



# MPE Report

Report No.:STS2510005H01

Issued for

Shanghai AirM2M Communication Technology Co., Ltd.

Room 555A, Building 2, No. 787 Manufacturing Bureau Road,  
Huangpu District, Shanghai, China

Product Name: 4G Module

Brand Name: Luat

Model Name: Air8000

Series Model(s): LuatOS

FCC ID: 2AEGG-AIR8000

Test Standard: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen STS Test Services Co., Ltd.

**TEST REPORT**

**Applicant's Name** .....: Shanghai AirM2M Communication Technology Co., Ltd.  
**Address** .....: Room 555A, Building 2, No. 787 Manufacturing Bureau Road,  
Huangpu District, Shanghai, China  
**Manufacturer's Name** .....: Shanghai AirM2M Communication Technology Co., Ltd.  
**Address** .....: Room 611, 6th Floor, No. 100 Xiuyan Road, Pudong New Area,  
Shanghai

**Product Description**

**Product Name** .....: 4G Module  
**Brand Name** .....: Luat  
**Model Name** .....: Air8000  
**Series Model(s)** .....: LuatOS  
**Test Standards** .....: FCC 47CFR §2.1091  
447498 D01 Interim General RF Exposure Guidance v06

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**Date of Test** .....

**Date of receipt of test item** .....: 09 Oct. 2025  
**Date (s) of performance of tests** .....: 09 Oct. 2025 ~ 18 Nov. 2025  
**Date of Issue** .....: 18 Nov. 2025  
**Test Result** .....: **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Skylar Li)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

| Rev. | Issue Date   | Report No.    | Effect Page | Contents      |
|------|--------------|---------------|-------------|---------------|
| 00   | 18 Nov. 2025 | STS2510005H01 | ALL         | Initial Issue |
|      |              |               |             |               |



## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

|                     |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name        | 4G Module                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Brand Name          | Luat                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Model Name          | Air8000                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Series Model(s)     | LuatOS                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Model Difference    | Only difference in model name. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Product Description | The EUT is 4G Module           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                     | Operation Frequency:           | 2.4G WLAN:<br>802.11b/g/n/ax 20: 2412~2462 MHz<br>802.11n/ax40:2422~2452MHz<br>BLE: 2402~2480 MHz<br>LTE Band 2:1850~1910MHz<br>LTE Band 4:1710~1755MHz<br>LTE Band 5:824~849MHz<br>LTE Band 7:2500~2570MHz<br>LTE Band 12:699~716MHz<br>LTE Band 13:777~787MHz<br>LTE Band 17: 704-716 MHz<br>LTE Band 25:1850~1915MHz<br>LTE Band 26 Part 90:814~824MHz<br>LTE Band 26 Part 22:824-849 MHz<br>LTE Band 38:2570-2620 MHz<br>LTE Band 41:2496-2690 MHz<br>LTE Band 66:1710~1780MHz<br>LTE Band 71: 663-698 MHz |
|                     | Modulation Type:               | 2.4G WLAN:<br>802.11b(DSSS):CCK,DQPSK,DBPSK<br>802.11g(OFDM):BPSK,QPSK,16-QAM, 64-QAM<br>802.11n(OFDM):BPSK,QPSK,16-QAM, 64-QAM<br>802.11ax(OFDM, OFDMA):<br>BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM<br>BLE: GFSK<br>LTE: QPSK /16QAM                                                                                                                                                                                                                                                                         |
|                     | Antenna gain:                  | 2.4G WLAN/BLE:2.63dBi<br>LTE B2:2.21 dBi, LTE B4:2.06 dBi<br>LTE B5:0.71 dBi, LTE B7:2.68 dBi<br>LTE B12:0.59 dBi, LTE B13:0.56 dBi<br>LTE B17:0.61 dBi, LTE B25:2.21 dBi<br>LTE B26:0.71 dBi, LTE B38:2.77 dBi<br>LTE B41:2.79 dBi, LTE B66:2.06 dBi<br>LTE B71:0.59 dBi                                                                                                                                                                                                                                      |
|                     | Antenna Designation:           | Rod-shaped antenna                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Power Rating        | Input: DC 3.8V~4.2V            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



## 1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



## 2. FCC 47CFR §2.1091 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

| Frequency Range (MHz)                                 | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm <sup>2</sup> ) |
|-------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|
| Limits for Occupational / controlled Exposures        |                               |                               |                                     |
| 300 - 1500                                            | --                            | --                            | F/300                               |
| 3.0-30                                                | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              |
| 1500 – 100000                                         | --                            | --                            | 5.0                                 |
| Limits for General population / Uncontrolled Exposure |                               |                               |                                     |
| 300 - 1500                                            | --                            | --                            | F/1500                              |
| 1.34-30                                               | 824/f                         | 2.19/f                        | *(180f <sup>2</sup> )               |
| 1500 – 100000                                         | --                            | --                            | 1.0                                 |

F= Frequency in MHz

Friss Formula

Friss Transmission Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



## 2.3 TEST RESULT

## Tune up

| RF Function | Frequency (MHz) | Separation distance (cm) | Max Output Power (dBm) | Tune Up Power (dBm) | Max Tune Up Power (dBm) | ANT Gain (dBi) | Max EIRP (dBm) | Max EIRP (mW) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Ratio  | Result |
|-------------|-----------------|--------------------------|------------------------|---------------------|-------------------------|----------------|----------------|---------------|-------------------------------------|-----------------------------|--------|--------|
| BLE         | 2480            | 20                       | 2.70                   | 2±1                 | 3.00                    | 2.63           | 5.63           | 3.656         | 0.0007                              | 1                           | 0.0007 | Pass   |
| 2.4G WLAN   | 2462            | 20                       | 17.98                  | 17±1                | 18.00                   | 2.63           | 20.63          | 115.611       | 0.0230                              | 1                           | 0.0230 | Pass   |
| LTE B2      | 1850            | 20                       | 22.05                  | 22±1                | 23.00                   | 2.21           | 25.21          | 331.894       | 0.066                               | 1                           | 0.0660 | Pass   |
| LTE B4      | 1710            | 20                       | 22.31                  | 22±1                | 23.00                   | 2.06           | 25.06          | 320.627       | 0.064                               | 1                           | 0.0638 | Pass   |
| LTE B5      | 824             | 20                       | 23.09                  | 23±1                | 24.00                   | 0.71           | 24.71          | 295.801       | 0.059                               | 0.5493333                   | 0.1071 | Pass   |
| LTE B7      | 2500            | 20                       | 21.33                  | 22±1                | 23.00                   | 2.68           | 25.68          | 369.828       | 0.074                               | 1                           | 0.0736 | Pass   |
| LTE B12     | 699             | 20                       | 22.48                  | 22±1                | 23.00                   | 0.59           | 23.59          | 228.560       | 0.045                               | 0.466                       | 0.0976 | Pass   |
| LTE B13     | 777             | 20                       | 22.38                  | 22±1                | 23.00                   | 0.56           | 23.56          | 226.986       | 0.045                               | 0.518                       | 0.0872 | Pass   |
| LTE B17     | 704             | 20                       | 22.31                  | 22±1                | 23.00                   | 0.61           | 23.61          | 229.615       | 0.046                               | 0.4693333                   | 0.0973 | Pass   |
| LTE B25     | 1850            | 20                       | 21.93                  | 22±1                | 23.00                   | 2.21           | 25.21          | 331.894       | 0.066                               | 1                           | 0.0660 | Pass   |
| LTE B26     | 814             | 20                       | 23.09                  | 23±1                | 24.00                   | 0.71           | 24.71          | 295.801       | 0.059                               | 0.5426667                   | 0.1084 | Pass   |
| LTE B38     | 2570            | 20                       | 23.47                  | 23±1                | 24.00                   | 2.77           | 26.77          | 475.335       | 0.095                               | 1                           | 0.0946 | Pass   |
| LTE B41     | 2496            | 20                       | 23.28                  | 23±1                | 24.00                   | 2.79           | 26.79          | 477.529       | 0.095                               | 1                           | 0.0950 | Pass   |
| LTE B66     | 1710            | 20                       | 22.24                  | 22±1                | 23.00                   | 2.06           | 25.06          | 320.627       | 0.064                               | 1                           | 0.0638 | Pass   |
| LTE B71     | 663             | 20                       | 23.8                   | 23±1                | 24.00                   | 0.59           | 24.59          | 287.740       | 0.057                               | 0.442                       | 0.1295 | Pass   |

**Multiple transmission:**

$$2.4G\ WLAN + LTE\ B71 = 0.0230 + 0.1295 = 0.1525 < 1$$

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. The Bluetooth and WLAN can't simultaneous transmission at the same time.

3. ERP = EIRP - 2.15

※※※※※END OF THE REPORT※※※※※