RF Exposure Evaluation Report

Report No.:	2505P37465EK
Applicant:	Huizhou speed wireless technology co.,ltd
Address:	No.138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province, China
Product Name:	WiFi+BT Module
Product Model:	WL00033
Multiple Models:	N/A
Trade Mark:	N/A
FCC ID:	2BBLK-WL6376B
Standards:	47 CFR §1.1307 KDB 447498 D04 Interim General RF Exposure Guidance v01
Test Result:	Complied
Report Date:	2025-03-05

Reviewed by: Abel chen

Abel Chen
Project Engineer

Approved by: Jacob Kong

Jacob Kong
Manager

Prepared by:

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

NVLAP TESTING NVLAP LAB CODE 600335-0

ilac-MRA

This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "★"

Announcement

1. This test report shall not be reproduced except in full, without the written approval of World Alliance Testing & Certification (Shenzhen) Co., Ltd

2. The results in this report apply only to the sample tested.

3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

4. The information marked "#" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

Revision History

Version No.	Issued Date	Description
00	*2025-03-05*	*Original*

Contents

1 General Information

1.1 Client Information

Applicant:	Huizhou speed wireless technology co.,ltd
Address:	No.138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province, China
Manufacturer:	Huizhou speed wireless technology co.,ltd
Address:	No.138 Huize Road, Hi-Tech Industrial Park of East River, Zhongkai Hi-tech District, Huizhou City, Guangdong Province, China

1.2 Product Description of EUT

The EUT is WiFi+BT Module that contains BT, BLE, 2.4G and 5G WLAN radios.

Sample Serial Number	BT/BLE: 2XWU-2(BT path 1), 2XWU-4(BT path 2), 2XWU-5 (BT path 3) WiFi: 2XWU-3(BT path 1) (assigned by WATC)
Sample Received Date	2025-01-22
Sample Status	Good Condition
Frequency Range	BT: 2402 - 2480MHz BLE: 2402 - 2480MHz 2.4G WLAN: 2412 - 2472MHz 5.2G WLAN: 5150 - 5250MHz 5.3G WLAN: 5250 - 5350MHz 5.6G WLAN: 5470 - 5725MHz 5.8G WLAN: 5725 - 5850MHz
Maximum Conducted Output Power	BT: 9.71dBm, BLE: 7.24dBm 2.4G WLAN: 24.09dBm 5.2G WLAN: 13.40dBm, 5.3G WLAN: 13.72dBm 5.6G WLAN: 14.39dBm, 5.8G WLAN: 19.00dBm
Modulation Technology	GFSK, π/4 DQPSK, 8DPSK, DSSS, OFDM,
Antenna Gain#	BT/BLE: 5.85dBi 2.4G WLAN: ANT 1: 2.16dBi, ANT 1: 1.23dBi 5G WLAN: ANT1: 3.57dBi, ANT2: 4.74dBi
Spatial Streams	BT/BLE: SISO (1TX, 1RX) 2.4G/5G WLAN: MIMO (2TX, 2RX)
Power Supply	DC 3.3V
Adapter Information	N/A
Modification	Sample No Modification by the test lab

1.3 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

2 RF Exposure Evaluation

2.1 Standard

According to §1.1307(b)(3)(i), For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right)$$ and f is in GHz;

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C)—Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3–1.34	1,920 R^2.
1.34–30	3,450 R^2/f^2.
30–300	3.83 R^2.
300–1,500	0.0128 R^2f.
1,500–100,000	19.2R^2.

According to §1.1307(b)(3)(ii), For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

2.2 Result

Single RF source:

Option C:

Radio	Frequency (MHz)	Distance (mm)	Exemption ERP (mW)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	ERP		Result Option C
						dBm	mW	
BT	2402-2480	200	768	10.0	5.85	13.70	23.44	exempt
BLE	2402-2480	200	768	7.5	5.85	11.20	13.18	exempt
2.4G WLAN	2412-2472	200	768	24.5	5.16	27.51	563.64	exempt
5.2G WLAN	5180-5240	200	768	14.0	7.74	19.59	90.99	exempt
5.3G WLAN	5260-5320	200	768	14.0	7.74	19.59	90.99	exempt
5.6G WLAN	5500-5700	200	768	14.5	7.74	20.09	102.09	exempt
5.8G WLAN	5745-5825	200	768	19.5	7.74	25.09	322.85	exempt

Note: The Maximum Conducted Power including Tune-up Tolerance was declared by manufacturer.

The BT/BLE/2.4G WLAN/5G WLAN cannot transmit at same time.

Result: The device compliance with the FCC MPE-base exemption limit at 20cm distance.

---End of Report---