

MPE REPORT

Report No.: SRTC2024-9004(F)-24041101(I)
Product Name: WIFI Module
Model Name: SC171-W
Applicant: Fibocom Wireless Inc
Manufacturer: Fibocom Wireless Inc
FCC ID: ZMOSC171W

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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CONTENTS

1 GENERAL INFORMATION	2
1.1 NOTES OF THE TEST REPORT	2
1.2 INFORMATION ABOUT THE TESTING LABORATORY	2
1.3 APPLICANT’S DETAILS	2
1.4 MANUFACTURER’S DETAILS	2
1.5 TEST ENVIRONMENT	3
2 DESCRIPTION OF THE DEVICE UNDER TEST	4
2.1 FINAL EQUIPMENT BUILD STATUS	4
3 REFERENCE SPECIFICATION	7
4 RESULT SUMMARY	7
5.CALCULATION RESULT	8
5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)	8

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
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Email:	liujiaf@srtc.org.cn
Designation Number:	CN1267
Registration number:	239125

1.3 Applicant's details

Company:	Fibocom Wireless Inc.
Address:	1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan, Shenzhen , China
City:	Shenzhen
Country or Region:	China
Contacted person:	Sam Guo
Tel:	15013511563
Email:	sam.guo@fibocom.com

1.4 Manufacturer's details

Company:	Fibocom Wireless Inc.
Address:	1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan, Shenzhen , China
City:	Shenzhen
Country or Region:	China
Contacted person:	Sam Guo
Tel:	15013511563
Email:	sam.guo@fibocom.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2024/4/12
Testing Start Date:	2024/4/13
Testing End Date:	2024/6/3

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	75	---
Minimum Extreme	-30	---

Normal Supply Voltage (V d.c.):	3.8
Maximum Extreme Supply Voltage (V d.c.):	4.4
Minimum Extreme Supply Voltage (V d.c.):	3.5

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	79
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Duplex Mode:	TDD
Channel Spacing:	1MHz
Data Rate:	1Mbps, 2 Mbps, 3 Mbps
Power Supply:	DC supply
Software Revision:	SC171-W-T16.00.006
Hardware Revision:	V1.1
IMEI:	NA
Antenna type:	External antenna
Antenna connector:	SMA Male J
Antenna Gain:	3.36dBi

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	40
Modulation Type:	GFSK
Equipment Class:	DTS
Channel Spacing:	2MHz
Data Rate:	LE 1Mbps/2Mbps
Power Supply:	DC supply
Software Revision:	SC171-W-T16.00.006
Hardware Revision:	V1.1
IMEI:	NA
Antenna type:	External antenna
Antenna connector:	N/A
Antenna Gain:	3.36dBi

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) 802.11ax (HE20/HE40)
Power Supply:	DC supply
Software Revision:	SC171-W-T16.00.006
Hardware Revision:	V1.1
IMEI:	NA
Antenna type:	External antenna
Antenna connector:	SMA Male J
Antenna Gain:	3.36dBi

Frequency Band(s):	U-NII-1:5150MHz-5250MHz U-NII-2A:5250MHz-5350MHz U-NII-2C:5470MHz-5600MHz/5650MHz-5725MHz U-NII-3:5725MHz-5850MHz U-NII-4: 5850MHz-5895MHz	
The DFS related operating mode(s) of the equipment:	<input type="checkbox"/>	Master
	<input type="checkbox"/>	Slave with radar detection
	<input checked="" type="checkbox"/>	Slave without radar detection
Modulation Type:	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80/VHT160) 802.11ax (HE20/HE40/HE80/HE160)	
RU Type	Full RU	

	Partial RU
Antenna Type:	External antenna
Antenna Gain:	U-NII-1/ U-NII-2A: 4.49dBi U-NII-2C/ U-NII-3/ U-NII-4: 3.32dBi
Beamforming Directional Gain:	U-NII-1/ U-NII-2A: 4.49dBi U-NII-2C/ U-NII-3/ U-NII-4: 3.32dBi
Power Supply:	DC supply
Software Revision:	SC171-W-T16.00.006
Hardware Revision:	V1.1
IMEI:	NA




Frequency Band(s):	U-NII-5:5925MHz-6425MHz U-NII-6:6425 MHz-6525MHz U-NII-7:6525 MHz-6875MHz U-NII-8:6875 MHz-7125MHz
Modulation Type:	802.11a 802.11ax (HE20/HE40/HE80/HE160)
RU Type	Full RU Partial RU
Antenna Type:	External antenna
Antenna Gain:	6.12dBi(max)
Directional Gain:	6.12dBi(max)
Power Supply:	DC supply
Software Revision:	SC171-W-T16.00.006
Hardware Revision:	V1.1
IMEI:	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. Huang Yubin 	Issued date: 20240604

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 (mW/cm ²)	Power Density/ Limit
BT	2441	15.29	3.36	18.65	73.282	0.015	0.015
BLE	2440	10.11	3.36	13.47	22.233	0.004	0.004
WIFI 2.4G	2452	19.55	3.36	22.91	195.434	0.039	0.039
WIFI 5G	5260	18.87	4.49	23.36	216.770	0.043	0.043
WIFI 6G	5955	10.22	6.12	16.34	43.053	0.009	0.009

Simultaneous Transmission Result

Power Density1 / Limit	Power Density2 / Limit	Σ(Power Density / Limit)
0.015(BT)	0.043(WIFI 5G)	0.058

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

---End of Test Report---