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RF Exposure Evaluation Report

Report No.: CQASZ20230400482E-02

Applicant: Shenzhen Piocreat 3d Technology Co., Ltd.

Address of Applicant: Room 1308, Building No. 3, Jincheng Industrial Area, Tongsheng Community,

Dalang Street, Longhua District, Shenzhen, China, 518109

Equipment Under Test (EUT):

EUT Name: 3D Printer

Model No.: D133,D136,D150,D190

Test Model No.: D136
Brand Name: N/A

 FCC ID:
 2A2DOD158D160

 Standards:
 47 CFR Part 1.1307

47 CFR Part 1.1310

447498 D04 Interim General RF Exposure Guidance v01

Date of Receipt: 2023-04-06

Date of Test: 2023-04-06 to 2023-04-23

Date of Issue: 2023-05-05

Test Result: PASS*

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

(Lewis Zhou)

Reviewed By:

(Timo Lei)

Approved By:

(Jack Ai)



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 CQA, this report can't be reproduced except in full.



Report No.: CQASZ20230400482E-02

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date	
CQASZ20230400482E-02 Rev.0		Initial report	2023-05-05	



Report No.: CQASZ20230400482E-02

2 Contents

	Page
1 VERSION	2
2 CONTENTS	
	3
3 GENERAL INFORMATION	
3.1 CLIENT INFORMATION	4
3.2 GENERAL DESCRIPTION OF EUT	4
3.3 GENERAL DESCRIPTION OF 2.4G WIFI CLASSIC	5
4 MPE EVALUATION	6
4.1 RF Exposure Compliance Requirement	6
4.1.1 Limits	6
4.1.1 Limits	6
A 1 3 FUT RE Exposure	7



Report No.: CQASZ20230400482E-02

3 General Information

3.1 Client Information

Applicant:	Shenzhen Piocreat 3d Technology Co., Ltd.		
	Room 1308, Building No. 3, Jincheng Industrial Area, Tongsheng		
Address of Applicant:	Community, Dalang Street, Longhua District, Shenzhen, China, 518109		
Manufacturer:	Shenzhen Piocreat 3d Technology Co., Ltd.		
Address of Manufacturer:	Room 1308, Building No. 3, Jincheng Industrial Area, Tongsheng		
	Community, Dalang Street, Longhua District, Shenzhen, China, 518109		
Factory:	Shenzhen Piocreat 3d Technology Co., Ltd.		
Address of Factory:	Room 1308, Building No. 3, Jincheng Industrial Area, Tongsheng		
	Community, Dalang Street, Longhua District, Shenzhen, China, 518109		

3.2 General Description of EUT

Product Name:	3D Printer		
Model No.:	D158, D160		
Test Model No.:	D158		
Trade Mark:	N/A		
Software Version:	V1.0		
Hardware Version:	V1.0		
EUT Power Supply:	Model No.:K65S240250E1		
	Input:100-240V~50/60Hz 1.8A		
	Output:24V 2.5A 60W		



Report No.: CQASZ20230400482E-02

3.3 General Description of 2.4G WIFI Classic					
Operation Frequency:	2412MHz~2462MHz				
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK)				
	IEEE for 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)				
	IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK, BPSK)				
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels				
Channel Separation:	5MHz				
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps				
	IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps				
	IEEE for 802.11n(HT20):				
	6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps				
Sample Type:	⊠ Mobile ☐ Portable				
Antenna Type:	FPC antenna				
Antenna Gain:	2.24dBi				

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.



Report No.: CQASZ20230400482E-02

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP20cm inFormula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

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

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ /4 or if the antenna gain is less than that of a half-wave Dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

4.1.2 Test Procedure

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



Report No.: CQASZ20230400482E-02

4.1.3 EUT RF Exposure

1) For 2.4G WIFI Classic

Measurement Data

Measurement Data							
11B mode							
Test channel	EIRP	ERP	Tune up tolerance	Maximum tune-up Power			
	(dBm)	(dBm)	(dBm)	(dBm)	(mW)		
Lowest(2412MHz)	8.33	6.18	6.0±1	7.0	5.01		
Middle(2437MHz)	9.83	7.68	7.5±1	8.5	7.08		
Highest(2462MHz)	9.88	7.73	7.5±1	8.5	7.08		
11G mode							
Test channel	EIRP	ERP	Tune up tolerance	Maximum tune-up Power			
	(dBm)	(dBm)	(dBm)	(dBm)	(mW)		
Lowest(2412MHz)	3.8	1.65	1.5±1	2.5	1.78		
Middle(2437MHz)	5.91	3.76	3.5±1	4.5	2.82		
Highest(2462MHz)	5.88	3.73	3.5±1	4.5	2.82		
		11N20	mode				
Test channel	EIRP	ERP	Tune up tolerance	Maximum tune-up Power			
	(dBm)	(dBm)	(dBm)	(dBm)	(mW)		
Lowest(2412MHz)	3.75	1.6	1.5±1	2.5	1.78		
Middle(2437MHz)	5.35	3.2	3.0±1	4.0	2.51		
Highest(2462MHz)	5.89	3.74	3.5±1	4.5	2.82		

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20230400482E-01 for EUT test Max Conducted AV Output Power value. 2) EUT's module is more than 20cm away from the human body.

*** END OF REPORT ***