

MPE REPORT

Report No.: SRTC2024-9004(F)-24072501(I)

Product Name: Edge Router

Product ID: ER605-FF39

Applicant: Beijing InHand Networks Technology Co., Ltd.

Manufacturer: Beijing InHand Networks Technology Co., Ltd.

FCC ID: 2AANY-ER605FF39

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:	2024/7/30
Testing Start Date:	2024/7/31
Testing End Date:	2024/8/16

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	50	---
Minimum Extreme	-20	---

Normal Supply Voltage (V d.c.):	12
Maximum Extreme Supply Voltage (V d.c.):	15
Minimum Extreme Supply Voltage (V d.c.):	9

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

WCDMA

Frequency Range:	WCDMA Band II: Tx:1850~1910MHz Rx:1930~1990MHz WCDMA Band IV: Tx: 1710~1755MHz Rx: 2110~2155MHz WCDMA Band V: Tx: 824~849MHz Rx: 869~894MHz
Mode:	HSDPA/HSUPA
Duplex Mode:	FDD
Duplex Spacing:	WCDMA Band II: 80MHz WCDMA Band IV: 400MHz WCDMA Band V: 45MHz
Antenna Type:	Sucker antenna
Antenna Gain:	WCDMA Band II: Ant1: 2.63dBi WCDMA Band IV: Ant1: 2.86dBi WCDMA Band V: Ant1: 1.61dBi ERP = EIRP(Power +Gain) – 2.15 (dB)
Power Supply:	DC supply
Software Revision:	V2.0
Hardware Revision:	V2.0
SN/IMEI:	CF9542417000019/863890053818654

LTE

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/64QAM

Antenna Type:	Sucker antenna
Antenna Gain:	LTE B2: Ant1: 2.63dBi LTE B4: Ant1: 2.86dBi LTE B5: Ant1: 1.61dBi LTE B7: Ant1: 1.07dBi LTE B12: Ant1: 1.61dBi LTE B13: Ant1: 2.19dBi LTE B14: Ant1: 2.22dBi LTE B17: Ant1: 1.61dBi LTE B25: Ant1: 2.63dBi LTE B26: Ant1: 1.93dBi LTE B30: Ant1: 0.67dBi LTE B41: Ant1: 2.49dBi LTE B42: Ant1: -1.18dBi LTE B43: Ant1: -0.13dBi(max) LTE B48: ANT1:-2.0dBi LTE B66: Ant1: 3.76dBi LTE B71: Ant1: 1.39dBi ERP = EIRP(Power+Gain) – 2.15 (dB)
Power Supply:	DC supply
Software Revision:	V2.0
Hardware Revision:	V2.0
SN/IMEI:	CF9542417000019/863890053818654

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:	For Power/PSD:ANT0: 3.0dBi(max) ANT1: 3.0dBi(max)
Directional Gain:	3dBi
Software Revision:	V2.0
Hardware Revision:	V2.0

SN/IMEI:	CF9542417000019/863890053818654
Antenna type:	Sucker antenna
Antenna connector:	RP-SMA-J1.5

Wi-Fi 5G

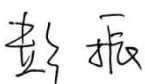
Frequency Band(s):	U-NII-1:5150MHz-5250MHz U-NII-3:5725MHz-5850MHz
Modulation Type:	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80)
RU Type	N/A
Antenna Type:	Sucker antenna
Antenna gain	For Power/PSD: ANT0: 5150MHz-5250MHz: 0.02dBi 5725MHz-5850MHz: -1.6dBi ANT1: 5150MHz-5250MHz: 0.02dBi 5725MHz-5850MHz: -1.6dBi
Directional Gain:	5150MHz-5250MHz: 0.02dBi 5725MHz-5850MHz: -1.6dBi
Beamforming Directional Gain:	N/A
Power Supply:	DC supply
Software Revision:	V2.0
Hardware Revision:	V2.0
SN/IMEI:	CF9542417000019/863890053818654

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: 2024/09/18

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:

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

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)	Power Density/ Limit
WCDMA II	1850 ~ 1910	24.50	2.63	27.13	516.416	0.103	1	0.103
WCDMA IV	1710 ~ 1755	24.50	2.86	27.36	544.503	0.108	1	0.108
WCDMA V	824 ~ 849	24.50	1.61	26.11	408.319	0.081	0.549	0.148
LTE Band2	1850 ~ 1910	24.00	2.63	26.63	460.257	0.092	1	0.092
LTE Band4	1710 ~ 1755	24.00	2.86	26.86	485.289	0.097	1	0.097
LTE Band5	824 ~ 849	24.00	1.61	25.61	363.915	0.072	0.549	0.132
LTE Band7	2500 ~ 2570	24.00	1.07	25.07	321.366	0.064	1	0.064
LTE Band12	699 ~ 716	24.00	1.61	25.61	363.915	0.072	0.466	0.155
LTE Band13	777 ~ 787	24.00	2.19	26.19	415.911	0.083	0.518	0.160
LTE Band14	788 ~ 798	24.00	2.22	26.22	418.794	0.083	0.525	0.159
LTE Band17	704 ~ 716	24.00	1.61	25.61	363.915	0.072	0.469	0.154
LTE Band25	1850 ~ 1915	24.00	2.63	26.63	460.257	0.092	1	0.092
LTE Band26	814 ~ 849	24.00	1.93	25.93	391.742	0.078	0.542	0.144
LTE Band30	2305 ~ 2315	24.00	0.67	24.67	293.089	0.058	1	0.058
LTE Band41	2500 ~ 2690	24.00	2.49	26.49	445.656	0.089	1	0.089
LTE Band41 HPUE	2500 ~ 2690	27.00	2.49	29.49	889.201	0.177	1	0.177
LTE Band42	3450 ~ 3600	24.00	-1.18	22.82	191.426	0.038	1	0.038
LTE Band43	3600 ~ 3800	24.00	-0.13	23.87	243.781	0.048	1	0.048

LTE Band48	3550 ~ 3700	23.90	-2	21.90	154.882	0.031	1	0.031
LTE Band66	1710 ~ 1780	24.00	3.76	27.76	597.035	0.119	1	0.119
LTE Band71	1710 ~ 1780	24.00	1.39	25.39	345.939	0.069	1	0.069
WIFI 2.4G	2437	17.26	3	20.26	106.170	0.021	1	0.021
WIFI 5.2G	5240	18.51	0.02	18.53	71.285	0.014	1	0.014
WIFI 5.8G	5745	18.66	-1.6	17.06	50.816	0.010	1	0.010

NOTE: The above table reuses test data from the Report 2110RSU053-U7 FCC Exposure Report for MPE evaluation in the LTE and WCDMA section.

Simultaneous Transmission Result

Power Density1 / Limit (LTE41)	Powe Density2 / Limit WIFI 2.4G (WIFI 2.4G)	Σ(Power Density / Limit)
0.177	0.021	0.198

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

---End of Test Report---