

RF Exposure Evaluation Report

Product : BLE Dongle
Trade mark : Qbic
Model/Type reference : BDG-100, BDG-10X(where X = 0-9, a-z, A-Z, "-", or blank for marketing purpose)
Serial Number : N/A
Report Number : EED32P80651002
FCC ID : 2AF82-BDG100
Date of Issue : May 30, 2023
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
47 CFR Part 2.1093
447498 D04 Interim General RF Exposure Guidance v01
Test result : PASS

Prepared for:

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2 Version

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4 General Information

4.1 Client Information

Applicant:	Qbic Technology Co., Ltd.
Address of Applicant:	26 F.-12, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China
Manufacturer:	Qbic Technology Co., Ltd.
Address of Manufacturer:	26 F.-12, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China
Factory 1:	Jiangxi Xingtai Technology Inc.
Address of Factory 1:	Jizhou District industrial park, Ji'an, Jiangxi, China
Factory 2:	Qbic Technology Co., Ltd.
Address of Factory 2:	26 F.-10, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China
Factory 3:	Lih Rong Electronic Enterprise Co., Ltd.
Address of Factory 3:	No. 486, Sec. 1, Wanshou Rd., Guishan Dist., Taoyuan City 333026, Taiwan, China
Factory 4:	Lih Rong Electronic Enterprise Co., Ltd
Address of Factory 4:	No. 1, Gaoxia Rd., Zhongli Dist., Taoyuan City 320030, Taiwan, China

4.2 General Description of EUT

Product Name:	BLE Dongle
Model No.(EUT):	BDG-100, BDG-10X(where X = 0-9, a-z, A-Z, "-", or blank for marketing purpose)
Test Model No.:	BDG-100
Trade Mark:	Qbic

4.3 Product Specification subjective to this standard

Frequency Range:	BT Single mode, 2402MHz~2480MHz
Modulation Type:	GFSK
Test Power Grade:	Default
Test Software of EUT:	Direct Test Mode
Antenna Type:	External Antenna
Antenna Gain:	3dBi
Power Supply:	DC 5V
Max Conducted Peak Output Power:	6.48dBm
	The Max Conducted Peak Output Power data refer to the report EED32P80651001
Sample Received Date:	May 06, 2023
Sample tested Date:	May 06, 2023 to May 15, 2023
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model: BDG-100, BDG-10X(where X = 0-9, a-z, A-Z, "-", or blank for marketing purpose) Only the model BDG-100 was tested. They have same electrical, PCB and layout, only the model names are different for marketing requirements.	

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula

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

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

5.1.3 EUT RF Exposure Evaluation**For Stand alone:****For BLE**

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2480	6.48	3	9.48	7.33	5.408	3060	PASS

Note:

- ① EIRP=conducted power + antenna gain;
- ② ERP=EIRP-2.15
- ③ Only the worst case data was recorded in the report.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***