

# RF Exposure Evaluation Report

**Report No.:** JYTSZ-R12-2400909

**Applicant:** Shenzhen RodinBell Technology Co., Ltd.

**Address of Applicant:** 905#, Block B, Xinghe WORLD, Wuhe Avenue, Longgang District, Shenzhen City, PRC

**Equipment Under Test (EUT)**

Product Name: 16-port UHF RFID Module

Model No.: M-704

Trade mark: N/A

**FCC ID:** 2AKQD-M-704

**Applicable standards:** FCC CFR Title 47 Part 2 (§2.1091)

**Date of sample receipt:** 30 Jul., 2024

**Date of Test:** 31 Jul., to 20 Aug., 2024

**Date of report issue:** 19 Sep., 2024

**Test Result:** PASS

**Project by:**

*Project Engineer*

**Date:**

*19 Sep., 2024*

**Reviewed by:**

*Senior Engineer*

**Date:**

*19 Sep., 2024*

**Approved by:**

*Manager*

**Date:**

*19 Sep., 2024*

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 above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

| Version No. | Date          | Description    |
|-------------|---------------|----------------|
| 00          | 21 Aug., 2024 | Original       |
| 01          | 19 Sep., 2024 | Update page 6. |
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## 3 General Information

### 3.1 Client Information

|               |                                                                                 |
|---------------|---------------------------------------------------------------------------------|
| Applicant:    | Shenzhen RodinBell Technology Co., Ltd.                                         |
| Address:      | 905#, Block B, Xinghe WORLD, Wuhe Avenue, Longgang District, Shenzhen City, PRC |
| Manufacturer: | Shenzhen RodinBell Technology Co., Ltd.                                         |
| Address:      | 905#, Block B, Xinghe WORLD, Wuhe Avenue, Longgang District, Shenzhen City, PRC |

### 3.2 General Description of E.U.T.

|                        |                                                                               |
|------------------------|-------------------------------------------------------------------------------|
| Product Name:          | 16-port UHF RFID Module                                                       |
| Model No.:             | M-704                                                                         |
| Operation Frequency:   | 902 MHz - 928 MHz                                                             |
| Modulation technology: | ASK                                                                           |
| Antenna Type:          | External Antenna                                                              |
| Antenna gain:          | 1.5 dBi (declare by Applicant)                                                |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. |

### 3.3 Operating Modes

| Operating mode | Detail description                                     |
|----------------|--------------------------------------------------------|
| RFID mode      | Keep the EUT in continuously transmitting in RFID mode |

### 3.4 Additions to, deviations, or exclusions from the method

|    |
|----|
| No |
|----|

### 3.5 Laboratory Facility

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1211</b><br/>JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.</li> <li>● <b>ISED – CAB identifier.: CN0021</b><br/>The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>CNAS - Registration No.: CNAS L15527</b><br/>JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.</li> <li>● <b>A2LA - Registration No.: 4346.01</b><br/>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 3.6 Laboratory Location

|                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>JianYan Testing Group Shenzhen Co., Ltd.<br/>Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.<br/>Tel: +86-755-23118282, Fax: +86-755-23116366<br/>Email: info-JYTee@lets.com, Website: <a href="http://jyt.lets.com">http://jyt.lets.com</a></p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 4 Technical Requirements Specification

### 4.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

| Frequency range (MHz)                                   | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|---------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposures        |                               |                               |                                     |                          |
| 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 |                               |                               |                                     |                          |
| 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                       |

### 4.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

## 4.3 Result

| Frequency (MHz) | Maximum Output power (dBm) | Maximum Output power (mW) | Antenna Gain (dBi) | Antenna Gain (numeric) | Distance (cm) | Result (mW/cm <sup>2</sup> ) | Limits for General Population/ Uncontrolled Exposure (mW/cm <sup>2</sup> ) |
|-----------------|----------------------------|---------------------------|--------------------|------------------------|---------------|------------------------------|----------------------------------------------------------------------------|
| RFID            |                            |                           |                    |                        |               |                              |                                                                            |
| 927.5           | 29.82                      | 959.40                    | 1.50               | 1.41                   | 20.00         | 0.2696                       | 0.62                                                                       |

Note: Just the worst case mode was shown in report.

## 4.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----