

# TEST REPORT

**Applicant:** MeiG Smart Technology Co., Ltd  
**Address:** 2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen  
**Equipment Type:** LTE-A module  
**Model Name:** SLM828G  
**Brand Name:** MEIGLink  
**FCC ID:** 2APJ4-SLM828G  
**Test Standard:** 47 CFR Part 2.1091  
KDB 447498 D04 v01  
**Test Date:** Feb. 29, 2024 - Apr. 17, 2024  
**Date of Issue:** Apr. 25, 2024

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu  
(Testing Director)

**Revision History**

| <u>Version</u> | <u>Issue Date</u>    | <u>Revisions Content</u> |
|----------------|----------------------|--------------------------|
| <u>Rev. 01</u> | <u>Apr. 25, 2024</u> | <u>Initial Issue</u>     |

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# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

|              |                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------|
| Name         | Shenzhen BALUN Technology Co., Ltd.                                                                                          |
| Address      | Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Phone Number | +86 755 6685 0100                                                                                                            |

## 1.2 Test Location

|                           |                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                      | Shenzhen BALUN Technology Co., Ltd.                                                                                                                                                                                     |
| Location                  | <input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China                                                        |
|                           | <input type="checkbox"/> 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Accreditation Certificate | The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.                                                                                        |

## PRODUCT INFORMATION

### 1.3 Applicant Information

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| Applicant | MeiG Smart Technology Co., Ltd                                                               |
| Address   | 2nd Floor,Office Building,No.5 Lingxia Road,Fenghuang,Fuyong Street,Bao'an District,Shenzhen |

### 1.4 Manufacturer Information

|              |                                                                                              |
|--------------|----------------------------------------------------------------------------------------------|
| Manufacturer | MeiG Smart Technology Co., Ltd                                                               |
| Address      | 2nd Floor,Office Building,No.5 Lingxia Road,Fenghuang,Fuyong Street,Bao'an District,Shenzhen |

### 1.5 Factory Information

|         |     |
|---------|-----|
| Factory | N/A |
| Address | N/A |

### 1.6 General Description for Equipment under Test (EUT)

|                                           |                      |
|-------------------------------------------|----------------------|
| EUT Name                                  | LTE-A module         |
| Model Name Under Test                     | SLM828G              |
| Series Model Name                         | N/A                  |
| Description of Model name differentiation | N/A                  |
| Hardware Version                          | SLM828-G_MB_V1.00    |
| Software Version                          | SLM828-G_1.0.9_EQ100 |
| Dimensions (Approx.)                      | N/A                  |
| Weight (Approx.)                          | N/A                  |

### 1.7 Technical Information

|                                   |                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network and Wireless connectivity | WCDMA/HSDPA/HSUPA/HSPA+ Band 2/4/5/8<br>4G Network LTE FDD Band 2/4/5/7/8/20/28/32/66<br>LTE TDD Band 38/39/41/40/42/43/48<br>LTE CA Uplink (UL): 38C/39C/40C/41C/42C<br>GPS, GLONASS, BDS, Galileo |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The requirement for the following technical information of the EUT was tested in this report:

|                 |          |                     |                     |
|-----------------|----------|---------------------|---------------------|
| Operating Mode  | WWAN     |                     |                     |
| Frequency Range | WCDMA B2 | TX: 1850 ~ 1910 MHz | RX: 1930 ~ 1990 MHz |
|                 | WCDMA B4 | TX: 1710 ~ 1755 MHz | RX: 2110 ~ 2155 MHz |
|                 | WCDMA B5 | TX: 824 ~ 849 MHz   | RX: 869 ~ 894 MHz   |

|                   |              |                                          |                     |
|-------------------|--------------|------------------------------------------|---------------------|
|                   | LTE B2       | TX: 1850 ~ 1910 MHz                      | RX: 1930 ~ 1990 MHz |
|                   | LTE B4       | TX: 1710 ~ 1755 MHz                      | RX: 2110 ~ 2155 MHz |
|                   | LTE B5       | TX: 824 ~ 849 MHz                        | RX: 869 ~ 894 MHz   |
|                   | LTE B7       | TX: 2500 ~ 2570 MHz                      | RX: 2620 ~ 2690 MHz |
|                   | LTE B66      | TX: 1710 ~ 1780 MHz                      | RX: 2110 ~ 2200 MHz |
|                   | LTE B38      | TX: 2570 ~ 2620 MHz                      | RX: 2570 ~ 2620 MHz |
|                   | LTE B40a     | TX: 2305 ~ 2315 MHz                      | RX: 2305 ~ 2315 MHz |
|                   | LTE B40b     | TX: 2350 ~ 2360 MHz                      | RX: 2350 ~ 2360 MHz |
|                   | LTE B41      | TX: 2496 ~ 2690 MHz                      | RX: 2496 ~ 2690 MHz |
|                   | LTE B42      | TX: 3450 ~ 3550 MHz                      | RX: 3450 ~ 3550 MHz |
|                   | LTE B43      | TX: 3700 ~ 3800 MHz                      | RX: 3700 ~ 3800 MHz |
|                   | LTE B48      | TX: 3550 ~ 3700 MHz                      | RX: 3550 ~ 3700 MHz |
|                   | Antenna Type | External Antenna                         |                     |
| Exposure Category |              | General Population/Uncontrolled Exposure |                     |
| Product Type      |              | Mobile Device                            |                     |

## 2 SUMMARY OF TEST RESULT

### 2.1 Test Standards

| No. | Identity           | Document Title                                               |
|-----|--------------------|--------------------------------------------------------------|
| 1   | 47 CFR Part 2.1091 | Radiofrequency radiation exposure evaluation: mobile devices |
| 2   | KDB 447498 D04 v01 | 447498 D04 Interim General RF Exposure Guidance v01          |

### 3 DEVICE CATEGORY AND LEVELS LIMITS

#### Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

#### FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP<sub>20cm</sub> in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula (B.2).

$$P_{\text{th}} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20 \text{ cm}}$  is per Formula (B.1).  
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) |    |    |    |     |     |     |     |     |     |     |
|-----------------|---------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|
|                 |               | 5  | 10 | 15 | 20  | 25  | 30  | 35  | 40  | 45  | 50  |
| 300             |               | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450             |               | 22 | 44 | 67 | 89  | 112 | 135 | 158 | 180 | 203 | 226 |
| 835             |               | 9  | 25 | 44 | 66  | 90  | 116 | 145 | 175 | 207 | 240 |
| 1900            |               | 3  | 12 | 26 | 44  | 66  | 92  | 122 | 157 | 195 | 236 |
| 2450            |               | 3  | 10 | 22 | 38  | 59  | 83  | 111 | 143 | 179 | 219 |
| 3600            |               | 2  | 8  | 18 | 32  | 49  | 71  | 96  | 125 | 158 | 195 |
| 5800            |               | 1  | 6  | 14 | 25  | 40  | 58  | 80  | 106 | 136 | 169 |

## 4 ASSESSMENT RESULT

### 4.1 Output Power

| WCDMA                 |        |        |        |
|-----------------------|--------|--------|--------|
| Mode                  | Band 2 | Band 4 | Band 5 |
| Conducted Power (dBm) | 26.26  | 25.36  | 25.11  |
| Antenna Gain (dBi)    | -0.80  | -1.40  | -0.80  |
| EIRP (dBm)            | 25.46  | 23.96  | 22.16  |

Note: This report listed the worst case conducted power value, please refer to RF test report for more details.

| LTE                   |          |         |         |         |             |             |             |          |
|-----------------------|----------|---------|---------|---------|-------------|-------------|-------------|----------|
| Mode                  | Band 2   | Band 4  | Band 5  | Band 7  | Band 66     | Band 38     | Band 41     | Band 40a |
| Conducted Power (dBm) | 26.13    | 24.74   | 24.39   | 21.83   | 25.23       | 22.86       | 24.55       | 21.89    |
| Antenna Gain (dBi)    | -0.80    | -1.40   | -0.80   | 1.70    | -1.40       | 1.90        | 2.40        | 0.20     |
| EIRP (dBm)            | 25.33    | 23.34   | 21.44   | 23.53   | 23.83       | 24.76       | 26.95       | 22.09    |
| Mode                  | Band 40b | Band 42 | Band 43 | Band 48 | Band CA_38C | Band CA_41C | Band CA_42C |          |
| Conducted Power (dBm) | 21.56    | 25.20   | 24.63   | 22.74   | 23.41       | 23.60       | 24.30       |          |
| Antenna Gain (dBi)    | 0.20     | 1.50    | 1.20    | 0.20    | 1.90        | 2.40        | 1.50        |          |
| EIRP (dBm)            | 21.76    | 26.70   | 25.83   | 22.94   | 25.31       | 26.00       | 25.80       |          |

Note: This report listed the worst case conducted power value, please refer to RF test report for more details.

### 4.2 Tune-up power

| Mode  |         | Conducted Power Range (dBm) | EIRP Range (dBm) | ERP Range (dBm) |
|-------|---------|-----------------------------|------------------|-----------------|
| WCDMA | Band 2  | 【23.50,26.50】               | 【22.70,25.70】    | 【20.55,23.55】   |
|       | Band 4  | 【23.00,26.00】               | 【21.60,24.60】    | 【19.45,22.45】   |
|       | Band 5  | 【23.00,26.00】               | 【22.20,25.20】    | 【20.05,23.05】   |
| LTE   | Band 2  | 【23.50,26.50】               | 【22.00,25.70】    | 【20.55,23.55】   |
|       | Band 4  | 【22.50,25.50】               | 【21.10,24.10】    | 【18.95,21.95】   |
|       | Band 5  | 【22.50,25.50】               | 【21.70,24.70】    | 【19.55,22.55】   |
|       | Band 7  | 【20.00,23.00】               | 【21.70,24.70】    | 【19.55,22.55】   |
|       | Band 66 | 【23.00,26.00】               | 【21.60,24.60】    | 【19.45,22.45】   |
|       | Band 38 | 【20.50,23.50】               | 【22.40,25.40】    | 【20.25,23.25】   |
|       | Band 40 | 【17.00,22.00】               | 【17.50,22.50】    | 【15.35,20.35】   |
|       | Band 41 | 【22.50,25.50】               | 【24.90,27.90】    | 【22.75,25.75】   |
|       | Band 42 | 【23.00,26.00】               | 【24.50,27.50】    | 【22.35,25.35】   |
|       | Band 43 | 【22.50,25.50】               | 【23.70,26.70】    | 【21.55,24.55】   |
|       | Band 48 | 【20.50,23.50】               | 【20.70,23.70】    | 【18.55,21.55】   |
|       | Band    | 【22.00,25.00】               | 【23.90,26.90】    | 【21.75,24.75】   |

| Mode                                                                                                                          |             | Conducted Power Range (dBm) | EIRP Range (dBm) | ERP Range (dBm) |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|------------------|-----------------|
|                                                                                                                               | CA_38C      |                             |                  |                 |
|                                                                                                                               | Band CA_41C | 【22.00,25.00】               | 【24.40,27.40】    | 【22.25,25.25】   |
|                                                                                                                               | Band CA_42C | 【22.50,25.50】               | 【24.00,27.00】    | 【21.85,24.85】   |
| Note1: ERP= EIRP -2.15dB.                                                                                                     |             |                             |                  |                 |
| Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth. |             |                             |                  |                 |

### 4.3 RF Exposure Evaluation Result

| Evolution mode  | Maximum power (dBm) | Maximum power (mw) | Distance (mm) | Threshold Power (mW) | Verdict |
|-----------------|---------------------|--------------------|---------------|----------------------|---------|
| WCDMA Band 2    | 26.50               | 446.68             | 200           | 3060.00              | Pass    |
| WCDMA Band 4    | 26.00               | 398.11             | 200           | 3060.00              | Pass    |
| WCDMA Band 5    | 26.00               | 398.11             | 200           | 1680.96              | Pass    |
| LTE Band 2      | 26.50               | 446.68             | 200           | 3060.00              | Pass    |
| LTE Band 4      | 25.50               | 354.81             | 200           | 3060.00              | Pass    |
| LTE Band 5      | 25.50               | 354.81             | 200           | 1680.96              | Pass    |
| LTE Band 7      | 23.00               | 199.53             | 200           | 3060.00              | Pass    |
| LTE Band 66     | 26.00               | 398.11             | 200           | 3060.00              | Pass    |
| LTE Band 38     | 26.00               | 398.11             | 200           | 3060.00              | Pass    |
| LTE Band 40     | 22.00               | 177.83             | 200           | 3060.00              | Pass    |
| LTE Band 41     | 23.50               | 223.87             | 200           | 3060.00              | Pass    |
| LTE Band 42     | 25.75               | 375.84             | 200           | 3060.00              | Pass    |
| LTE Band 43     | 26.00               | 398.11             | 200           | 3060.00              | Pass    |
| LTE Band 48     | 25.50               | 354.81             | 200           | 3060.00              | Pass    |
| LTE Band CA_38C | 25.00               | 316.23             | 200           | 3060.00              | Pass    |
| LTE Band CA_41C | 25.25               | 334.97             | 200           | 3060.00              | Pass    |
| LTE Band CA_42C | 25.50               | 354.81             | 200           | 3060.00              | Pass    |

Note:

1. More power list please refer to RF(BL-EC2410592-501) test report.

### 4.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

## Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
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--END OF REPORT--