



# RADIO EXPOSURE TEST REPORT

FCC ID : 2AFXU-BS10001

Equipment : Base Station

Brand Name : **M2COMM**

Model Name : Base Station

Applicant : M2Communication Inc.  
15F-1, No.32, Gaotie 2nd Rd., Zhubei City, Hsinchu  
County, 302, Taiwan

Manufacturer : M2Communication Inc.  
15F-1, No.32, Gaotie 2nd Rd., Zhubei City, Hsinchu  
County, 302, Taiwan

Standard : 47 CFR Part 2.1091

The product was received on Jun. 30, 2021, and testing was started from Aug. 04, 2021 and completed on Aug. 26, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**  
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



## Table of Contents

|                                                 |          |
|-------------------------------------------------|----------|
| History of this test report.....                | 3        |
| Summary of Test Result.....                     | 4        |
| <b>1 General Description .....</b>              | <b>5</b> |
| 1.1 EUT General Information .....               | 5        |
| 1.2 Antenna Information .....                   | 5        |
| 1.3 Accessories .....                           | 5        |
| 1.4 Testing Location .....                      | 5        |
| <b>2 Maximum Permissible Exposure .....</b>     | <b>6</b> |
| 2.1 Limit of Maximum Permissible Exposure ..... | 6        |
| 2.2 MPE Calculation Method.....                 | 6        |
| 2.3 Calculated Result and Limit.....            | 7        |

### Photographs of EUT v01



## History of this test report

TEL : 886-3-656-9065  
FAX : 886-3-656-9085  
Report Template No.: CB-A1\_1 Ver1.1

Page Number : 3 of 7  
Issued Date : Aug. 30, 2021  
Report Version : 01



## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items          | Result (PASS/FAIL) | Remark |
|---------------|-----------------|---------------------|--------------------|--------|
| 2             | -               | Exposure evaluation | PASS               | -      |

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by:** Sam Chen

**Report Producer:** Vicky Huang



# 1 General Description

## 1.1 EUT General Information

| RF General Information |                       |                           |                 |
|------------------------|-----------------------|---------------------------|-----------------|
| Evaluation Mode        | Frequency Range (MHz) | Operating Frequency (MHz) | Modulation Type |
| LoRa                   | 902-928               | 903-927                   | 2-GFSK          |

## 1.2 Antenna Information

| Ant. | Brand     | Model Name           | Antenna Type | Connector | Gain (dBi) |
|------|-----------|----------------------|--------------|-----------|------------|
| 1    | ARISTOTLE | RFA-S1-C21-M62-10886 | Dipole       | SMA       | 0.52       |

Note: The above information was declared by manufacturer.

## 1.3 Accessories

RJ-45 cable\*1, non-shielded 1.5m

## 1.4 Testing Location

| Testing Location Information                              |                                                                                                                                                                                                                                                |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Lab. : Sporton International Inc. Hsinchu Laboratory |                                                                                                                                                                                                                                                |
| Hsinchu<br>(TAF: 3787)                                    | ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)<br>TEL: 886-3-656-9065 FAX: 886-3-656-9085<br>Test site Designation No. TW3787 with FCC.<br>Conformity Assessment Body Identifier (CABID) TW3787 with ISED. |

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|------------------------------------------|------------------------------------------------------------------|
| 0.3-3.0               | 614                               | 1.63                              | *(100)                                   | <6                                                               |
| 3.0-30                | 1842/f                            | 4.89/f                            | *(900/f <sup>2</sup> )                   | <6                                                               |
| 30-300                | 61.4                              | 0.163                             | 1.0                                      | <6                                                               |
| 300-1500              | -                                 | -                                 | f/300                                    | <6                                                               |
| 1500-100,000          | -                                 | -                                 | 5                                        | <6                                                               |

(B) Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|------------------------------------------|------------------------------------------------------------------|
| 0.3-1.34              | 614                               | 1.63                              | *(100)                                   | <30                                                              |
| 1.34-30               | 824/f                             | 2.19/f                            | *(180/f <sup>2</sup> )                   | <30                                                              |
| 30-300                | 27.5                              | 0.073                             | 0.2                                      | <30                                                              |
| 300-1500              | -                                 | -                                 | f/1500                                   | <30                                                              |
| 1500-100,000          | -                                 | -                                 | 1.0                                      | <30                                                              |

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



## 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

| Mode          | DG<br>(dBi) | Power<br>(dBm) | EIRP<br>(dBm) | Tolerance<br>(dB) | Tune-up<br>EIRP<br>(dBm) | Tune-up<br>EIRP<br>(W) | Distance<br>(cm) | S<br>(mW/cm <sup>2</sup> ) | S Limit<br>(mW/cm <sup>2</sup> ) |
|---------------|-------------|----------------|---------------|-------------------|--------------------------|------------------------|------------------|----------------------------|----------------------------------|
| 0.9G;LoRa-500 | 0.52        | 18.10          | 18.62         | 0.50              | 19.12                    | 0.08166                | 20               | 0.01625                    | 0.61800                          |

————THE END————