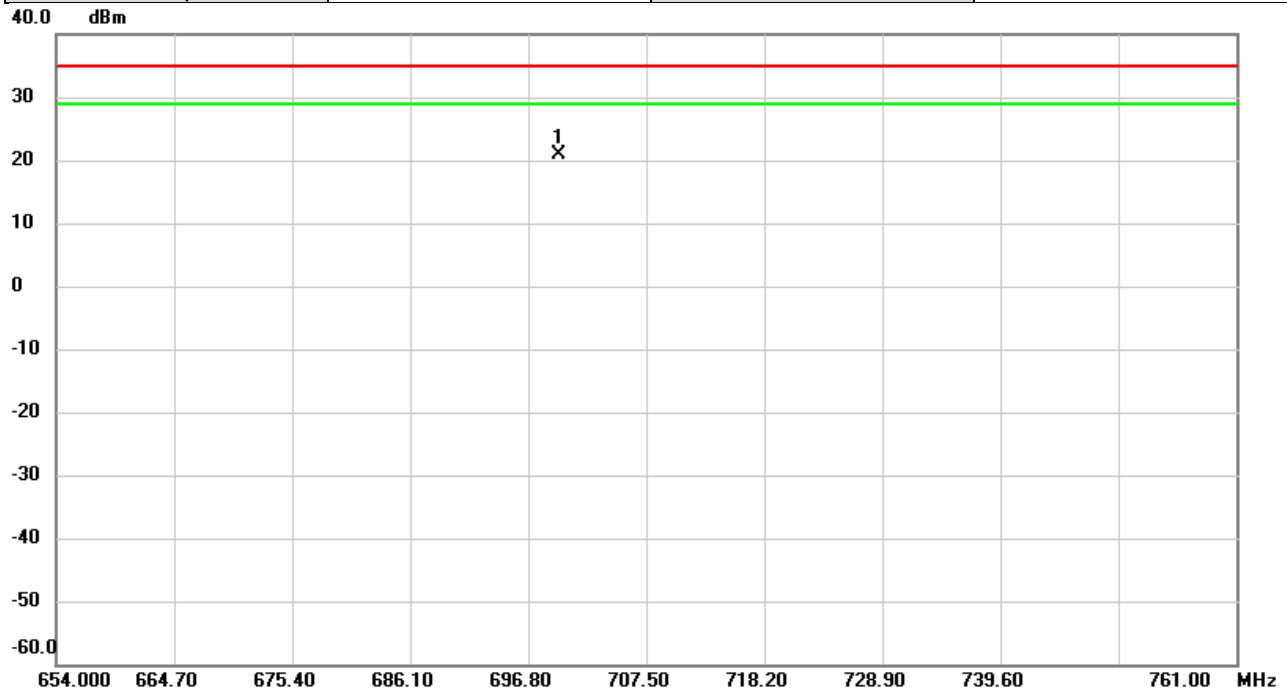
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



## ERP (Radiated):

For External antenna:

|              |             |              |           |
|--------------|-------------|--------------|-----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30 |
| Test Channel | CH23060     | Polarization | Vertical  |
| Temp         | 23°C        | Hum.         | 58%       |

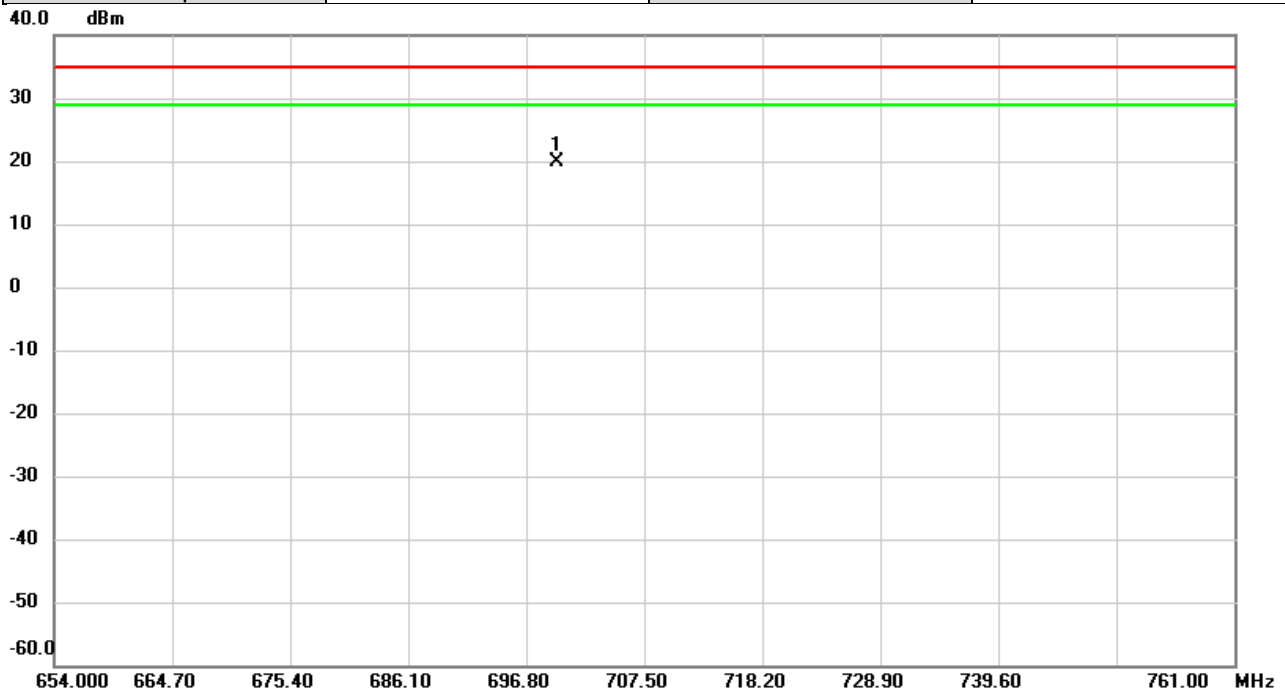


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 699.6141 | -11.68        | 32.55          | 20.87       | 34.77 | -13.90 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30  |
| Test Channel | CH23060     | Polarization | Horizontal |
| Temp         | 23°C        | Hum.         | 58%        |

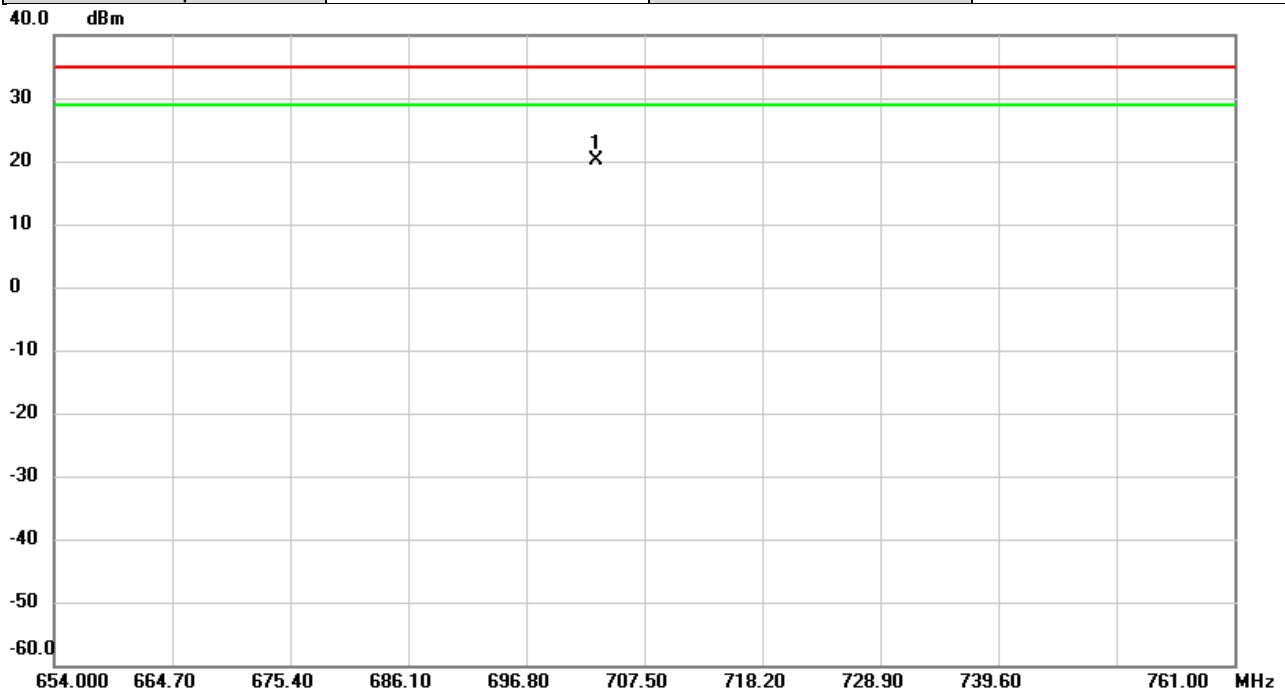


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     |          |         |
| 1   | *   | 699.5463 | -10.14        | 30.10          | 19.96       | 34.77 | -14.81 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |           |
|--------------|-------------|--------------|-----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30 |
| Test Channel | CH23095     | Polarization | Vertical  |
| Temp         | 23°C        | Hum.         | 58%       |

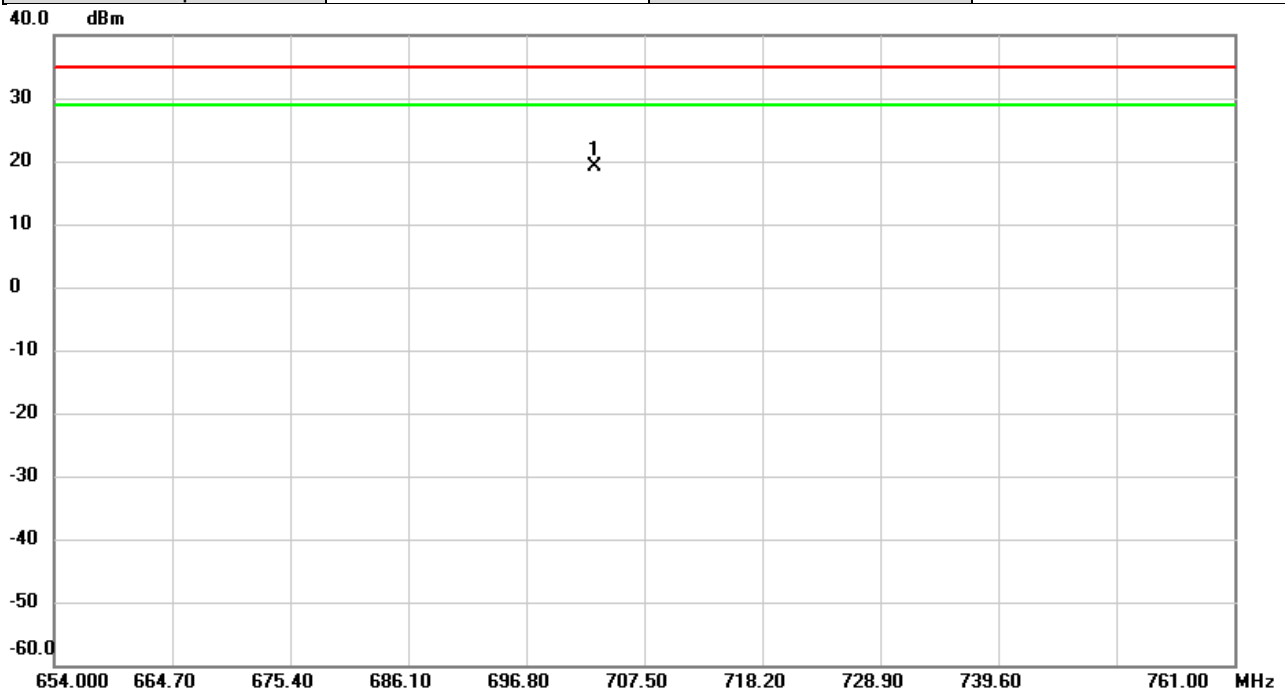


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     |          |         |
| 1   | *   | 703.1522 | -12.53        | 32.61          | 20.08       | 34.77 | -14.69 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30  |
| Test Channel | CH23095     | Polarization | Horizontal |
| Temp         | 23°C        | Hum.         | 58%        |

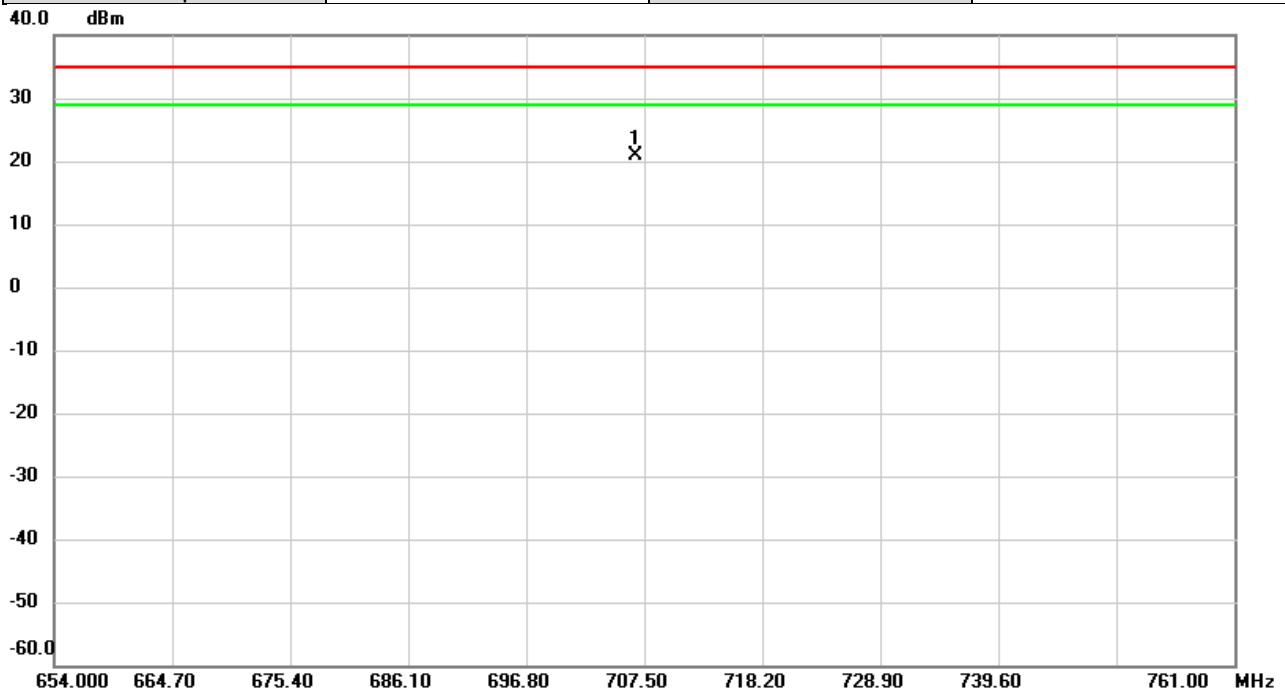


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 703.0417 | -10.98        | 30.22          | 19.24       | 34.77 | -15.53 | peak     |         |

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.  
(2) Margin Level = Measurement Value - Limit Value.

|              |             |              |           |
|--------------|-------------|--------------|-----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30 |
| Test Channel | CH23130     | Polarization | Vertical  |
| Temp         | 23°C        | Hum.         | 58%       |

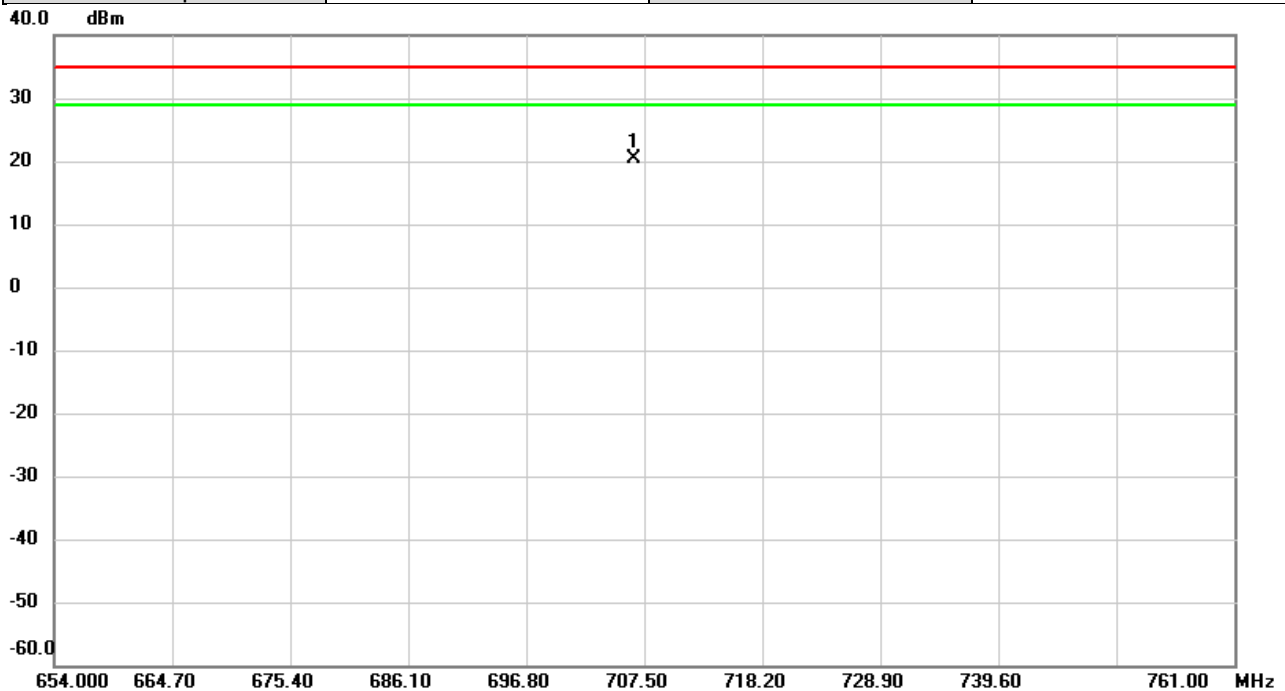


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     |          |         |
| 1   | *   | 706.6476 | -11.74        | 32.69          | 20.95       | 34.77 | -13.82 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/8/30  |
| Test Channel | CH23130     | Polarization | Horizontal |
| Temp         | 23°C        | Hum.         | 58%        |



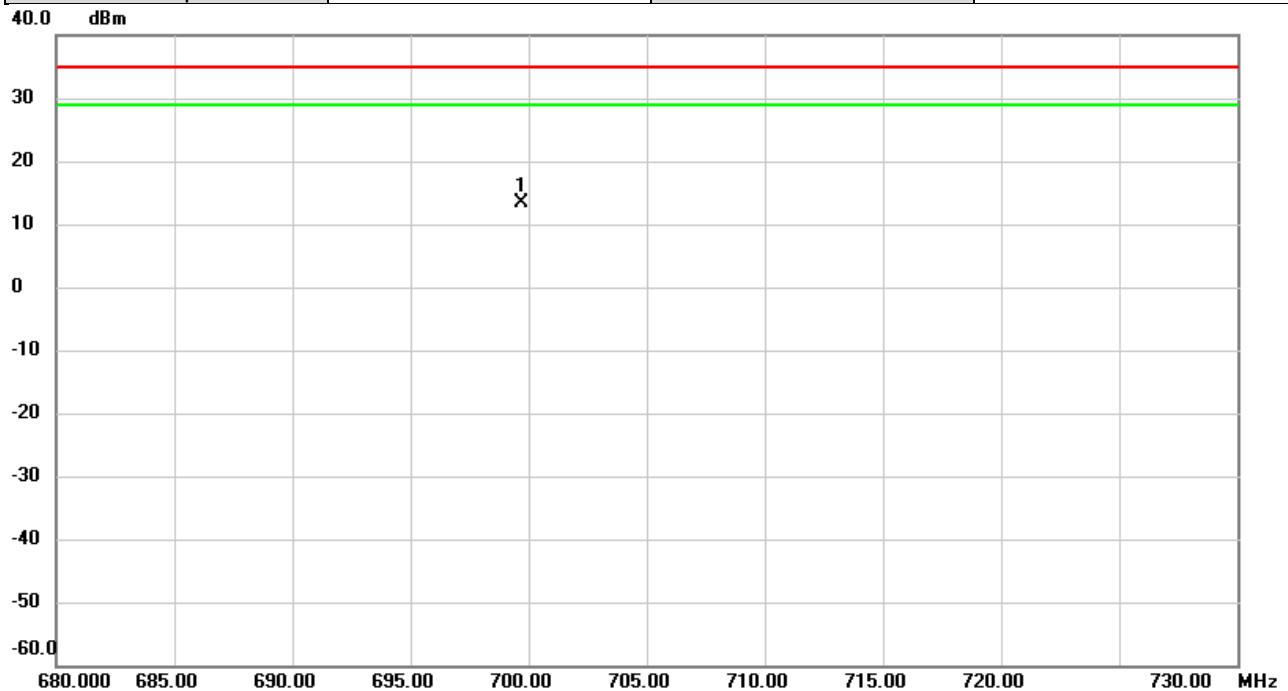
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 706.6370 | -9.95         | 30.36          | 20.41       | 34.77 | -14.36 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

For Built-in antenna:

|              |             |              |          |
|--------------|-------------|--------------|----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8 |
| Test Channel | CH 23060    | Polarization | Vertical |
| Temp         | 24°C        | Hum.         | 58%      |

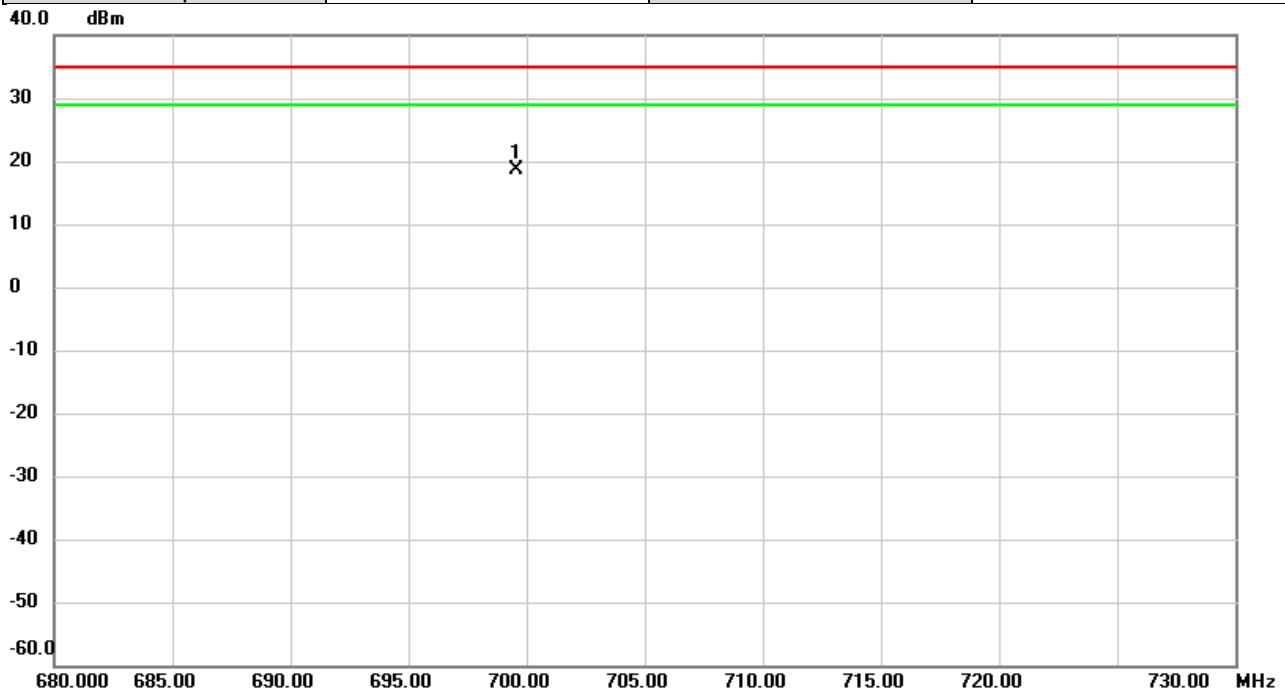


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     |          |         |
| 1   | *   | 699.6717 | -19.54        | 32.96          | 13.42       | 34.77 | -21.35 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8   |
| Test Channel | CH 23060    | Polarization | Horizontal |
| Temp         | 24°C        | Hum.         | 58%        |



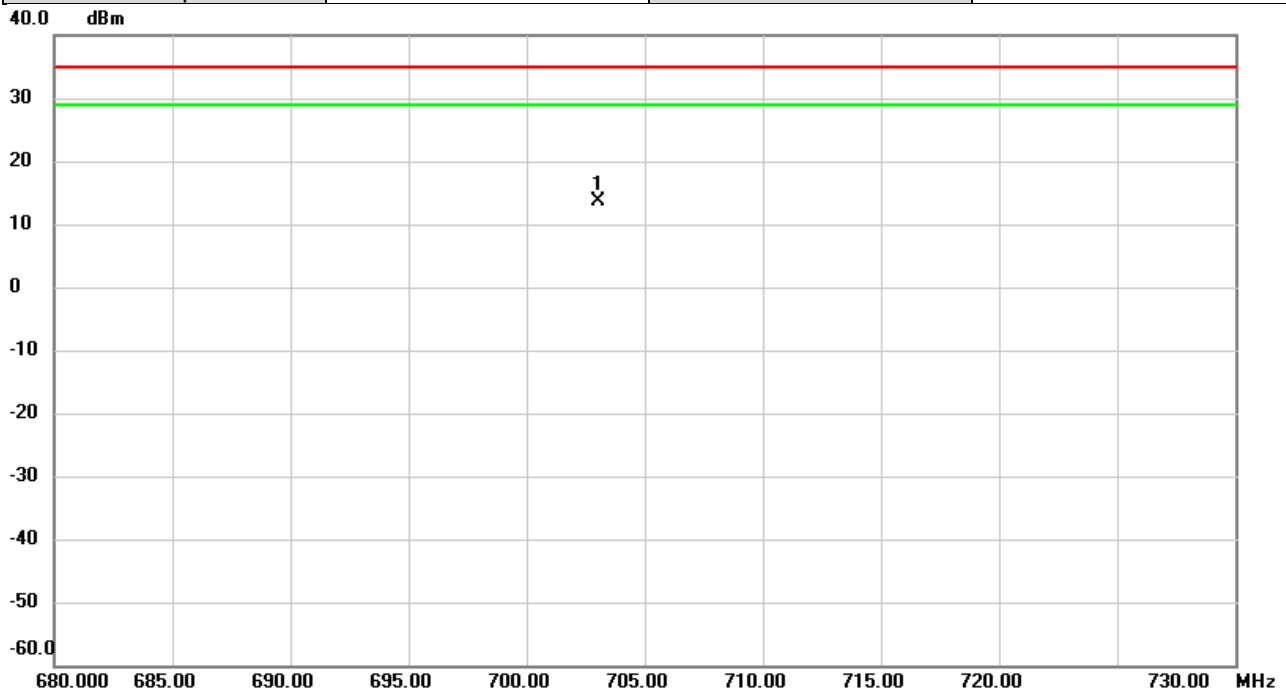
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 699.5915 | -11.77        | 30.44          | 18.67       | 34.77 | -16.10 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



|              |             |              |          |
|--------------|-------------|--------------|----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8 |
| Test Channel | CH 23095    | Polarization | Vertical |
| Temp         | 24°C        | Hum.         | 58%      |

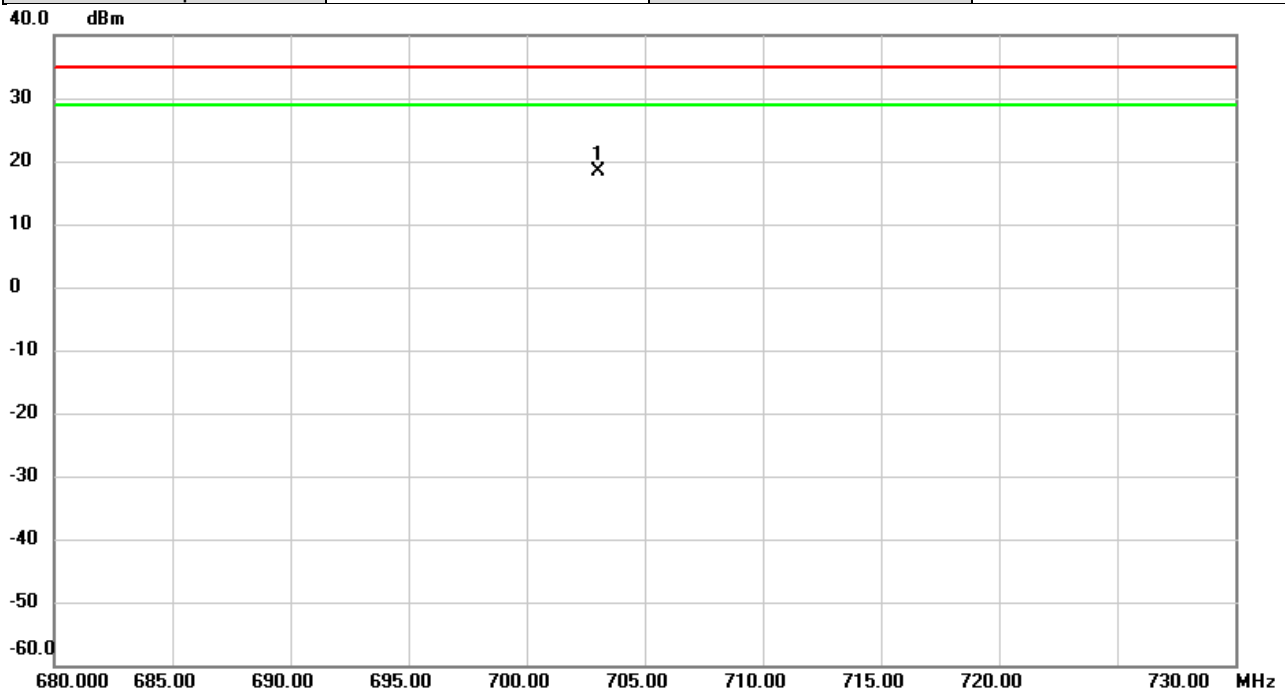


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 703.0517 | -19.45        | 32.99          | 13.54       | 34.77 | -21.23 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8   |
| Test Channel | CH 23095    | Polarization | Horizontal |
| Temp         | 24°C        | Hum.         | 58%        |

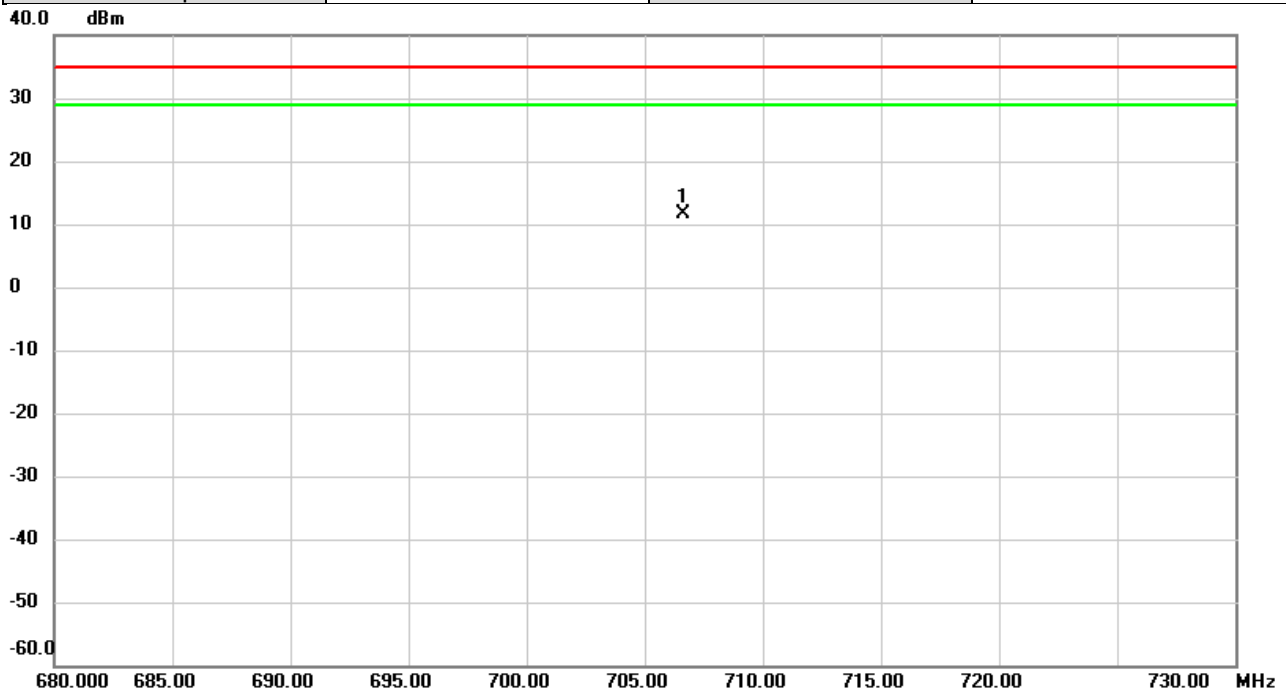


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 703.0183 | -12.22        | 30.54          | 18.32       | 34.77 | -16.45 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |          |
|--------------|-------------|--------------|----------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8 |
| Test Channel | CH 23130    | Polarization | Vertical |
| Temp         | 24°C        | Hum.         | 58%      |

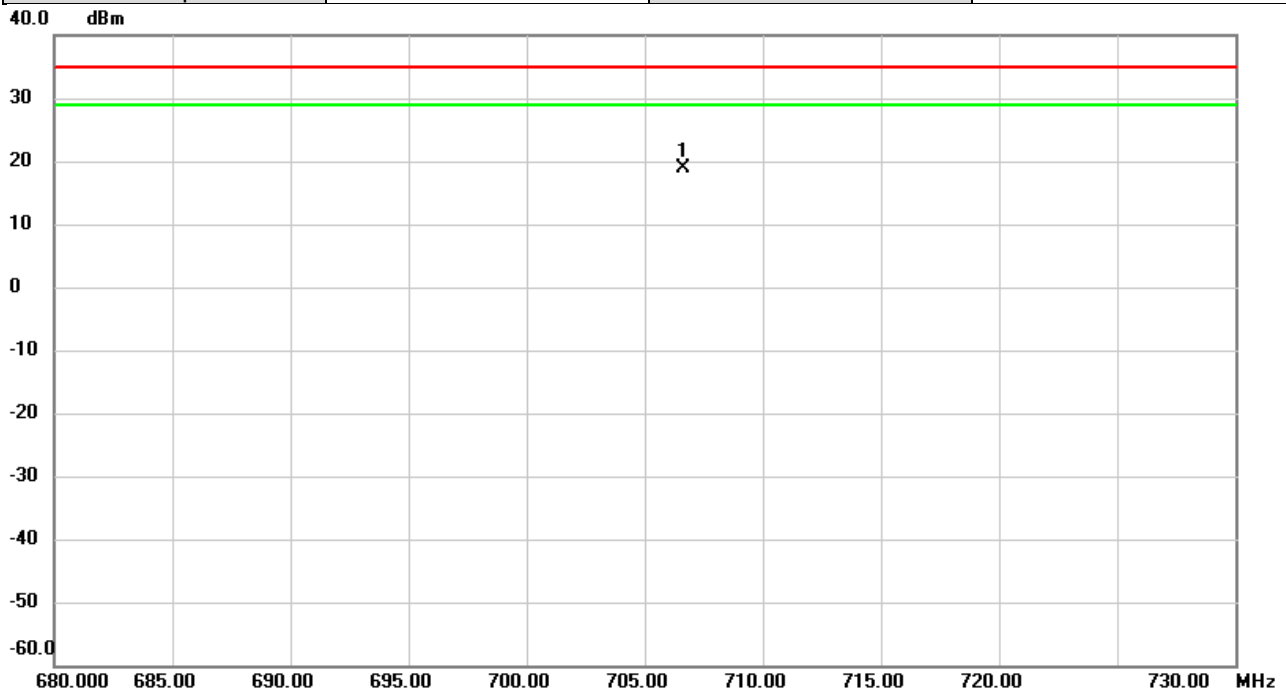


| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     | Detector | Comment |
| 1   | *   | 706.6000 | -21.41        | 33.02          | 11.61       | 34.77 | -23.16 | peak     |         |

## REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

|              |             |              |            |
|--------------|-------------|--------------|------------|
| Test Mode    | LTE Band 12 | Test Date    | 2021/5/8   |
| Test Channel | CH 23130    | Polarization | Horizontal |
| Temp         | 24°C        | Hum.         | 58%        |



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit | Over   | Detector | Comment |
|-----|-----|----------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz      | dBm           | dB             | dBm         | dBm   | dB     |          |         |
| 1   | *   | 706.6216 | -11.67        | 30.67          | 19.00       | 34.77 | -15.77 | peak     |         |

## REMARKS:

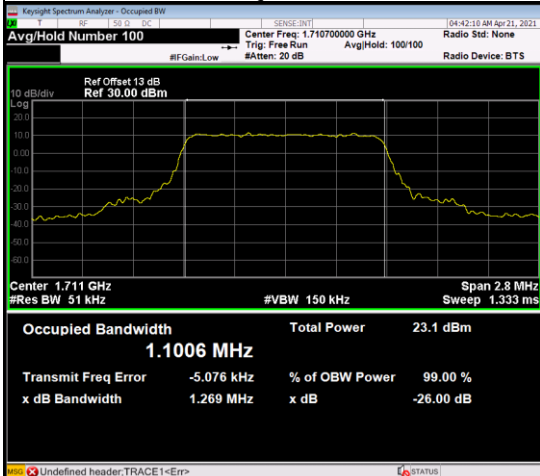
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## **APPENDIX B   OCCUPIED BANDWIDTH**

| LTE Band 4_1.4M |                 |                              |         |                 |                      |
|-----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK            |                 |                              |         |                 |                      |
| Channel         | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19957           | 1710.7          | 1.1006                       | 19957   | 1710.7          | 1.269                |
| 20175           | 1732.5          | 1.1042                       | 20175   | 1732.5          | 1.265                |
| 20393           | 1754.3          | 1.1010                       | 20393   | 1754.3          | 1.288                |
| 16QAM           |                 |                              |         |                 |                      |
| Channel         | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19957           | 1710.7          | 1.1064                       | 19957   | 1710.7          | 1.292                |
| 20175           | 1732.5          | 1.1042                       | 20175   | 1732.5          | 1.279                |
| 20393           | 1754.3          | 1.1075                       | 20393   | 1754.3          | 1.262                |

## Spectrum Plot

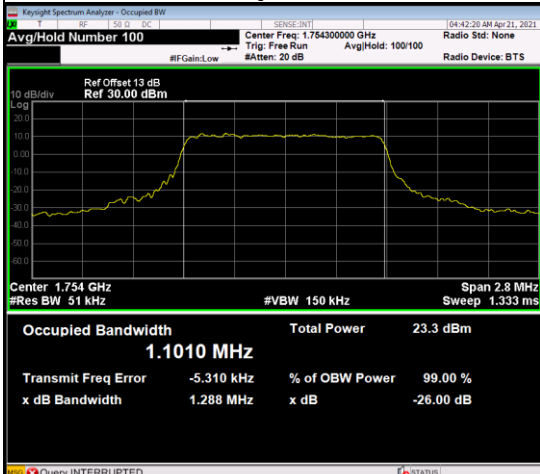
### QPSK-19957



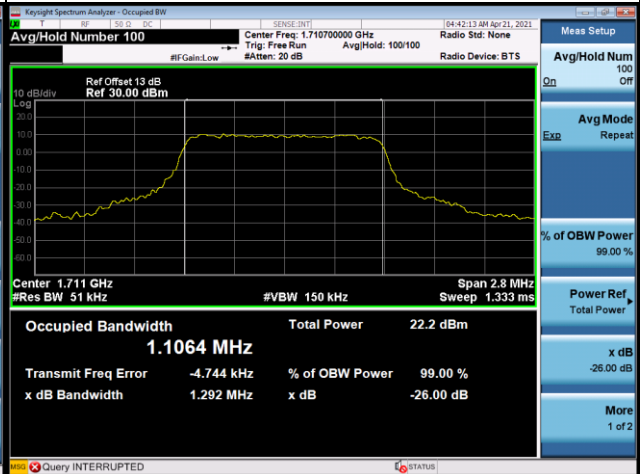
### QPSK-20175



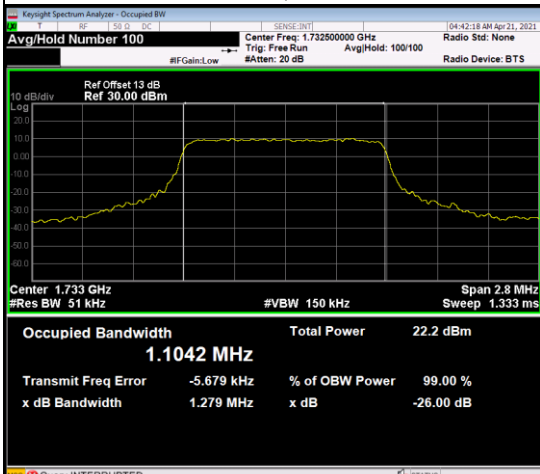
### QPSK-20393



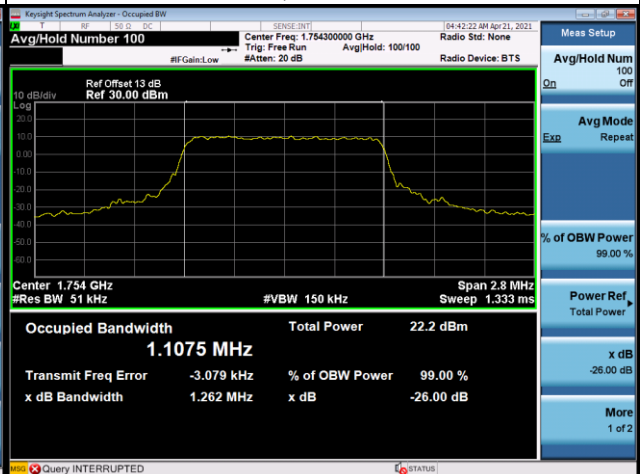
### 16QAM-19957



### 16QAM-20175



### 16QAM-20393

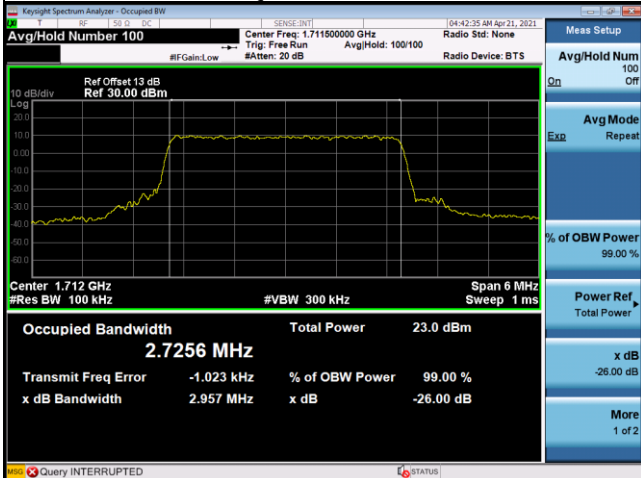


| LTE Band 4_3M |                 |                              |         |                 |                      |
|---------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK          |                 |                              |         |                 |                      |
| Channel       | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19965         | 1711.5          | 2.7256                       | 19965   | 1711.5          | 2.957                |
| 20175         | 1732.5          | 2.7206                       | 20175   | 1732.5          | 2.968                |
| 20385         | 1753.5          | 2.7212                       | 20385   | 1753.5          | 2.961                |
| 16QAM         |                 |                              |         |                 |                      |
| Channel       | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19965         | 1711.5          | 2.7191                       | 19965   | 1711.5          | 2.958                |
| 20175         | 1732.5          | 2.7158                       | 20175   | 1732.5          | 2.964                |
| 20385         | 1753.5          | 2.7215                       | 20385   | 1753.5          | 2.958                |



## Spectrum Plot

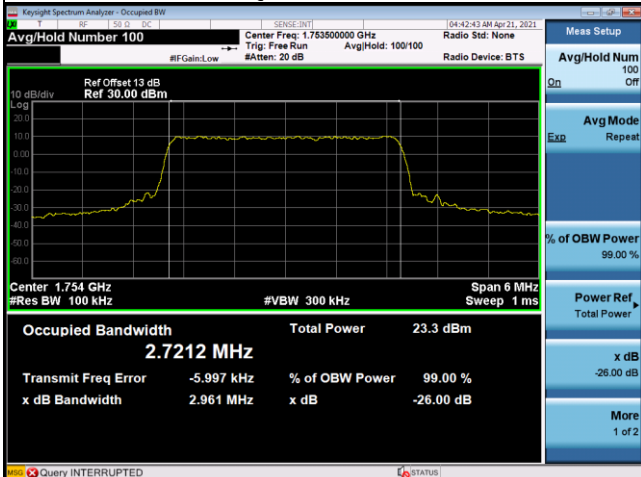
### QPSK-19965



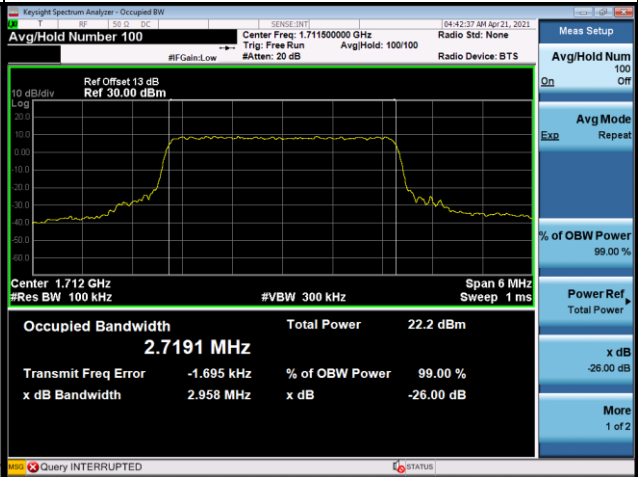
### QPSK-20175



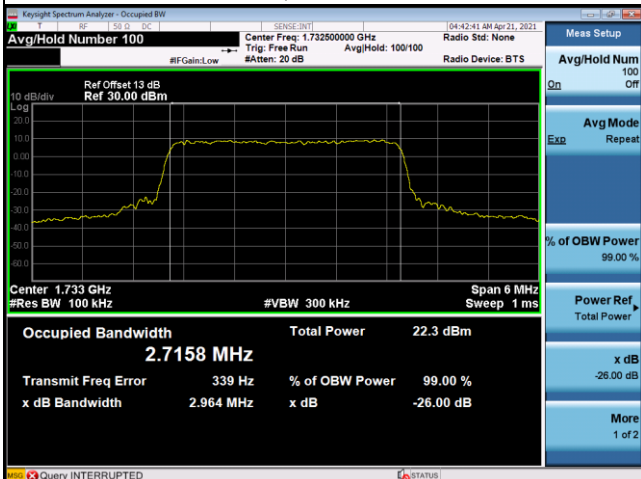
### QPSK-20385



### 16QAM-19965



### 16QAM-20175



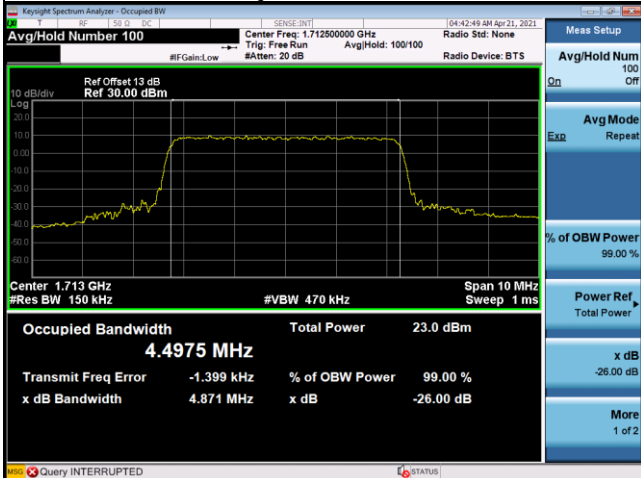
### 16QAM-20385



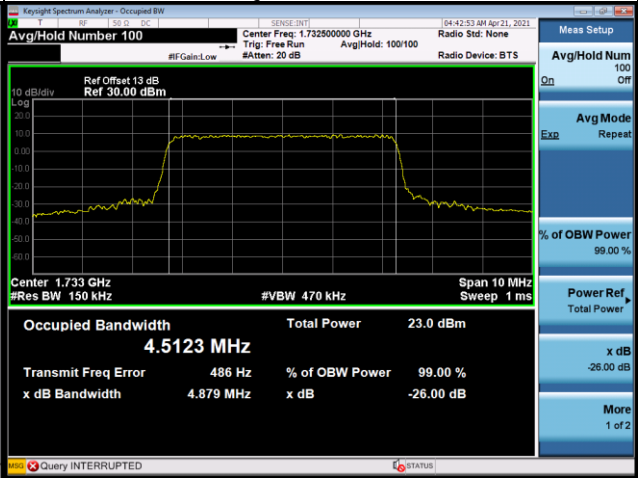
| LTE Band 4_5M |                 |                              |         |                 |                      |
|---------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK          |                 |                              |         |                 |                      |
| Channel       | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19975         | 1712.5          | 4.4975                       | 19975   | 1712.5          | 4.871                |
| 20175         | 1732.5          | 4.5123                       | 20175   | 1732.5          | 4.879                |
| 20375         | 1752.5          | 4.5065                       | 20375   | 1752.5          | 4.887                |
| 16QAM         |                 |                              |         |                 |                      |
| Channel       | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 19975         | 1712.5          | 4.4986                       | 19975   | 1712.5          | 4.847                |
| 20175         | 1732.5          | 4.5042                       | 20175   | 1732.5          | 4.898                |
| 20375         | 1752.5          | 4.5043                       | 20375   | 1752.5          | 4.865                |

## Spectrum Plot

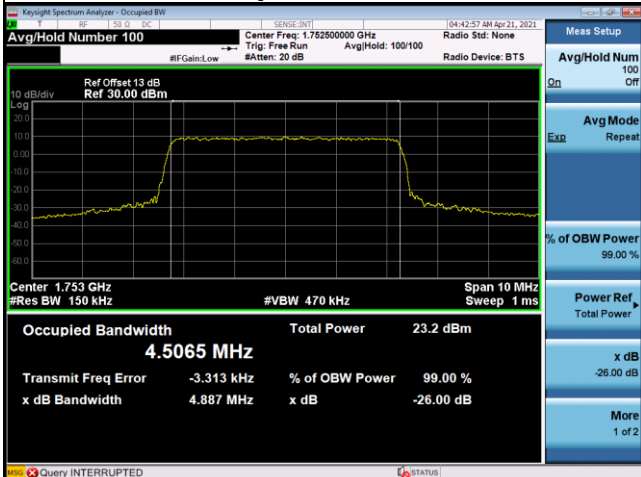
### QPSK-19975



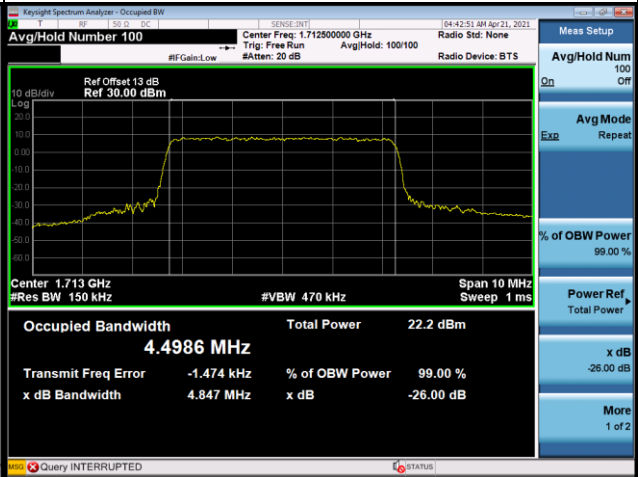
### QPSK-20175



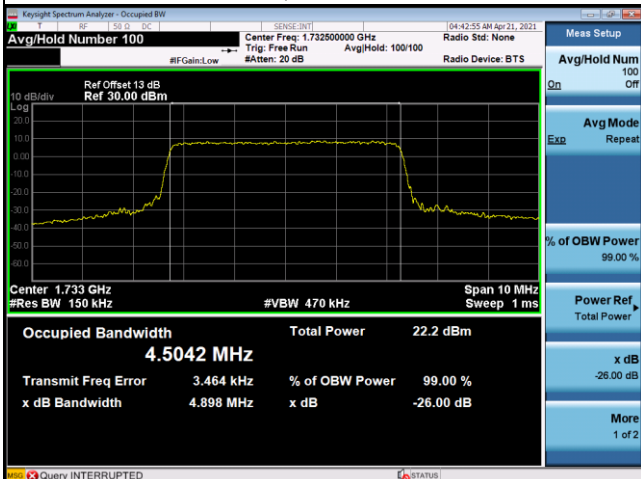
### QPSK-20375



### 16QAM-19975



### 16QAM-20175



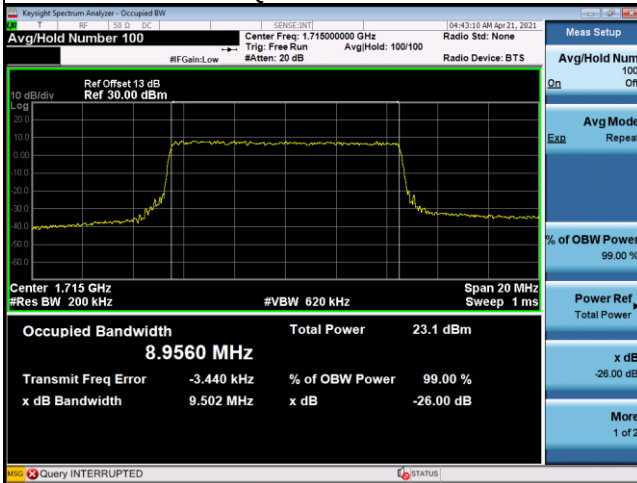
### 16QAM-20375



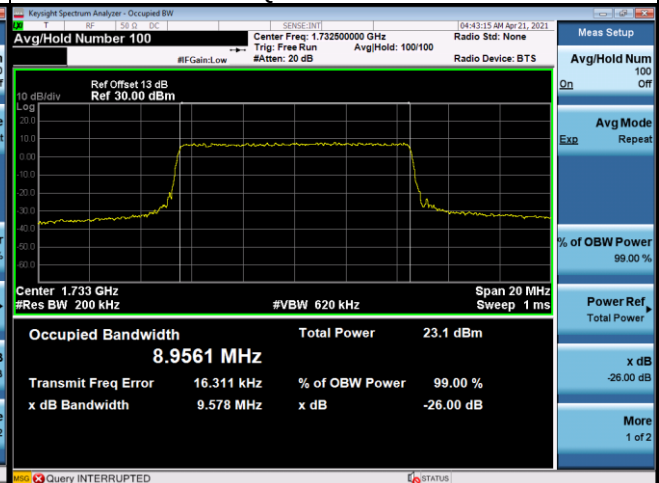
| LTE Band 4_10M |                 |                              |         |                 |                      |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK           |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20000          | 1715            | 8.9560                       | 20000   | 1715            | 9.502                |
| 20175          | 1732.5          | 8.9561                       | 20175   | 1732.5          | 9.578                |
| 20350          | 1750            | 8.9522                       | 20350   | 1750            | 9.588                |
| 16QAM          |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20000          | 1715            | 8.9580                       | 20000   | 1715            | 9.591                |
| 20175          | 1732.5          | 8.9480                       | 20175   | 1732.5          | 9.546                |
| 20350          | 1750            | 8.9712                       | 20350   | 1750            | 9.568                |

## Spectrum Plot

### QPSK-20000



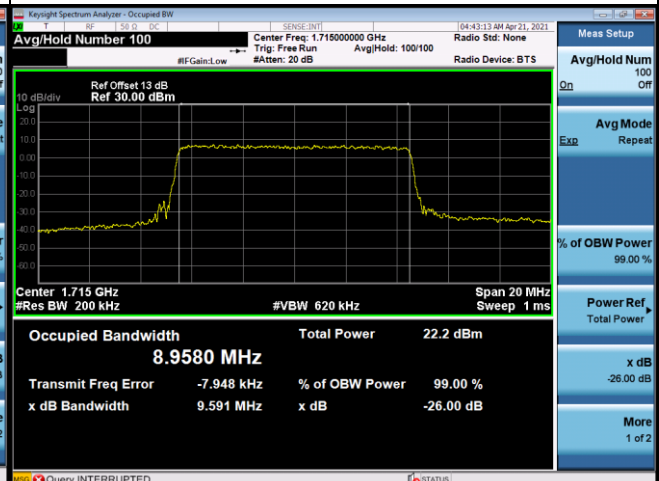
### QPSK-20175



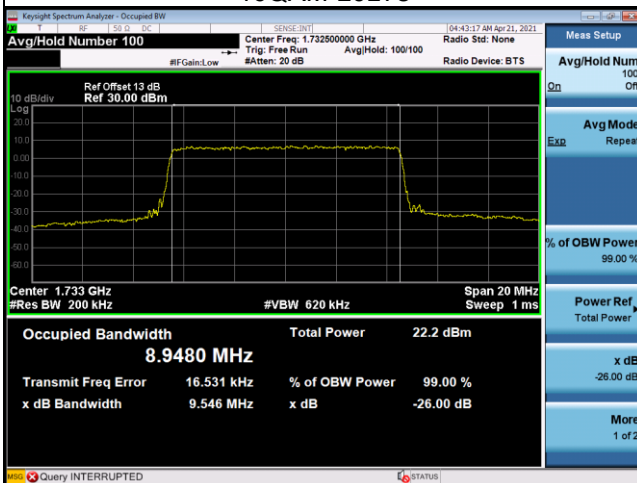
### QPSK-20350



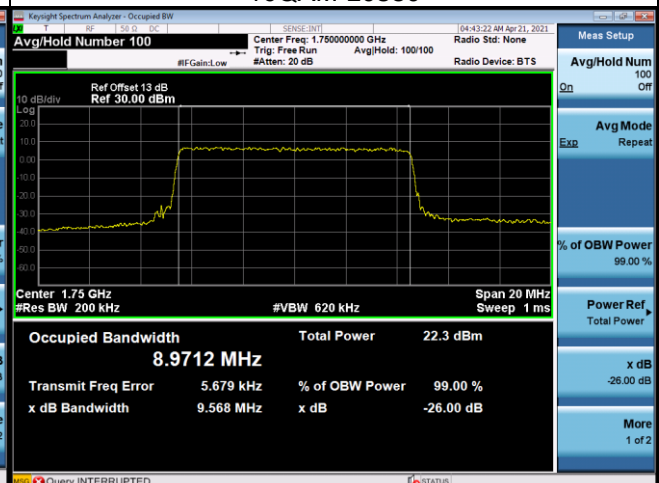
### 16QAM-20000



### 16QAM-20175



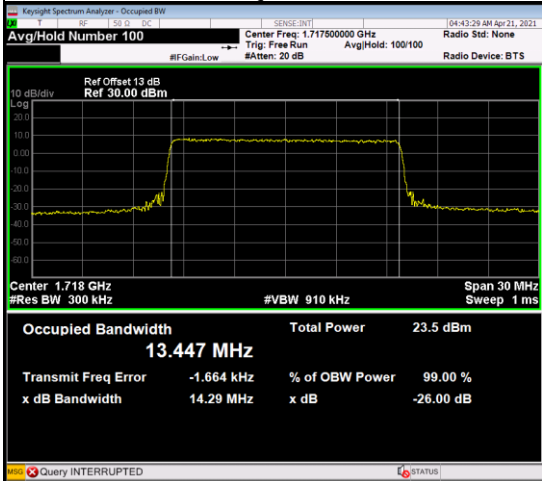
### 16QAM-20350



| LTE Band 4_15M |                 |                              |         |                 |                      |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK           |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20025          | 1717.5          | 13.447                       | 20025   | 1717.5          | 14.29                |
| 20175          | 1732.5          | 13.447                       | 20175   | 1732.5          | 14.24                |
| 20325          | 1747.5          | 13.423                       | 20325   | 1747.5          | 14.27                |
| 16QAM          |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20025          | 1717.5          | 13.398                       | 20025   | 1717.5          | 14.22                |
| 20175          | 1732.5          | 13.444                       | 20175   | 1732.5          | 14.22                |
| 20325          | 1747.5          | 13.421                       | 20325   | 1747.5          | 14.20                |

## Spectrum Plot

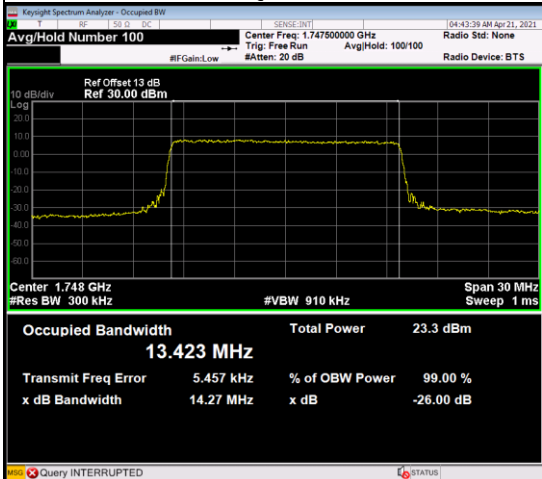
### QPSK-20025



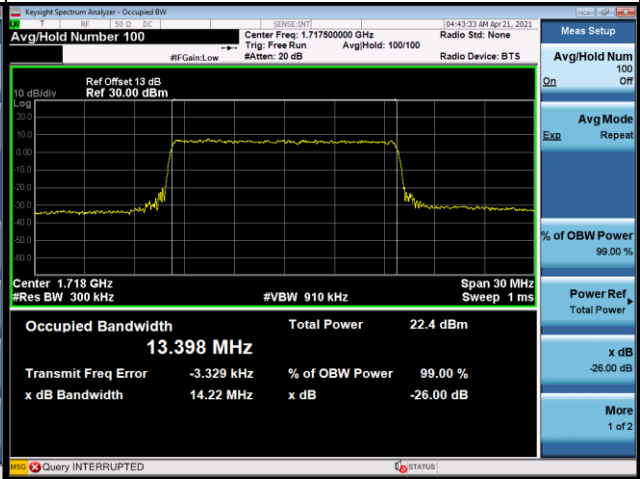
### QPSK-20175



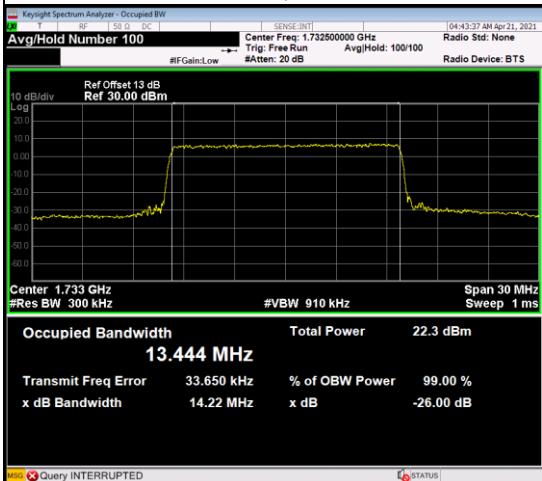
### QPSK-20325



### 16QAM-20025



### 16QAM-20175



### 16QAM-20325



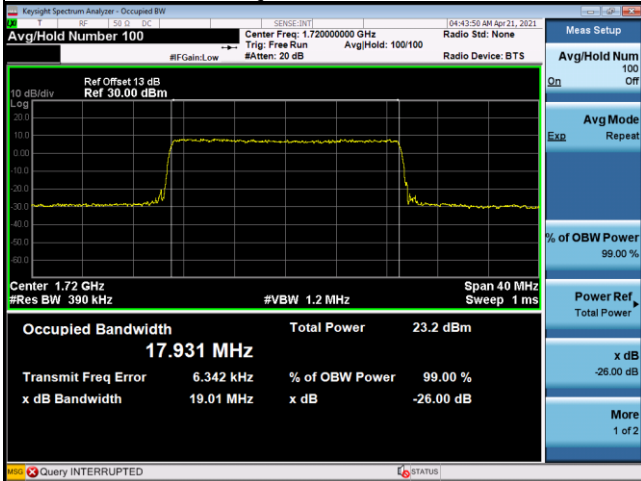


| LTE Band 4_20M |                 |                              |         |                 |                      |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK           |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20050          | 1720            | 17.931                       | 20050   | 1720            | 19.01                |
| 20175          | 1732.5          | 17.938                       | 20175   | 1732.5          | 18.93                |
| 20300          | 1745            | 17.905                       | 20300   | 1745            | 18.90                |
| 16QAM          |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 20050          | 1720            | 17.942                       | 20050   | 1720            | 18.93                |
| 20175          | 1732.5          | 17.929                       | 20175   | 1732.5          | 18.92                |
| 20300          | 1745            | 17.850                       | 20300   | 1745            | 18.91                |

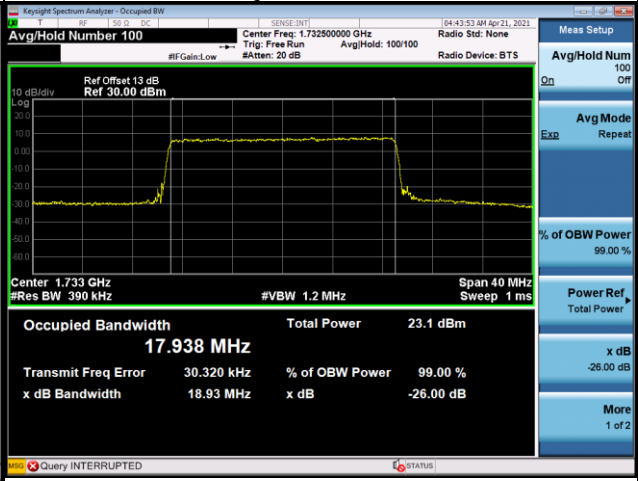


## Spectrum Plot

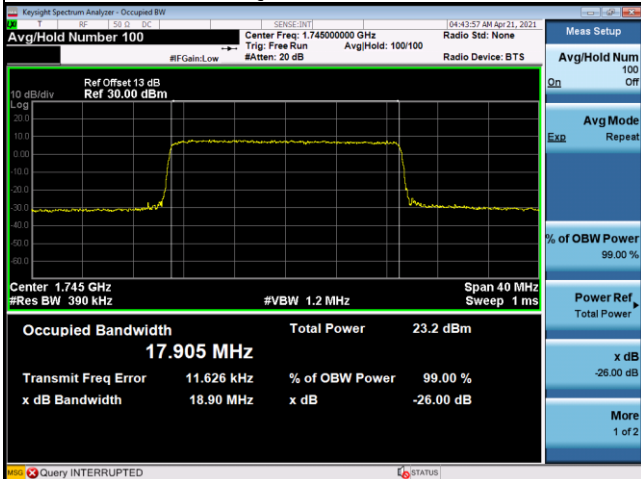
### QPSK-20050



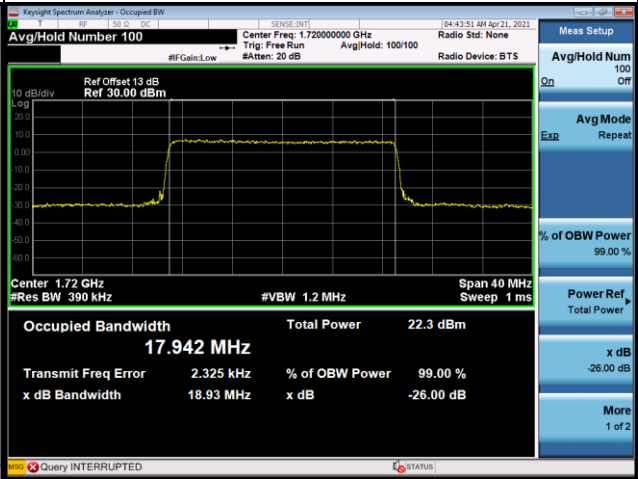
### QPSK-20175



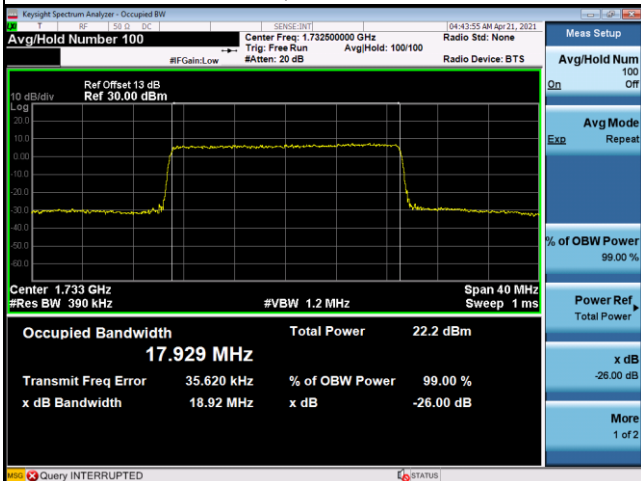
### QPSK-20300



### 16QAM-20050



### 16QAM-20175



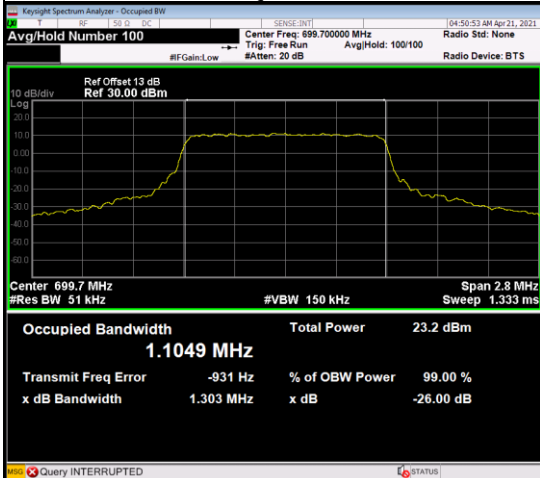
### 16QAM-20300



| LTE Band 12_1.4M |                 |                              |         |                 |                      |
|------------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK             |                 |                              |         |                 |                      |
| Channel          | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 23017            | 699.7           | 1.1049                       | 23017   | 699.7           | 1.303                |
| 23095            | 707.5           | 1.1048                       | 23095   | 707.5           | 1.256                |
| 23173            | 715.3           | 1.0999                       | 23173   | 715.3           | 1.295                |
| 16QAM            |                 |                              |         |                 |                      |
| Channel          | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 23017            | 699.7           | 1.1055                       | 23017   | 699.7           | 1.266                |
| 23095            | 707.5           | 1.1002                       | 23095   | 707.5           | 1.280                |
| 23173            | 715.3           | 1.1022                       | 23173   | 715.3           | 1.297                |

## Spectrum Plot

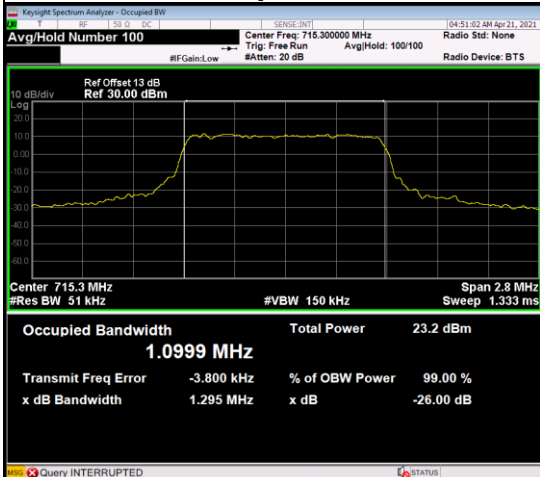
### QPSK-23017



### QPSK-23095



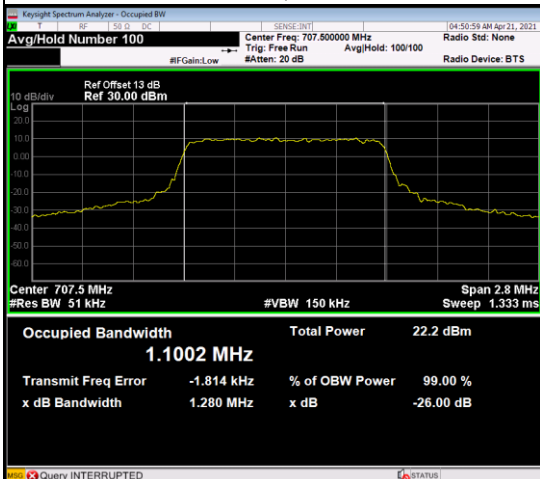
### QPSK-23173



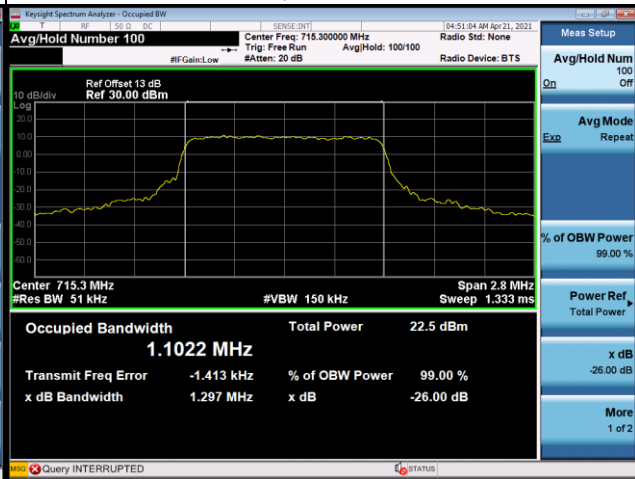
### 16QAM-23017



### 16QAM-23095



### 16QAM-23173



| LTE Band 12_3M |                 |                              |         |                 |                      |
|----------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK           |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 23025          | 700.5           | 2.7206                       | 23025   | 700.5           | 2.962                |
| 23095          | 707.5           | 2.7275                       | 23095   | 707.5           | 2.952                |
| 23165          | 714.5           | 2.7240                       | 23165   | 714.5           | 2.957                |
| 16QAM          |                 |                              |         |                 |                      |
| Channel        | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 23025          | 700.5           | 2.7149                       | 23025   | 700.5           | 2.956                |
| 23095          | 707.5           | 2.7191                       | 23095   | 707.5           | 2.966                |
| 23165          | 714.5           | 2.7223                       | 23165   | 714.5           | 2.959                |