

RF Exposure Evaluation Report

Product : Merlyn USB Dongle
Trade mark : N/A
Model/Type reference : MUDG1, MUDG2
Serial Number : N/A
Report Number : EED32P81691802
FCC ID : 2AYDX-MUDG1
Date of Issue : Nov. 15, 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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Prepared by:

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1 Version

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3 General Information

3.1 Client Information

Applicant:	Merlyn Mind, Inc.
Address of Applicant:	8 West 40th Street, Floor 20, New York, NY 10018, USA
Manufacturer:	Shenzhen C&D Electronics Co.,Ltd
Address of Manufacturer:	9/F, Block A Building 9, Baoneng S&T Park, Qing Xiang Rd., Longhua, Shenzhen 518110,China
Factory:	Huizhou C&D Industry Co.,Ltd.
Address of Factory:	C&D Industrial Park, Liantangmian Village, Sanhe Street, Huiyang District, Huizhou, Guangdong, China

3.2 General Description of EUT

Product Name:	Merlyn USB Dongle	
Model No.(EUT):	MUDG1, MUDG2	
Test Model No.:	MUDG1	
Trade Mark:	N/A	
Device type:	Portable	
Power Supply:	USB port:	DC 5V
Test Voltage:	DC 5.0V	
Sample Received Date:	Oct. 25, 2023	
Sample tested Date:	Oct. 25, 2023 to Nov. 03, 2023	
Remark:	<p>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.</p> <p>Model: MUDG1, MUDG2</p> <p>Only the model MUDG1 was tested. Their electrical circuit design, layout, components used and internal wiring are identical. Only the color of the appearance is different.</p>	

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz	
Modulation Type:	GFSK	
Transfer Rate:	<input checked="" type="checkbox"/> 1Mbps <input checked="" type="checkbox"/> 2Mbps	
Number of Channel:	40	
Antenna Type:	PCB Antenna	
Antenna Gain:	2.12dBi	
Max Conducted Peak Output Power:	-7.25dBm	
	The Max Conducted Peak Output Power data refer to the report EED32P81691801	

3.4 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

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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_{20cm} 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.

4.1.2 Test Procedure

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

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

For BLE

Frequency (MHz)	Separation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2402	0.5	-7.25	2.12	-5.03	-7.18	0.191	2.788	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 ***