

MPE REPORT

Report No.: SRTC2024-9004(F)-24041502(I)

Product Name: Cellular Router

Product ID: CR202-NAC6

Series Model: CR212-NAC6, CR252-NAC6, CR292-NAC6

Brand Name: inhand

Applicant: Beijing InHand Networks Technology Co., Ltd.

Manufacturer: Beijing InHand Networks Technology Co., Ltd.

FCC ID: 2AANY-CR202NAC6

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

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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
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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:	2024/4/18
Testing Start Date:	2024/4/19
Testing End Date:	2024/6/19

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	50	---
Minimum Extreme	-10	---

Normal Supply Voltage (V d.c.):	5
Maximum Extreme Supply Voltage (V d.c.):	5.5
Minimum Extreme Supply Voltage (V d.c.):	4.5

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

LTE B48

Frequency Range:	LTE Band 2: Tx:1850~1910MHz Rx:1930~1990MHz LTE Band 4: Tx: 1710~1755MHz Rx: 2110~2155MHz LTE Band 5: Tx: 824~849MHz Rx: 869~894MHz LTE Band 7: Tx: 2500~2570MHz Rx: 2620~2690MHz LTE Band 12: Tx: 699 ~716 MHz Rx: 729 ~746 MHz LTE Band 13: Tx: 777~787MHz Rx: 746~756MHz LTE Band 14: Tx: 788 ~798 MHz Rx: 758 ~768 MHz LTE Band 25: Tx: 1850 ~ 1915 MHz Rx: 1930 ~ 1995 MHz LTE Band 26: Tx: 814~849MHz Rx: 859~894MHz LTE Band 30: Tx: 2305 ~ 2315 MHz Rx: 2350 ~ 2360 MHz LTE Band 41: Tx: 2496~2690MHz Rx: 2496~2690MHz LTE Band 48: Tx:3550~3700MHz Rx:3550~3700MHz LTE Band 66: Tx: 1710~1780MHz Rx: 2110~2200MHz LTE Band 71: Tx: 663 ~698 MHz Rx: 617 ~652 MHz
Modulation Type(Uplink):	QPSK/16QAM/64QAM
Antenna Type:	Ant0/ Ant1:FPC Antenna ANT2/3: External Antenna
Antenna Gain:	LTE B48: Ant0:1.7dBi ANT1:2.4dBi Ant2:-0.92dBi ANT3:-0.92dBi ERP = EIRP(Power+Gain) – 2.15 (dB)
Power Supply:	DC supply
Software Revision:	V1.0
Hardware Revision:	V1.6

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 802.11g 802.11n (HT20/HT40)
Power Supply:	DC supply
Antenna gain:	ANT0: 0.77 dBi(max) ANT1: 3 dBi(max)
Directional Gain:	2.03 dBi

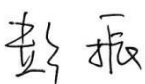
Software Revision:	V1.0
Hardware Revision:	V1.6
Antenna type:	FPC Antenna
Antenna connector:	NA

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: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Mr. Hui Wen 	Issued date: 2024/08/06

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 ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	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 ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	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:

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

Where S = power density in mW/cm²

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 ²)	Limit (mW/cm ²)	Power Density/ Limit
LTE B2	1850.7	25.00	2.8	27.80	602.560	0.120	1	0.120
LTE B4	1710.7	25.00	2.8	27.80	602.560	0.120	1	0.120
LTE B5	824.7	25.00	0.2	25.20	331.131	0.066	0.5498	0.120
LTE B7	2502.5	25.00	2.9	27.90	616.595	0.123	1	0.123
LTE B12	699.7	25.00	-0.5	24.50	281.838	0.056	0.4665	0.120
LTE B13	779.5	25.00	-0.5	24.50	281.838	0.056	0.5197	0.108
LTE B14	790.5	25.00	-0.5	24.50	281.838	0.056	0.5270	0.106
LTE B25	1850.7	25.00	2.8	27.80	602.560	0.120	1	0.120
LTE B26	824.7	25.00	0.2	25.20	331.131	0.066	0.5498	0.120
LTE B30	2307.5	25.00	3	28.00	630.957	0.126	1	0.126
LTE B48	3560	24.53	-0.92	23.61	229.615	0.046	1	0.046
LTE B66	1710.7	25.00	2.8	27.80	602.560	0.120	1	0.120
LTE B71	665.5	25.00	-0.9	24.10	257.040	0.051	0.4437	0.115
WIFI 2.4G	2462	18.06	2.03	20.09	102.094	0.020	1	0.020

NOTE : The above table reuses test data from the Report DSS_SEWA2208000035RG03-FCC MPE Report for MPE evaluation in the LTE section.

Simultaneous Transmission Result

Power Density1 / Limit (LTE30)	Powe Density2 / Limit WIFI 2.4G (WIFI 2.4G)	Σ(Power Density / Limit)
0.126	0.020	0.146

Note: Simultaneous Transmission Limit = Power_1 / Limit_1 + Power_2 / Limit_2 < 1.

---End of Test Report---