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# RF Exposure Evaluation Report

**Report No. :** CQASZ20210600035EX-02

**Applicant:** Dzine Products, LLC

**Address of Applicant:** 134 W Lake Street Suite 208, Addison, IL 60101

**Manufacturer:** Dzine Products, LLC

**Address of Manufacturer:** 134 W Lake Street Suite 208, Addison, IL 60101

**Equipment Under Test (EUT):**

**Product:** PUCK wireless charger

**Test Model No.:** TF-W01

**All Model No.:** TF-W01, EE-Q1, OR-W01, W02, qi003

**Brand Name:** N/A

**FCC ID:** 2AZ7I-TF-W01

**Standards:** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB 680106 D01 RF Exposure wireless charging base App V03

**Date of Test:** May 31, 2021 to Jun. 10, 2020

**Date of Issue:** Jun. 10, 2020

**Test Result :** PASS

**Tested By:** Lewis Zhou  
( Lewis Zhou )

**Reviewed By:** Timo Lei  
( Timo Lei )

**Approved By:** Sheek Luo  
( Sheek Luo )



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210400024EX-02	Rev.01	Initial report	Jun. 10, 2020

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### 3 General Information

#### 3.1 Client Information

Applicant:	Dzine Products, LLC
Address of Applicant:	134 W Lake Street Suite 208, Addison, IL 60101
Manufacturer:	Dzine Products, LLC
Address of Manufacturer:	134 W Lake Street Suite 208, Addison, IL 60101

#### 3.2 General Description of EUT

Product Name:	PUCK wireless charger
All Model No.:	TF-W01, EE-Q1, OR-W01, W02, qi003
Test Model No.:	TF-W01
Trade Mark:	N/A
Hardware Version:	V1.0
Operation Frequency:	117.8kHz
Modulation Type:	MSK
Antenna Type:	Loop coil antenna
Antenna Gain:	0 dBi
Wireless charger Information:	Input: 5V/2A 9V/2A 12V/1.5A Output: 20W max

Note: For more details features description, please refer to the manufacture's specifications or the usermanual.

### 3.3 Test environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	53 % RH
Atmospheric Pressure:	1010mbar
Test Mode:	
Mode 1	Wireless charging Mode at 5V 2A (Full load)
Mode 2	Wireless charging Mode at 5V 2A (Half load)
Mode 3	Wireless charging Mode at 5V 2A (Null load)
Mode 4	Wireless charging Mode at 9V 2A (Full load)
Mode 5	Wireless charging Mode at 9V 2A (Half load)
Mode 6	Wireless charging Mode at 9V 2A (Null load)
Mode 7	Wireless charging Mode at 12V 1.5A (Full load)
Mode 8	Wireless charging Mode at 12V 1.5A (Half load)
Mode 9	Wireless charging Mode at 12V 1.5A (Null load)
Note: The mode 7 was the worst case and only the data of the worst case record in this report	

### 3.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	emark	FCC certification
Adapter	SHENZHEN FUJIA APPLIANCE CO.,LTD	FJ-SW1260502500UN	Provide by laboratory	sdoc
Wireless electronic Load	-	-	Provide by laboratory	-

### 3.5 Test location

Shenzhen Huaxia Testing Technology Co., Ltd,

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

### 3.6 Test Facility

- **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

- **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

### 3.7 Equipment list

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
Broadband Field Meter	Narda Safety Test Solutions GmbH	NBM-520	SB9873	2020/10/18	2021/10/17
Magnetic field probe	HIOKI	3470	SB9058/04	2020/12/14	2021/12/13

## 4 RF Exposure 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 nvironment 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.69/f	*(900/f <sup>2</sup> )	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

Note 1: f = frequency in MHz ; \*Plane-wave equivalent power density

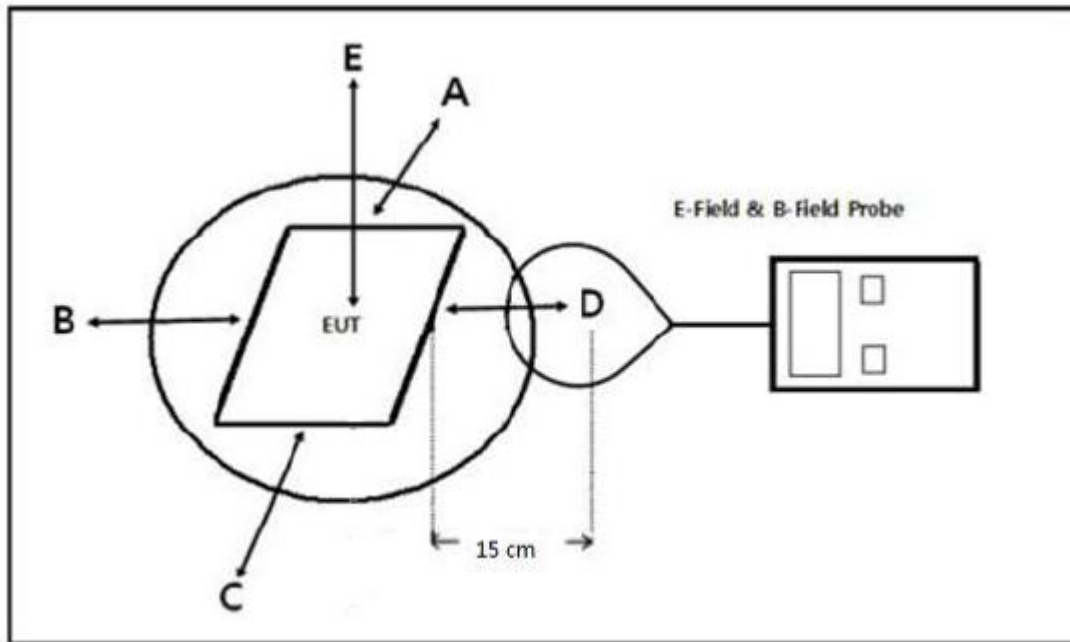
Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03 Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit .

#### 4.1.2 Test Procedure

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 15cm(Edge). E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 20 cm(Top) and 15cm(Edge) measured from the center of the probe(s) to the edge of the device.

#### 4.1.3 Test Setup



Note: Position A: Front of EUT; Position B: Left of EUT; Position C: back of EUT; Position D: Right of EUT; Position E: Top of EUT(20 cm measure distance);

#### 4.1.4 Test Results

The EUT does comply with item 5 KDB680106 D01 v03.

(1) Power transfer frequency is less than 1 MHz.

(Conform)

(2) Output power from each primary coil is less than or equal to 15 watts.

(Conform)

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.

(Conform)

(4) Client device is placed directly in contact with the transmitter.

(Conform)

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

(Conform)

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

(Conform)

Test condition: Mode 7

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
117.8kHz	1.86	2.03	1.68	2.28	1.33	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
117.8kHz	0.88	1.02	0.45	0.84	0.51	1.63

## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Test Model No.: TF-W01



----END OF REPORT----