

RF Exposure Evaluation Report

Product : Photo Printer
Trade mark : rock space
Model/Type reference : DHP511
Serial Number : N/A
Report Number : EED32O81359001
FCC ID : 2AUA9-RQZY014
Date of Issue : Oct. 19, 2022
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

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104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng
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Check No.: 5407310822



2 Version

Version No.	Date	Description
00	Oct. 19, 2022	Original

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4 General Information

4.1 Client Information

Applicant:	Shenzhen Renqing Excellent Technology Co., Ltd.
Address of Applicant:	104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen, China
Manufacturer:	Shenzhen Renqing Excellent Technology Co., Ltd.
Address of Manufacturer:	104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen, China
Factory:	Dongguan Kaifa Technology Co., Ltd
Address of Factory:	Kaifa Park of CEC Industry Base, No.2 Junma road, Chigang Community, Humen town, Dongguan City, Guangdong Province, China

4.2 General Description of EUT

Product Name:	Photo Printer
Model No.(EUT):	DHP511
Trade Mark:	rock space

4.3 Product Specification subjective to this standard

Frequency Range:	BLE/BT: 2402MHz~2480MHz 2.4G WIFI: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5G WIFI: U-NII-1: 5180-5240MHz U-NII-3: 5745-5825MHz	
Modulation Type:	BLE: GFSK, BT: GFSK, $\pi/4$ DQPSK, 8DPSK 2.4G WIFI: 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 WIFI: IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM)	
Test Software of EUT:	dbgmon	
Test Power Grade:	Default	
Antenna Type:	PCB Antenna	
Antenna Gain:	BLE/BT/2.4GWIFI: -7.01dBi; 5G WIFI: 0.34 dBi	
Power Supply:	Adapter:	Model:DSA-38PFE-24FUS 240160 Input:100-240V~50/60Hz 1.0A Output:24V --- 1.6A 38.4W
Sample Received Date:	Aug. 31, 2022	
Sample tested Date:	Aug. 31, 2022 to Sep. 20, 2022	
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.	

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 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

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

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 ERP20cm 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

①For BLE:

Frequency (MHz)	Max. Conducted Output power (dBm)	Tune up tolerance (dBm)	Max. tune up power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2402	-0.21	0.00±1	1.00	-7.01	1.00	-1.15	0.767	≤3060	PASS

②For BT:

Frequency (MHz)	Max. Conducted Output power (dBm)	Tune up tolerance (dBm)	Max. tune up power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2402	6.07	5.00±1.5	6.50	-7.01	6.50	4.35	2.723	≤3060	PASS

③For 2.4GHz Wi-Fi:

Frequency (MHz)	Max. Conducted Output power (dBm)	Tune up tolerance (dBm)	Max. tune up power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2462	17.75	16.00±2	18.00	-7.01	18.00	15.85	38.459	≤3060	PASS

④For 5GHz Wi-Fi:**5GWIFI A mode is worst:**

Frequency (MHz)	Max. Conducted Output power (dBm)	Tune up tolerance (dBm)	Max. tune up power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
5200	11.73	11.00±1	12.00	0.34	12.34	10.19	10.447	≤3060	PASS

Note:

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

For BT and WIFI

BT and WIFI can not transmit simultaneously.

Note:

- 1.Only the worst case 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 ***