

MPE REPORT

Report No.: SRTC2024-9004(F)-24091203(I)
Product Name: Edge Computing Gateway
Model Name: IG902-FQ39
Applicant: Beijing InHand Networks Technology Co., Ltd.
FCC ID: 2AANY-IG902FQ39

Reference Specification
FCC Part §1.1310

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, ShijingshanDistrict, Beijing,P.R.China

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1 GENERAL INFORMATION

1.1 Notes of the test report

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The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Designation number:	CN1267
Registration number:	239125
Certificate Number:	5055.02
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
Contacted person:	Liu Jia
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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:	2024/9/13
Testing Start Date:	2024/9/14
Testing End Date:	2024/10/21

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	75	---
Minimum Extreme	-25	---

Normal Supply Voltage (V d.c.):	12
Maximum Extreme Supply Voltage (V d.c.):	48
Minimum Extreme Supply Voltage (V d.c.):	12

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 Final equipment build status

WWAN

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:699~716MHz Rx: 729~746MHz LTE Band 13: Tx: 777~787MHz Rx: 746~756MHz LTE Band 14: Tx: 788 ~798 MHz Rx: 758 ~768 MHz LTE Band 17: Tx: 704~716MHz Rx: 734~746MHz 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 42: Tx: 3400 ~3600 MHz Rx: 3400 ~ 3600 MHz LTE Band 43: Tx: 3600 ~ 3800 MHz Rx: 3600 ~ 3800 MHz 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
Antenna Type:	Sucker antenna
Antenna Gain:	LTE B2: 2.94dBi LTE B4: 2.94dBi LTE B5: 1.25dBi LTE B7: 2.6dBi LTE B12: 1.25dBi LTE B13: 1.25dBi LTE B14: 1.25dBi LTE B17: 1.25dBi LTE B25: 2.94dBi LTE B26: 1.25dBi LTE B30: 1.1dBi LTE B41: 2.6dBi LTE B42: -2.0dBi LTE B43: -2.0dBi LTE B48:-2.0dBi LTE B66: 2.94dBi

	LTE B71: 1.25dBi ERP = EIRP(Power+Gain) – 2.15 (dB)
Power Supply:	DC supply
Software Revision:	V2.1
Hardware Revision:	V1.1
SN/IMEI:	GL9022425014925/868517074320205

WLAN

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:	For Power/PSD: 3.0dBi(max)
Directional Gain:	N/A
Software Revision:	V2.1
Hardware Revision:	V1.1
SN/IMEI:	GL9022425014925/868517074320205
Antenna type:	Sucker antenna
Antenna connector:	RP-SMA-J1.5

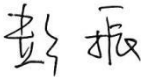
NOTE1: Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$ dBi(Uncorrelated)

3 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.Huang Yubin 	Issued date: 20241031

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/cm2)	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/cm2)	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:

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

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)
LTE B2	1850.70	25.00	2.94	27.940	622.300	0.124	1.00
LTE B4	1710.70	25.00	2.94	27.940	622.300	0.124	1.00
LTE B5	824.70	25.00	1.25	26.250	421.697	0.084	0.55
LTE B7	2502.50	25.00	2.6	27.600	575.440	0.114	1.00
LTE B12	699.70	25.00	1.25	26.250	421.697	0.084	0.47
LTE B13	779.50	25.00	1.25	26.250	421.697	0.084	0.52
LTE B14	790.50	25.00	1.25	26.250	421.697	0.084	0.53
LTE B17	706.50	25.00	1.25	26.250	421.697	0.084	0.47
LTE B25	1850.70	25.00	2.94	27.940	622.300	0.124	1.00
LTE B26 (814-824)	814.70	25.00	1.25	26.250	421.697	0.084	0.54
LTE B26 (824-849)	824.70	25.00	1.25	26.250	421.697	0.084	0.55
LTE B30	2307.50	25.00	1.1	26.10	407.380	0.081	1.00
LTE B41	2498.50	25.00	2.6	27.600	575.440	0.114	1.00
LTE B42 (3450-3550)	3452.50	25.00	-2.00	23.000	199.526	0.040	1.00
LTE B42 (3550-3600)	3552.50	25.00	-2.00	23.000	199.526	0.040	1.00
LTE B43 (3600-3700)	3602.50	25.00	-2.00	23.000	199.526	0.040	1.00
LTE B48	3552.50	25.00	-2.00	23.000	199.526	0.040	1.00
LTE B66	1710.70	25.00	2.94	27.940	622.300	0.124	1.00
LTE B71	665.50	25.00	1.25	26.25	421.697	0.084	0.44

LTE B48*	3697.50	23.80	-2.00	21.800	151.356	0.030	1.00
WIFI 2.4G*	2437.00	15.60	3.00	18.600	72.444	0.014	1.00

NOTE: Except for the data marked with *, other data are quoted from the report SEWA2304000051RG02

Simultaneous Transmission Result

Power Density1 / Limit	Power Density2 / Limit	Σ(Power Density / Limit)
0.12 (WWAN MAX)	0.01(WIFI 2.4G)	0.13

Note: Simultaneous Transmission Limit = Power Density_1 / Limit_1 + Power Density_2 / Limit_2 < 1.