Certificate #5505.02

MPE REPORT

Report No.:	SRTC2024-9004(F)-24051402(I)
Product Name:	WiFi/BT Module
Model Name:	MWH640S
Applicant:	Qingdao Intelligent & Precise Electronics Co., Ltd.
Manufacturer:	Qingdao Intelligent & Precise Electronics Co., Ltd.
FCC ID:	2AJVQ-MWH640S

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

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
Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn
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:	013381232625
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:	013381232625
Email:	wanghaining@hisense.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2024/5/14
Testing Start Date:	2024/5/15
Testing End Date:	2024/6/11

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.):	3.5
Minimum Extreme Supply Voltage (V d.c.):	3.1

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	40
Modulation Type:	GFSK
Equipment Class:	DTS
Channel Spacing:	2MHz
Data Rate:	LE 1Mbps/2Mbps LE Coded 125kbps/500kbps
Power Supply:	DC supply
Software Revision:	NA
Hardware Revision:	V1.00
IMEI:	NA
Antenna type:	PIFA antenna
Antenna gain	1.06dBi(max)
Antenna connector:	NA

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
Antenna gain:	1.06dBi(max)
Directional Gain:	NA
Software Revision:	NA
Hardware Revision:	V1.00
Antenna type:	PIFA antenna

Antenna connector:	NA

Note: This product does not support 802.11ax Partial RU

Frequency Band(s)**:**	U-NII-1:5150MHz-5250MHz U-NII-2A:5250MHz-5350MHz U-NII-2C:5470MHz-5725MHz U-NII-3:5725MHz-5850MHz	
The DFS related operating mode(s) of the equipment:	□	Master
	□	Slave with radar detection
	☑	Slave without radar detection
Modulation Type:	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40) 802.11ax (HE20/HE40)	
RU Type	Full RU	
Antenna Type**:**	PIFA antenna	
Antenna gain	1.81dBi(max)	
Directional Gain:	NA	
Beamforming Directional Gain:	NA	
Power Supply**:**	DC supply	
Software Revision:	NA	
Hardware Revision:	V1.00	
IMEI:	NA	

Note: This product does not support 802.11ax Partial RU

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: 20240612

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:

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

Where S = power density in mW/cm^2

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
BLE	2402	2.60	1.06	3.66	2.323	0.000	0.000
WIFI 2.4G	2412	16.08	1.06	17.14	51.761	0.010	0.010
WIFI 5G	5745	15.68	1.81	17.49	56.105	0.011	0.011

Simultaneous Transmission Result

Power Density1 / Limit	Power Density2 / Limit	Σ(Power Density / Limit)
0.000(BLE)	0.011(WIFI 5G)	0.011

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

---End of Test Report---