

## MPE REPORT

Report No.: SRTC2024-9004(F)-24032607(I)  
Product Name: Industrial Cellular Router  
Product ID: IR315  
Series Model: IR325, IR365, IR395  
Applicant: Beijing InHand Networks Technology Co., Ltd.  
Manufacturer: Beijing InHand Networks Technology Co., Ltd.  
FCC ID: 2AANY-IR315

| Reference Specification |
|-------------------------|
| FCC Part §1.1310        |

The State Radio\_monitoring\_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

Beijing, P.R.China

Tel: 86-10-57996183 Fax: 86-10-57996388

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## 1 GENERAL INFORMATION

### 1.1 Notes of the test report

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### 1.2 Information about the testing laboratory

|                      |                                                           |
|----------------------|-----------------------------------------------------------|
| Company:             | The State Radio_monitoring_center Testing Center (SRTC)   |
| Test Site 1:         | 15th Building, No.30 Shixing Street, Shijingshan District |
| Test Site 2:         | No.80, Zhaojiachang, Beizang, Daxing District             |
| City:                | Beijing                                                   |
| Country or Region:   | P.R.China                                                 |
| Contacted person:    | Liu Jia                                                   |
| Tel:                 | +86 10 57996183                                           |
| Fax:                 | +86 10 57996388                                           |
| Email:               | liujiaf@srtc.org.cn                                       |
| Designation Number:  | CN1267                                                    |
| Registration number: | 239125                                                    |

### 1.3 Applicant's details

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| Company:           | Beijing InHand Networks Technology Co., Ltd.                                   |
| Address:           | Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing |
| City:              | Beijing                                                                        |
| Country or Region: | China                                                                          |
| Contacted person:  | GuJichi                                                                        |
| Tel:               | 15281366255                                                                    |
| Email:             | gujc@inhand.com.cn                                                             |

#### 1.4 Manufacturer's details

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| Company:           | Beijing InHand Networks Technology Co., Ltd.                                   |
| Address:           | Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing |
| City:              | Beijing                                                                        |
| Country or Region: | China                                                                          |
| Contacted person:  | GuJichi                                                                        |
| Tel:               | 15281366255                                                                    |
| Email:             | gujc@inhand.com.cn                                                             |

#### 1.5 Test Environment

|                                         |           |
|-----------------------------------------|-----------|
| Date of Receipt of test sample at SRTC: | 2024-3-22 |
| Testing Start Date:                     | 2024-3-23 |
| Testing End Date:                       | 2024-4-12 |

| Environmental Data: | Temperature (°C) | Humidity (%) |
|---------------------|------------------|--------------|
| Ambient             | 25               | 40           |
| Maximum Extreme     | 70               | ---          |
| Minimum Extreme     | -20              | ---          |

|                                          |    |
|------------------------------------------|----|
| Normal Supply Voltage (V d.c.):          | 12 |
| Maximum Extreme Supply Voltage (V d.c.): | 36 |
| Minimum Extreme Supply Voltage (V d.c.): | 9  |

## 2 DESCRIPTION OF THE DEVICE UNDER TEST

### 2.1 Final Equipment Build Status

#### LTE B48

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| Frequency Range:         | LTE Band 48: Tx:3550~3700MHz Rx:3550~3700MHz         |
| Modulation Type(Uplink): | QPSK/16QAM/64QAM                                     |
| Antenna Type:            | Sucker antenna                                       |
| Antenna Gain:            | LTE B48: -2dBi<br>ERP = EIRP(Power+Gain) – 2.15 (dB) |
| Power Supply:            | DC supply                                            |
| Software Revision:       | V1.0                                                 |
| Hardware Revision:       | V1.1                                                 |

#### Wi-Fi 2.4G

|                              |                                           |
|------------------------------|-------------------------------------------|
| Frequency Band:              | 2.412GHz~2.462GHz                         |
| Number of Channel For 20MHz: | 11                                        |
| Number of Channel For 40MHz: | 7                                         |
| Modulation Type:             | 802.11b<br>802.11g<br>802.11n (HT20/HT40) |
| Power Supply:                | DC supply                                 |
| Antenna gain:                | 2.69 dBi(max)                             |
| Directional Gain:            | 2.69 dBi                                  |
| Software Revision:           | V1.0                                      |
| Hardware Revision:           | V1.1                                      |
| Antenna type:                | Sucker antenna                            |
| Antenna connector:           | RP-SMA                                    |

### 3 REFERENCE SPECIFICATION

| Specification | Version | Title                                      |
|---------------|---------|--------------------------------------------|
| Part 1.1310   | Latest  | Radio frequency radiation exposure limits. |

### 4 RESULT SUMMARY

| Case | Verdict |
|------|---------|
| MPE  | Pass    |

|                                                                                                                                        |                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| This Test Report Is Issued by:<br>Mr. Peng Zhen<br> | Checked by:<br>Mr. Li Bin<br> |
| Tested by:<br>Mr. Hui Wen<br>                       | Issued date:<br>2024/05/07                                                                                         |

## 5.CALCULATION RESULT

### 5.1 Maximum permissible exposure (MPE)

#### Limit:

(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                                                                |

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

### Result:

According to §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

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:

The  $S = PG / (4\pi R^2)$

Where S = power density in mW/cm<sup>2</sup>

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

### Standalone Transmission Result

| Band      | Freq. (MHz) | Maximum Power (dBm) | ANT Gain (dBi) | Maximum EIRP (dBm) | Maximum EIRP(mW) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Power Density/ Limit |
|-----------|-------------|---------------------|----------------|--------------------|------------------|---------------------------------------------|----------------------|
| LTE B48   | 3550~3700   | 23.36               | -2.00          | 21.39              | 137.721          | 0.027                                       | 0.027                |
| WIFI 2.4G | 2412~2462   | 17.25               | 2.69           | 19.94              | 98.628           | 0.020                                       | 0.020                |

### Simultaneous Transmission Result

| Power Density1 / Limit | Powe Density2 / Limit | Σ(Power Density / Limit) |
|------------------------|-----------------------|--------------------------|
| 0.027                  | 0.020                 | 0.047                    |

Note: Simultaneous Transmission Limit = Power\_1 / Limit\_1 + Power\_2 / Limit\_2 < 1.

---End of Test Report---