

MPE REPORT

Report No.: SRTC2023-9004(F)- 23062102 (I)
Product Name: WIFI/BT Module
Model Name: MWH623S
Applicant: Qingdao Intelligent & Precise Electronics Co., Ltd.
Manufacturer: Qingdao Intelligent & Precise Electronics Co., Ltd.
FCC ID: 2AJVQ-MWH623S

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

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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
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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

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

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

BT

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:	NA
Hardware Revision:	V1.00
Antenna type:	Ipex pulled-out
Antenna connector:	1.42dBi

BLE

Frequency Range:	2.402GHz~2.480GHz
Number of Channel:	40
Modulation Type:	GFSK
Equipment Class:	DTS
Channel Spacing:	2MHz
Data Rate:	LE 1Mbps/2Mbps/ Coded 125K/coded 500K
Power Supply:	DC supply
Software Revision:	V1.00
Hardware Revision:	NA
Antenna type:	Ipex pulled-out
Antenna connector:	1.42dBi

WIFI 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) 11ax (HE20/HE40)
Power Supply:	DC supply
Software Revision:	NA
Hardware Revision:	V1.00
Directional gain	3.93dBi(Uncorrelated)
IMEI:	NA
Antenna type:	lpex pulled-out
Antenna connector:	ANT0: 3.93dBi ANT1: 3.93dBi

WIFI 5G




Frequency Band(s):	U-NII-1:5150MHz-5250MHz UNII-2A 5250-5350MHz UNII-2C 5475-5725MHz U-NII-3:5725MHz-5850MHz	
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/HT40/VHT80) 802.11ax (HE20/HE40/HE80)	
Antenna Type:	HYWF-PIFA	
Antenna Gain:	ANT0: 5.73dBi ANT1: 5.73dBi	
Directional Gain:	5.73dBi(Uncorrelated)	
Power Supply:	DC supply	
Software Revision:	NA	
Hardware Revision:	V1.00	
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. Hui Wen 	Issued date: 2023/07/18

5 Test Results

	Mode	Maximum Average power(dBm)
BT&BLE	BT	12
	BLE	9
WLAN	WiFi2.4GHz	23
	WiFi5.2GHz	25
	WiFi5.3GHz	25
	WiFi5.6GHz	25
	WiFi5.8GHz	25

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 at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density/ Limit
BT	2441	12.00	1.42	13.42	21.979	0.004	1	0.004
BLE	2440	9.00	1.42	10.42	11.015	0.002	1	0.002
WIFI 2.4G	2437	23.00	3.93	26.93	493.174	0.098	1	0.098
WIFI 5.2G	5220	25.00	5.73	30.73	1183.042	0.235	1	0.235
WIFI 5.3G	5260	25.00	5.73	30.73	1183.042	0.235	1	0.235
WIFI 5.6G	5580	25.00	5.73	30.73	1183.042	0.235	1	0.235
WIFI 5.8G	5785	25.00	5.73	30.73	1183.042	0.235	1	0.235

---End of Test Report---