MPE REPORT

Report No.:	SRTC2023-9004(F)-23070307(I)
Product Name:	Bluetooth / Wi-Fi Module
Model Name:	MWH619B
Applicant:	Qingdao Intelligent & Precise Electronics Co., Ltd.
FCC ID:	2AJVQ-MWH619B

Reference Specification
FCC Part §1.1310

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, ShijingshanDistrict, Beijing,P.R.China

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1 GENERAL INFORMATION

1.1 Notes of the test report

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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)
Designation number:	CN1267
Registration number:	239125
Certificate Number:	5055.02
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
Contacted person:	Liu Jia
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Fax:	+86 10 57996388
Email:	liujiaf@srtc.org.cn

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

1.5 Test environment

Testing Start Date:	2023/7/4
Testing End Date:	2023/7/26

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient:	25	40

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 Final equipment build status

Frequency Range:	2.402GHz~2.480GHz
Mode:	BT/BLE
Antenna gain:	-2.21dBi
Hardware Version:	V1.0
Software Version:	NA
IMEI/SN:	No.1

Frequency Range:	2.412GHz~2.462GHz
Mode:	Wi-Fi
Antenna gain:	0.89dBi
Hardware Version:	V1.0
Software Version:	NA
IMEI/SN:	No.1

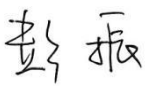
Frequency Range:	5.15GHz~5.25GHz 5.25GHz~5.35GHz 5.475GHz~5.725GHz 5.725GHz~5.85GHz
Mode:	Wi-Fi
Antenna gain:	1.69dBi
Hardware Version:	V1.0
Software Version:	NA
IMEI/SN:	No.1

3 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:	Checked by:
Mr. Peng Zhen 	Mr. Li Bin
Tested by:	Issued date:
Mr. Hui Wen	20230804

5 CALCULATION RESULT

5.1Maximum 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)	d(cm)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density/ Limit
BT	2441	7.50	-2.21	5.29	3.381	20.0	0.001	1	0.001
BLE	2440	7.50	-2.21	5.29	3.381	20.0	0.001	1	0.001
WIFI2.4G MIMO	2437	18.00	0.89	18.89	77.446	20.0	0.015	1	0.015
WIFI5.2G MIMO	5220	17.5	1.69	19.19	82.985	20.0	0.017	1	0.017
WIFI5.3G MIMO	5260	17.5	1.69	19.19	82.985	20.0	0.017	1	0.017
WIFI5.6G MIMO	5580	17.5	1.69	19.19	82.985	20.0	0.017	1	0.017
WIFI5.8G MIMO	5785	17.5	1.69	19.19	82.985	20.0	0.017	1	0.017

---End of Test Report---