RF EXPOSURE REPORT

For

Ringway Tech(Jiangsu) Co.,Ltd.

No. 101 West Hanjiang Road, Changzhou, Jiangsu, China

FCC ID:OCDAB5301A01

Report Type:	**Product Name:**
Original Report	Bluetooth module

Report Number:	RSHA240108001-00C
Report Date:	2024-04-05
Reviewed By:	Jenny Yang
Approves By:	Kyle Xu
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu Province, China Tel: +86-512-86175000 Fax: +86-512-88934268 www.baclcorp.com.cn

TABLE OF CONTENTS

REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RSHA240108001-00C	R1V1	2024-04-05	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Ringway Tech(Jiangsu) Co.,Ltd.
Product Name:	Bluetooth module
Tested Model:	AB5301A01
Power Supply:	DC 3~5V
Maximum Output Power:	Classic BT: GFSK: -1.23 dBm π/4-DQPSK: 0.96 dBm 8DPSK: 1.39 dBm BLE: -1.52 dBm
RF Function:	Classic BT; BLE (1Mbps)
Operating Band/Frequency:	Classic BT/BLE (1Mbps): 2402-2480 MHz
Channel Number:	Classic BT: 79 BLE: 40
Channel Separation:	Classic BT: 1 MHz BLE: 2 MHz
Modulation Type:	Classic BT: GFSK, π/4-DQPSK, 8DPSK BLE: GFSK
Antenna Type:	Classic BT/BLE (1Mbps): Ceramic Antenna
★Maximum Antenna Gain:	Classic BT/BLE (1Mbps): 2.5 dBi

Note: The maximum antenna gain was declared by the manufacturer.

All measurement and test data in this report was gathered from production sample serial number: RSHA240108001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-01-08.)

FCC §1.1310 & §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §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 level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (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;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Frequency Range (MHz)	Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
Classic BT	2402~2480	2.5	1.78	2.0	1.58	20	0.0006	1.0
BLE	2402~2480	2.5	1.78	-1.5	0.71	20	0.0003	1.0

Note:
1. For the above tune up power were declared by the manufacturer.
2. Classic BT and BLE cannot transmit simultaneously.

Result: The device meet FCC MPE at 20 cm distance.

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A - EUT EXTERNAL PHOTOGRAPHS and EXHIBIT B - EUT INTERNAL PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with "★".

2. The test data was only valid for the test sample(s).

3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

******* END OF REPORT *******