# MEASUREMENT REPORT

## FCC PART 90

| | |
|---|---|
| **FCC ID:** | ZMOFM101NA |
| **Applicant:** | Fibocom Wireless Inc. |
| **Application Type:** | Certification |
| **Product:** | LTE Module |
| **Model No.:** | FM101-NA |
| **Brand Name:** | Fibocom |
| **FCC Rule Part(s):** | Part 90 Subpart R |
| **Test Procedure(s):** | ANSI C63.26: 2015 |
| **Test Date:** | November 05 ~ 18, 2021 |

Reviewed By: Sunny Sun

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

# Revision History

| Report No. | Version | Description | Issue Date | Note |
|---|---|---|---|---|
| 2110RSU053-U3 | Rev. 01 | Initial Report | 12-17-2021 | Invalid |
| 2110RSU053-U3 | Rev. 02 | Corrected the calibration date of equipment | 12-23-2021 | Valid |

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Description Page

# 1. GENERAL INFORMATION

## 1.1. Applicant

Fibocom Wireless Inc.

1101, Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan, Shenzhen, China

## 1.2. Manufacturer

Fibocom Wireless Inc.

1101, Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan, Shenzhen, China

## 1.3. Testing Facility

| | | | | | |
|---|---|---|---|---|---|
| ☒ | **Test Site – MRT Suzhou Laboratory** | | | | |
| | **Laboratory Location (Suzhou - Wuzhong)** | | | | |
| | D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China | | | | |
| | **Laboratory Location (Suzhou - SIP)** | | | | |
| | 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China | | | | |
| | **Laboratory Accreditations** | | | | |
| | A2LA: 3628.01 | | CNAS: L10551 | | |
| | FCC: CN1166 | | ISED: CN0001 | | |
| | VCCI: | ☐R-20025 | ☐G-20034 | ☐C-20020 | ☐T-20020 |
| | | ☐R-20141 | ☐G-20134 | ☐C-20103 | ☐T-20104 |
| ☐ | **Test Site – MRT Shenzhen Laboratory** | | | | |
| | **Laboratory Location (Shenzhen)** | | | | |
| | 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China | | | | |
| | **Laboratory Accreditations** | | | | |
| | A2LA: 3628.02 | | CNAS: L10551 | | |
| | FCC: CN1284 | | ISED: CN0105 | | |
| ☐ | **Test Site – MRT Taiwan Laboratory** | | | | |
| | **Laboratory Location (Taiwan)** | | | | |
| | No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) | | | | |
| | **Laboratory Accreditations** | | | | |
| | TAF: L3261-190725 | | | | |
| | FCC: 291082, TW3261 | | ISED: TW3261 | | |

# 2. PRODUCT INFORMATION

## 2.1. Product Information

| | |
|---|---|
| Product Name | LTE Module |
| Model No. | FM101-NA |
| Brand Name | Fibocom |
| IMEI | Conducted Measurement: 867141050004112<br>Radiated Measurement: 867141050004062 |
| Operating Temperature | -30 ~ 75 °C |
| Power Type | 3.135 ~ 4.4Vdc, typical 3.8Vdc |
| Antenna Information | Refer to Section 2.3 |
| UMTS Specification | |
| Single Band | Band 2, 4, 5 |
| Modulation | Uplink up to 16QAM, Downlink up to 64QAM |
| E-UTRA Specification | |
| Single Band | Band 2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 30, 41, 42, 43, 48, 66, 71 |
| HPUE Band | Band 41 |
| Modulation | Uplink up to 16QAM, Downlink up to 64QAM |

Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

## 2.2. Radio Specification under Test

| | |
|---|---|
| FDD $T_X$ Frequency Range | Band 14: 788 ~ 798 MHz |
| FDD $R_X$ Frequency Range | Band 14: 758 ~ 768 MHz |

Note: For other features of this EUT, test reports will be issued separately.

## 2.3. Description of Available Antennas

| Technology | Frequency Range (MHz) | Antenna Type | Max Peak Gain (dBi) |
|---|---|---|---|
| LTE Band 2 | 1850 ~ 1910 | PIFA | 2.63 |
| LTE Band 4 | 1710 ~ 1755 | | 2.86 |
| LTE Band 5 | 824 ~ 849 | | 1.61 |
| LTE Band 7 | 2500 ~ 2570 | | 1.07 |
| LTE Band 12 | 699 ~ 716 | | 1.61 |
| LTE Band 13 | 777 ~ 787 | | 2.19 |
| LTE Band 14 | 788 ~ 798 | | 2.22 |
| LTE Band 17 | 704 ~ 716 | | 1.61 |
| LTE Band 25 | 1850 ~ 1915 | | 2.63 |
| LTE Band 26 | 814 ~ 849 | | 1.93 |
| LTE Band 30 | 2305 ~ 2315 | | 0.67 |
| LTE Band 41 | 2496 ~ 2690 | | 2.49 |
| LTE Band 42 | 3450 ~ 3550 | | -1.18 |
| LTE Band 42 | 3550 ~ 3600 | | -1.18 |
| LTE Band 43 | 3600 ~ 3700 | | -0.13 |
| LTE Band 43 | 3700 ~ 3800 | | -0.71 |
| LTE Band 48 | 3550 ~ 3700 | | -0.13 |
| LTE Band 66 | 1710 ~ 1780 | | 3.76 |
| LTE Band 71 | 663 ~ 698 | | 1.39 |

## 2.4. Test Methodology

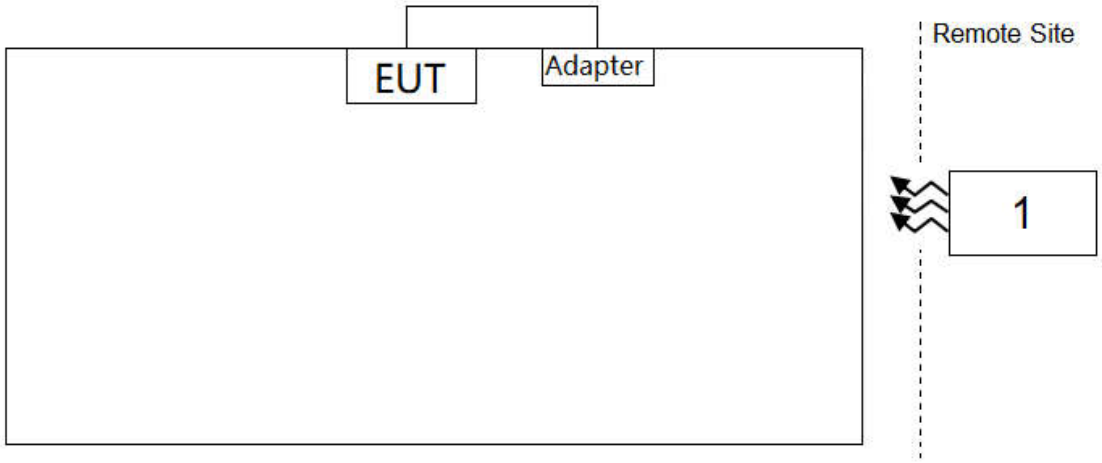
According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26:2015
- FCC CFR 47 Part 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

## 2.5. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

## 2.6. Configuration of Tested System




| Product | | Manufacturer | Model No. |
|---|---|---|---|
| 1 | Wideband Radio Communication Tester | R&S | CMW 500 |

## 2.7. Test Environment Condition

| | |
|---|---|
| Ambient Temperature | 15 ~ 35°C |
| Relative Humidity | 20% ~ 75%RH |

# 3. TEST EQUIPMENT CALIBRATION DATE

| Instrument Name | Manufacturer | Model No. | Asset No. | Cali. Interval | Cal. Due Date | Test Site |
|---|---|---|---|---|---|---|
| Communication Tester | R&S | CMU 200 | MRTSUE06009 | 1 year | 2022/9/7 | SIP-SR1 |
| Communication Tester | R&S | CMW500 | MRTSUE06243 | 1 year | 2022/10/10 | SIP-SR1 |
| Signal Generator | Keysight | E8257D | MRTSUE06453 | 1 year | 2022/6/24 | SIP-SR1 |
| Thermohygrometer | testo | 622 | MRTSUE06629 | 1 year | 2022/11/2 | SIP-SR1 |
| Signal Generator | Keysight | E8257D | MRTSUE06904 | 1 year | 2021/12/8 | SIP-SR1 |
| DC POWER MODULE | Keysight | N6743B | MRTSUE06905 | / | / | SIP-SR1 |
| DC POWER MODULE | Keysight | N6743B | MRTSUE06906 | / | / | SIP-SR1 |
| Low-Profile Modular Power System Mainframe | Keysight | N6700C | MRTSUE06907 | / | / | SIP-SR1 |
| Signal Analyzer | Keysight | N9021B | MRTSUE06915 | 1 year | 2022/1/18 | SIP-SR1 |
| Temperature Chamber | BAOYT | BYG-80CL | MRTSUE06932 | 1 year | 2022/3/16 | SIP-SR1 |
| Shielding Room | MIX-BEP | SIP-SR1 | MRTSUE06948 | / | / | SIP-SR1 |
| EMI Test Receiver | R&S | ESR7 | MRTSUE06001 | 1 year | 2022/1/4 | WZ-AC1 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | MRTSUE06023 | 1 year | 2022/9/16 | WZ-AC1 |
| Preamplifier | Agilent | 83017A | MRTSUE06076 | 1 year | 2021/11/14 | WZ-AC1 |
| Preamplifier | Agilent | 83017A | MRTSUE06076 | 1 year | 2022/11/12 | WZ-AC1 |
| TRILOG Antenna | Schwarzbeck | VULB 9168 | MRTSUE06172 | 1 year | 2022/8/5 | WZ-AC1 |
| Anechoic Chamber | TDK | WZ-AC1 | MRTSUE06212 | 1 year | 2022/4/29 | WZ-AC1 |
| Thermohygrometer | testo | 608-H1 | MRTSUE06403 | 1 year | 2022/6/28 | WZ-AC1 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | MRTSUE06597 | 1 year | 2021/12/14 | WZ-AC1 |
| Signal Analyzer | Keysight | N9010B | MRTSUE06607 | 1 year | 2022/1/6 | WZ-AC1 |
| Preamplifier | EMCI | EMC184045SE | MRTSUE06640 | 1 year | 2022/1/14 | WZ-AC1 |
| Thermohygrometer | Yuhuaze | HTC-2 | MRTSUE06184 | 1 year | 2022/8/10 | WZ-AC1 |

| Software | Version | Function |
|---|---|---|
| EMI Software | V3 | EMI Test Software |

# 4. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

| |
|---|
| Radiated Spurious Emission |
| Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):<br>Horizontal: 9kHz ~ 300MHz: 5.04dB<br>300MHz ~ 1GHz: 4.95dB<br>1GHz ~ 40GHz: 6.40dB<br>Vertical: 9kHz ~ 300MHz: 5.24dB<br>300MHz ~ 1GHz: 6.03dB<br>1GHz ~ 40GHz: 6.40dB |
| Conducted Spurious Emission |
| Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):<br>0.78dB |
| Output Power |
| Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):<br>1.13dB |
| Occupied Bandwidth |
| Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):<br>0.28% |
| Frequency Stability |
| Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):<br>76.2Hz |

# 5. TEST RESULT

## 5.1. Summary

| FCC Part Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|---|---|---|---|---|---|
| 2.1049 | Occupied Bandwidth | N/A | Conducted | Pass | Section 5.2 |
| 2.1055, 90.539(e) | Frequency Stability | <1.25 ppm | | Pass | Section 5.3 |
| 90.542(a)(7) | Equivalent Radiated Power | <30 Watts Max ERP | | Pass | Section 5.4 |
| 2.1051, 90.543(e)(2)(3) | Band Edge | Refer to section 5.5 | | Pass | Section 5.5 |
| 2.1051, 90.210(n) | Emission Mask | Mask B | | Pass | Section 5.6 |
| 2.1051, 90.543(e)(3) | Spurious Emission | < 43 + 10log10 (P[Watts]) | | Pass | Section 5.7 |
| 2.1053, 90.543(e)(3), (f) | Spurious Emission | < 43 + 10log10 (P[Watts]) | Radiated | Pass | Section5.8 |

**Notes:**

1) The analyzer plots shown in this report were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part ofthe system to connect the EUT to the analyzer at all frequencies of interest.
2) Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations the worst-case was found.
3) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, the Frequency Stability, Band Edge, Radiated & Conducted Spurious Emission were presented worst case in the test report.

## 5.2. Occupied Bandwidth Measurement

### 5.2.1.Test Limit

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

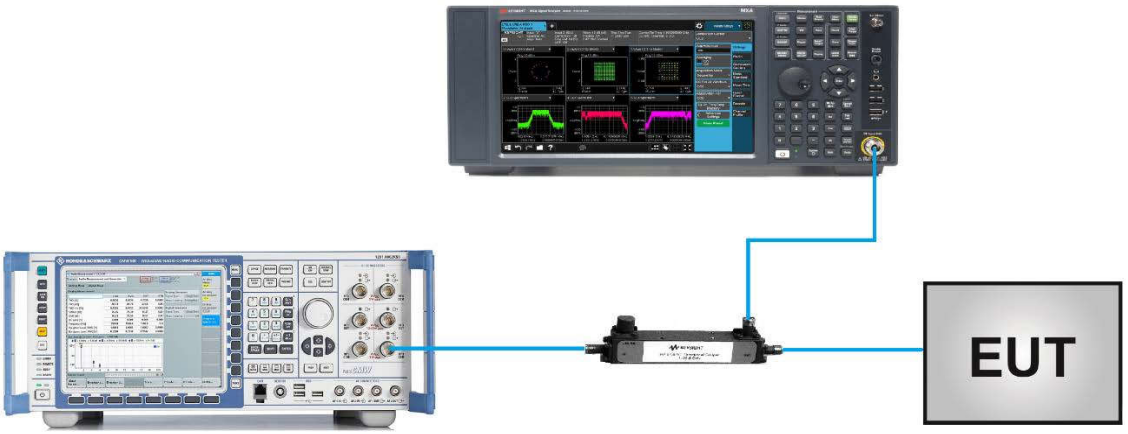
### 5.2.2.Test Procedure

ANSI C63.26-2015 - Section 5.4

### 5.2.3.Test Setting

1. Set center frequency to the nominal EUT channel center frequency
2. RBW = The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW
3. VBW ≥ 3 × RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize
8. Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

### 5.2.4.Test Setup



### 5.2.5.Test Result

| Product | LTE Module | Test Site | SIP-SR1 |
|---|---|---|---|
| Test Engineer | Candy Luo | Test Date | 2021/11/05 |
| Test Band | LTE Band 14 | | |

| Modulation | Frequency (MHz) | Bandwidth (MHz) | 99% Bandwidth (MHz) |
|---|---|---|---|
| QPSK | 793.0 | 5 | 4.48 |
| | | 10 | 8.95 |
| 16QAM | 793.0 | 5 | 4.46 |
| | | 10 | 8.95 |

| 99% Bandwidth - QPSK | |
|---|---|
| 5MHz Channel Bandwidth | 10MHz Channel Bandwidth |
|  |  |
| **99% Bandwidth - 16QAM** | |
| 5MHz Channel Bandwidth | 10MHz Channel Bandwidth |
|  |  |

## 5.3. Frequency Stability Measurement

### 5.3.1.Test Limit

The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

### 5.3.2.Test Procedure

ANSI C63.26-2015 - Section 5.6

### 5.3.3.Test Setting

**Frequency Stability Under Temperature Variations:**

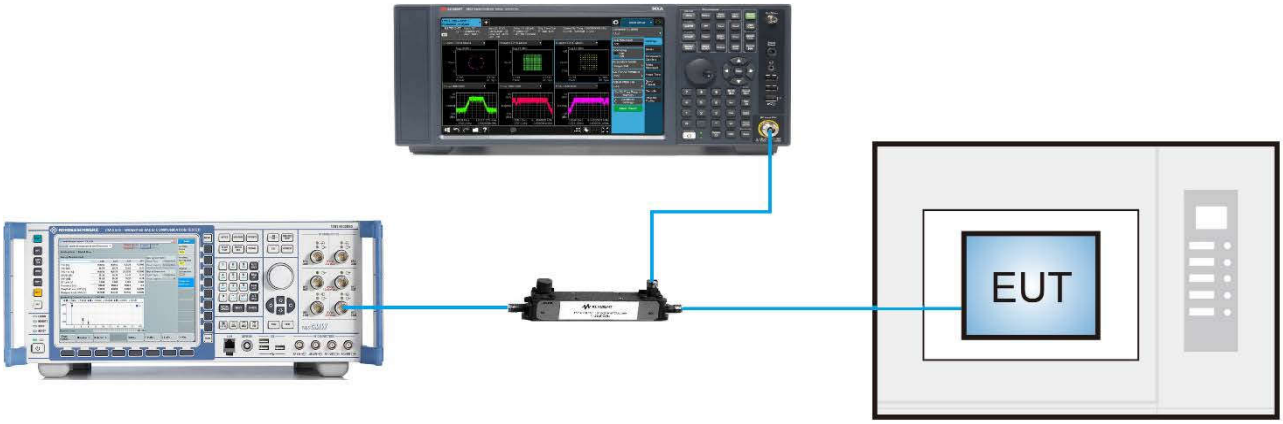
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

**Frequency Stability Under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the inputvoltage to specify extreme voltage variation (±15%) and end point, record the maximum frequency change.

### 5.3.4.Test Setup



### 5.3.5.Test Result

| Product | LTE Module | Test Site | SIP-SR1 |
|---|---|---|---|
| Test Engineer | Candy Luo | Test Date | 2021/11/09 |
| Test Band | LTE Band 14 | | |

| Power (Vdc) | Temp. (°C) | Frequency Tolerance (ppm) |
|---|---|---|
| 3.8 | - 30 | 0.0097 |
| | - 20 | -0.0091 |
| | - 10 | -0.0061 |
| | 0 | -0.0067 |
| | + 10 | -0.0083 |
| | + 20 | -0.0072 |
| | + 30 | -0.0127 |
| | + 40 | -0.0108 |
| | + 50 | -0.0037 |
| 4.4 | + 20 | 0.0074 |
| 3.135 | + 20 | -0.0090 |

## 5.4. Equivalent Isotropically Radiated Power Measurement

### 5.4.1.Test Limit

Control stations and mobile stations transmitting in the 758-768 MHz band and the788-798 MHz band are limited to 30 watts ERP.

### 5.4.2.Test Procedure

ANSI C63.26-2015 - Section 5.2

### 5.4.3.Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

ERP or EIRP = $P_{Meas}$ + $G_T$

where

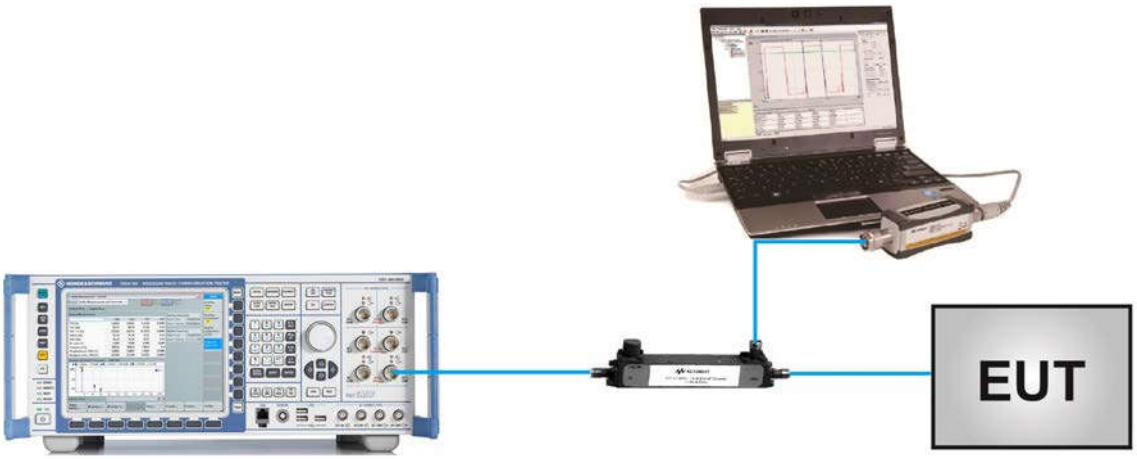
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as $P_{Meas}$, e.g., dBm or dBW)

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

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

ERP = EIRP -2.15

### 5.4.4.Test Setup



### 5.4.5.Test Result

| Product | LTE Module | Test Site | SIP-SR1 |
|---|---|---|---|
| Test Engineer | Candy Luo | Test Date | 2021/11/16 |
| Test Band | LTE Band 14 | | |

| Channel No. | Frequency (MHz) | Channel Bandwidth (MHz) | RB Size | RB Offset | Output Power (dBm) | ERP (dBm) | Limit (dBm) |
|---|---|---|---|---|---|---|---|
| QPSK | | | | | | | |
| 5305 | 760.5 | 5 | 1 | 0 | 22.76 | 22.83 | < 44.77 |
| 5330 | 763.0 | | | | 22.77 | 22.84 | < 44.77 |
| 5355 | 765.5 | | | | 22.77 | 22.84 | < 44.77 |
| 5305 | 760.5 | 5 | 1 | 12 | 22.83 | 22.90 | < 44.77 |
| 5330 | 763.0 | | | | 22.92 | 22.99 | < 44.77 |
| 5355 | 765.5 | | | | 22.66 | 22.73 | < 44.77 |
| 5305 | 760.5 | 5 | 1 | 24 | 22.73 | 22.80 | < 44.77 |
| 5330 | 763.0 | | | | 22.82 | 22.89 | < 44.77 |
| 5355 | 765.5 | | | | 22.57 | 22.64 | < 44.77 |
| 5305 | 760.5 | 5 | 25 | 0 | 22.75 | 22.82 | < 44.77 |
| 5330 | 763.0 | | | | 22.81 | 22.88 | < 44.77 |
| 5355 | 765.5 | | | | 22.58 | 22.65 | < 44.77 |
| 5330 | 763.0 | 10 | 1 | 0 | 22.76 | 22.83 | < 44.77 |
| 5330 | 763.0 | | | 24 | 22.78 | 22.85 | < 44.77 |
| 5330 | 763.0 | | | 49 | 22.67 | 22.74 | < 44.77 |
| 5330 | 763.0 | 10 | 50 | 0 | 21.72 | 21.79 | < 44.77 |
| Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15 | | | | | | | |

| Channel No. | Frequency (MHz) | Channel Bandwidth (MHz) | RB Size | RB Offset | Output Power (dBm) | ERP (dBm) | Limit (dBm) |
|---|---|---|---|---|---|---|---|
| 16QAM | | | | | | | |
| 5305 | 760.5 | 5 | 1 | 0 | 22.00 | 22.07 | < 44.77 |
| 5330 | 763.0 | | | | 21.20 | 21.27 | < 44.77 |
| 5355 | 765.5 | | | | 21.82 | 21.89 | < 44.77 |
| 5305 | 760.5 | 5 | 1 | 12 | 21.62 | 21.69 | < 44.77 |
| 5330 | 763.0 | | | | 22.20 | 22.27 | < 44.77 |
| 5355 | 765.5 | | | | 21.82 | 21.89 | < 44.77 |
| 5305 | 760.5 | 5 | 1 | 24 | 21.44 | 21.51 | < 44.77 |
| 5330 | 763.0 | | | | 22.08 | 22.15 | < 44.77 |
| 5355 | 765.5 | | | | 21.71 | 21.78 | < 44.77 |
| 5305 | 760.5 | 5 | 25 | 0 | 21.45 | 21.52 | < 44.77 |
| 5330 | 763.0 | | | | 22.08 | 22.15 | < 44.77 |
| 5355 | 765.5 | | | | 21.72 | 21.79 | < 44.77 |
| 5330 | 763.0 | 10 | 1 | 0 | 21.85 | 21.92 | < 44.77 |
| 5330 | 763.0 | | | 24 | 21.92 | 21.99 | < 44.77 |
| 5330 | 763.0 | | | 49 | 21.80 | 21.87 | < 44.77 |
| 5330 | 763.0 | 10 | 50 | 0 | 20.78 | 20.85 | < 44.77 |
| Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15 | | | | | | | |

## 5.5. Band Edge Measurement

### 5.5.1.Test Limit

For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the 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, in accordance with the following:

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(2) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, byat least 43 + 10 log (P) dB.

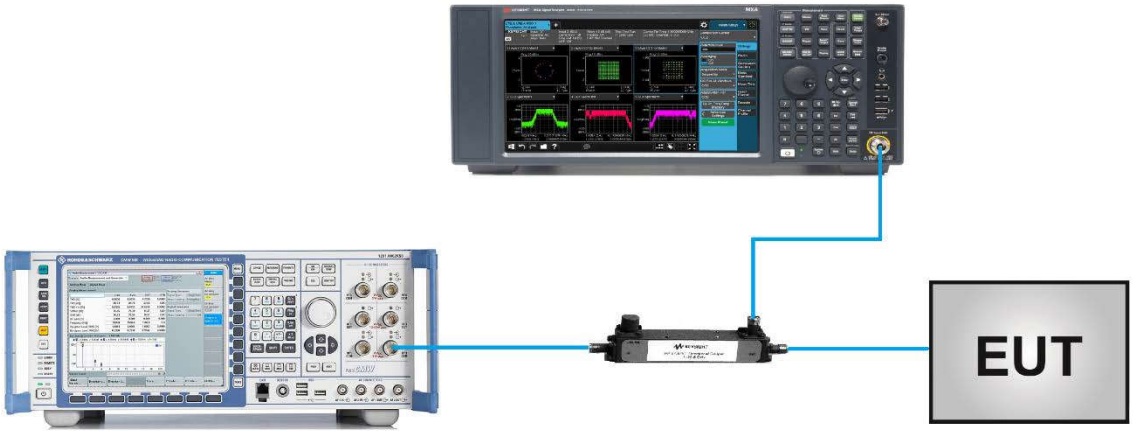
### 5.5.2.Test Procedure

ANSI C63.26-2015 - Section5.7

### 5.5.3.Test Setting

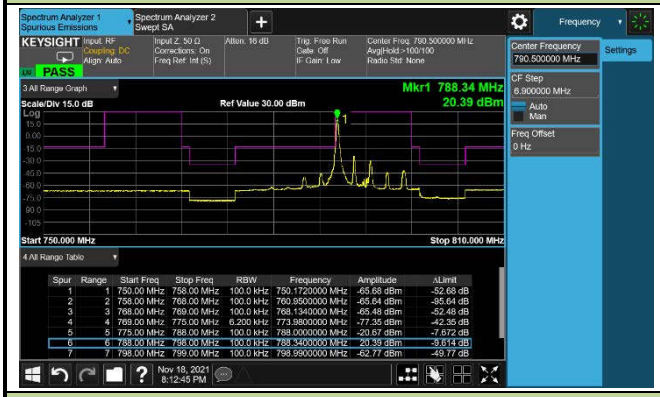
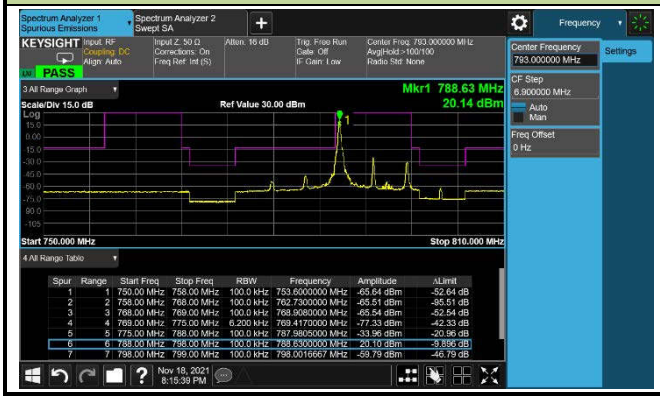
1. Set the analyzer frequency to low or high channel
2. RBW ≥ The nominal RBW shall be in the range of 1% of the anticipated OBW (in the 1MHz band immediately outside and adjacent to the band edge). For improvement of the accuracy in the measurement of the average power of a noise-like emission, a RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the OBW), provided that a subsequent integration is performed over the full required measurement bandwidth. This integration should be performed using the spectrum analyzer’s band power functions.
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to “free run.”
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

### 5.5.4.Test Setup



### 5.5.5.Test Result

| Product | LTE Module | Test Site | SIP-SR1 |
|---|---|---|---|
| Test Engineer | Candy Luo | Test Date | 2021/11/18 |
| Test Band | LTE Band 14_QPSK | | |

| 5MHz Channel Bandwidth 1RB | |
|---|---|
| Lower ACP | Upper ACP |
|  |  |
| **10MHz Channel Bandwidth 1RB** | |
| Lower ACP | Upper ACP |
|  |  |

| 5MHz Channel Bandwidth Full RB | |
|---|---|
| Lower ACP | Upper ACP |
|  |  |
| 10MHz Channel Bandwidth Full RB | |
| Middle ACP | |
|  | |

## 5.6. Emisson Mask Measurement

### 5.6.1.Test Limit

Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

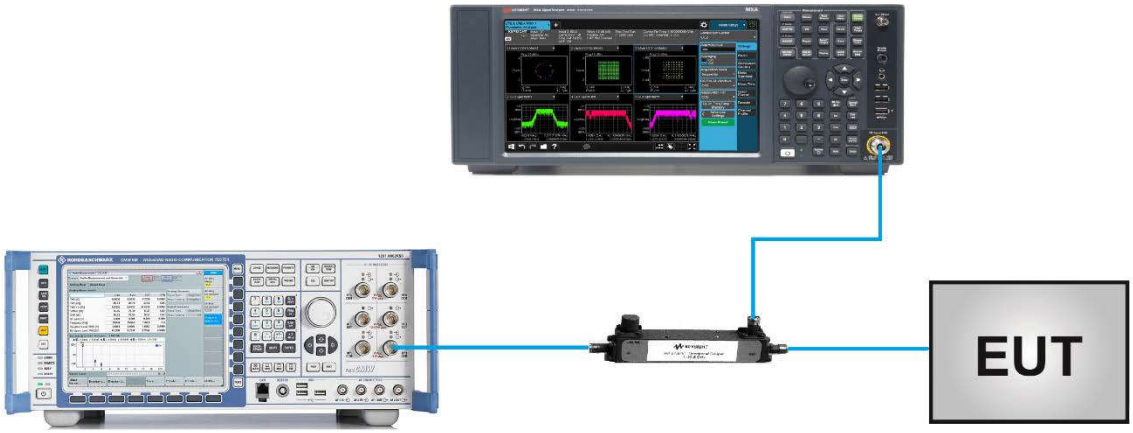
### 5.6.2.Test Procedure

ANSI C63.26-2015 - Section5.7

### 5.6.3.Test Setting

1. Set the analyzer frequency to low or high channel
2. RBW ≥ The nominal RBW shall be in the range of 1% of the anticipated OBW (in the 1MHz band immediately outside and adjacent to the band edge). For improvement of the accuracy in the measurement of the average power of a noise-like emission, a RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the OBW), provided that a subsequent integration is performed over the full required measurement bandwidth. This integration should be performed using the spectrum analyzer's band power functions.
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to "free run."
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

### 5.6.4.Test Setup



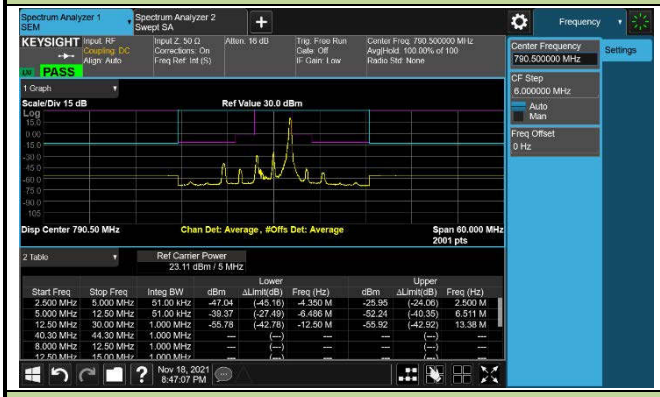
### 5.6.5.Test Result

| Product | LTE Module | Test Site | SIP-SR1 |
|---|---|---|---|
| Test Engineer | Candy Luo | Test Date | 2021/11/18 |
| Test Band | LTE Band 14 | | |

| 5MHz Channel Bandwidth 1RB@0 | |
|---|---|
| Low Channel | Middle Channel |
|  |  |
| High Channel | |
|  | |

## 5MHz Channel Bandwidth 1RB@24

### Low Channel



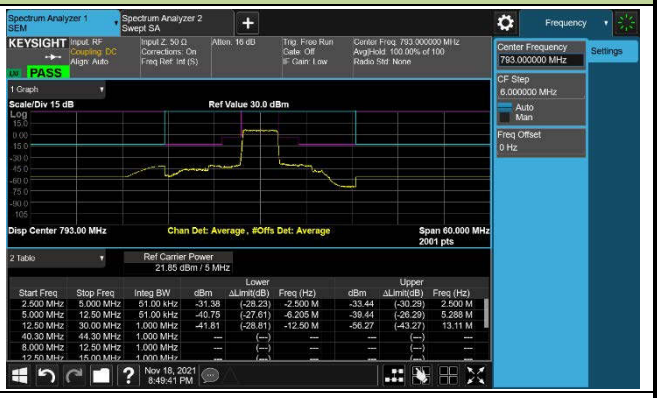

### Middle Channel


### High Channel


## 5MHz Channel Bandwidth Full RB

### Low Channel


### Middle Channel




### High Channel