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RF Exposure Evaluation Report

Report No.: CQASZ20260701422E-03
Applicant: Shenzhen Creality 3D Technology Co.,Ltd.
Address of Applicant: 18F, JinXiuHongDu Building, Meilong Blvd., Longhua Dist, Shenzhen , China.
Equipment Under Test (EUT):
EUT Name: 3D Printer
Model No.: HALOT-X1 Max , HALOT-X1 Max Combo
Test Model No.: HALOT-X1 Max
Brand Name: N/A
FCC ID: 2AXH6-X1MAX
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2026-07-03
Date of Test: 2026-07-03 to 2026-07-24
Date of Issue: 2026-9-17
Test Result: PASS*

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

Tested By: Azir Wang
(Azir Wang)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20260701422E-03	Rev.01	Initial report	2026-9-17

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Creality 3D Technology Co.,Ltd.
Address of Applicant:	18F, JinXiuHongDu Building, Meilong Blvd., Longhua Dist, Shenzhen , China.
Manufacturer:	Shenzhen PioCreat 3d Technology Co., Ltd.
Address of Manufacturer:	3rd Floor, Building 1, No. 156 Huawang Road, Langkou Community, Dalang Street, Longhua District, Shenzhen, China
Factory:	Shenzhen PioCreat 3d Technology Co., Ltd.
Address of Factory:	3rd Floor, Building 1, No. 156 Huawang Road, Langkou Community, Dalang Street, Longhua District, Shenzhen, China

3.2 General Description of EUT

Product Name:	3D Printer
Model No.:	HALOT-X1 Max , HALOT-X1 Max Combo
Test Model No.:	HALOT-X1 Max
Trade Mark:	N/A
Software Version:	V2.0
Hardware Version:	V1.3
EUT Power Supply:	AC100-120V~,200-240V.50-60Hz, 1350W

3.3 General Description of 2.4G WIFI Classic

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Type of Modulation:	802.11b: DSSS(CCK/QPSK/BPSK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM) 802.11n : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Transfer Rate:	802.11b: 1M/2M/5.5M/11M bps 802.11g: 6M/9M/12M/18M/24M/36M/48M/54M bps 802.11n: 7.2M/14.4M/21.7M/28.9M/43.3M/57.8M/65M/72.2M bps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	FPC antenna
Antenna Gain:	4.09dBi

3.4 General Description of 5G WIFI Classic

Operation Frequency:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250 MHz IEEE802.11n/ac(40M): 5150MHz ~5250 MHz IEEE802.11n/ac(80M): 5150MHz ~5250 MHz
Channel Numbers:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11n/ac(80M): 5150MHz ~5250MHz/ 1 channel
Type of Modulation:	OFDM
Sample Type:	☒ Mobile ☐ Portable
Test Software of EUT:	CMD
Antenna Type:	FPC antenna
Antenna gain:	4.09dBi
Cable loss:	1dB

Note:

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

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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

1) For 2.4G WIFI

Antenna Gain: 1.96dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.57 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11B mode				
Test channel	AV Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	13.73	14.0 ± 1	15.0	31.62
Middle(2437MHz)	14.47	14.5 ± 1	15.5	35.48
Highest(2462MHz)	13.68	14.0 ± 1	15.0	31.62

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
35.48	1.96	0.0110848323	1.0	PASS

Note: 1) Refer to report No. CQASZ20260701422E-01 for EUT test Max Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (56.23 * 1.57) / (4 * 3.1416 * 20^2) = 0.004686195$

4) For 5G WIFI Classic

Antenna Gain: 4.09dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.56 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11N20SISO mode				
Test channel	AV Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(5260MHz)	6.92	7.0±1	8.0	6.31
Middle(5280MHz)	6.13	6.0±1	7.0	5.04
Highest(5320MHz)	5.35	5.5±1	6.5	4.47

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
6.31	4.09	0.0032190604	1.0	PASS

Note: 1) Refer to report No. CQASZ20260701422E-02 for EUT test Max Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (6.31 * 2.56) / (4 * 3.1416 * 20^2) = 0.0032190604$

*** END OF REPORT ***