

MPE REPORT

Report No.: SRTC2024-9004(F)-24052702(I)
Product Name: WiFi Module
Model Name: MWH542B
Applicant: Qingdao Intelligent & Precise Electronics Co., Ltd.
Manufacturer: Qingdao Intelligent & Precise Electronics Co., Ltd.
FCC ID: 2AJVQ-MWH542B

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

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).The test results relate only to individual items of the samples which have been tested.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)
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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Designation Number:	CN1267
Registration number:	239125

1.3 Applicant's details

Company:	Qingdao Intelligent & Precise Electronics Co., Ltd.
Address:	No.218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao City, Shandong Province, P. R. China
City:	Qingdao
Country or Region:	CHINA
Contacted person:	wanghaining
Tel:	13381232625
Email:	wanghaining@hisense.com

1.4 Manufacturer's details

Company:	Qingdao Intelligent & Precise Electronics Co., Ltd.
Address:	No.218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao City, Shandong Province, P. R. China
City:	Qingdao
Country or Region:	CHINA
Contacted person:	wanghaining
Tel:	13381232625
Email:	wanghaining@hisense.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2024-05-28
Testing Start Date:	2024-05-30
Testing End Date:	2024-06-21

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	40
Maximum Extreme	70	---
Minimum Extreme	-10	---

Normal Supply Voltage (V d.c.):	3.3
Maximum Extreme Supply Voltage (V d.c.):	3.6
Minimum Extreme Supply Voltage (V d.c.):	3.0

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

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: 0.86dBi Ant1: 0.88dBi
Directional Gain:	0.87dBi
Software Revision:	NA
Hardware Revision:	V1.0
IMEI:	#1
Antenna type:	Ant0: PCB Antenna Ant1: Ipex-pull-out ANT
Antenna connector:	N/A

Frequency Band(s):	U-NII-1:5150MHz-5250MHz U-NII-2A:5250MHz-5350MHz U-NII-2C:5470MHz-5725MHz U-NII-3:5725MHz-5850MHz
Modulation Type:	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80)
Antenna Type:	Ant0: PCB Antenna Ant1: Ipex-pull-out ANT
Antenna gain	ANT0: 2.03dBi ANT1: 0.22dBi
Directional Gain:	1.22dBi
Power Supply:	DC supply




Software Revision:	NA
Hardware Revision:	V1.0
IMEI:	#1

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: 20240621

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)	Directional Gain(dBi)	Maximum EIRP (dBm)	Maximum EIRP(mW)	Power Density (mW/cm ²)	Power Density/ Limit
WIFI 2.4G	2437	19.97	0.87	20.84	121.339	0.024	0.024
WIFI 5G	5700	18.91	1.22	20.13	103.039	0.020	0.020

---End of Test Report---