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:

Merlyn Mind, Inc.
8 West 40th Street, Floor 20, New York, NY 10018, USA

Prepared by:

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Approved by:	Aaron Ma	Date:	Nov. 15, 2023
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1 Version

Version No.	Date	Description
00	Nov. 15, 2023	Original

2 Contents

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: 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: MUDG1, MUDG2 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.		

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	☒ 1Mbps ☒ 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 Pth (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). Pth is given by Formula

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

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 ERP20cm is per Formula (B.1).

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

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：

①EIRP=conducted power+antenna gain；

②ERP=EIRP-2.15

③Only the worst case data was recorded in the report.

*** End of Report ***