RF Exposure Evaluation Report

Product	:	H2D
Trade mark	:	bambulab
Model/Type reference	:	PF003-D, PF003-M
Serial Number	:	N/A
Report Number	:	EED32Q81556404
FCC ID	:	2A6J8-PF003D
Date of Issue	:	Mar. 13, 2025
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 1.1310 47 CFR Part 2.1091 47 CFR Part 2.1093 KDB 447498 D04 Interim General RF Exposure Guidance v01
Test result	:	PASS

Prepared for:

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1 Version

Version No.	Date	Description
00	Mar. 13, 2025	Original

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen Tuozhu Technology Co., Ltd.
Address of Applicant:	Room 201, Building A, No. 1 First Qianwan Road, Qianhai Shengang Cooperation Zone, Shenzhen
Manufacturer:	Shenzhen Tuozhu Technology Co., Ltd.
Address of Manufacturer:	Room 201, Building A, No. 1 First Qianwan Road, Qianhai Shengang Cooperation Zone, Shenzhen
Factory:	Shenzhen Zhuhe Technology Co.,Ltd.
Address of Factory:	Building M, No.28 Dayang Road, Rentian Community, Fuhai Street, Bao'an District, Shenzhen City, Guangdong Province

3.2 General Description of EUT

Product Name:	H2D
Model No. (EUT):	PF003-D, PF003-M
Test Model No.:	PF003-D, PF003-M
Trade Mark:	bambulab

3.3 Product Specification subjective to this standard

Frequency Range:	2.4G Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5G Wi-Fi: U-NII-1: 5150-5250MHz U-NII-2A: 5250-5350MHz U-NII-2C:5500-5700MHz U-NII-3:5745-5825MHz
Modulation Type:	2.4G Wi-Fi: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40): OFDM (64QAM,16QAM, QPSK, BPSK) 5G Wi-Fi: IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Test Power Grade:	Default
Test Software of EUT:	ADB
Antenna Type:	Internal Antenna
Antenna Gain:	2.4G Wi-Fi: 3.1dBi 5G Wi-Fi: U-NII-1: 5150-5250MHz 0.3dBi U-NII-2A: 5250-5350MHz 0.82dBi U-NII-2C:5500-5700MHz -0.5dBi U-NII-3:5745-5825MHz -1.6dBi
Power Supply:	AC 120V, 60Hz
Sample Received Date:	Nov. 22, 2024
Sample tested Date:	Nov. 22, 2024 to Dec. 30, 2024
Remark: Model No.: PF003-D, PF003-M	

Both models have been tested, but reflect the worst model data (PF003-D), Product H2D (product name)with its model PF003-D (model no.) is identical with the model PF003-M (model no.) on circuitry design, PCB layout, electrical components used, internal wiring of main frame parts, and only different are PF003-M contains below accessories more than PF003-D:

1. One laser module (Bambu Lab Laser Module 10W/ SL001, Bambu Lab Laser Module 40W/ SL002);
2. One cutting module (Bambu Lab Cutting Module/ SC001);
3. One pump module (Builtin Air Pump/ FAC124);
4. One emergency stop switch;
5. Different enclosure materials, F003-M uses laser protection material while PF003-D uses transparent glass.

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:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	16.61	3.10	17.56	57.0164	3060	0.0186	Pass

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@5GHz	20	18.47	0.30	16.62	45.9198	3060	0.0150	Pass

Note：

①EIRP=conducted power+antenna gain；

②ERP=EIRP-2.15;

③EIRP(dBm) = Field strength of the fundamental signal(dBuV/m@3m) - 95.23;

④ERP(mW) = 10^(ERP (dBm)/10);

⑤The estimation distance is 20cm;

⑥The test data please refer to the report of EED32Q81556401, EED32Q81556402 and only the worst case data was recorded in the report.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;

2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;

3. The result(s) shown in this report refer(s) only to the sample(s) tested;

4. Unless otherwise stated,the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;

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*** End of Report ***