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Report Template Version: V05

Report Template Revision Date: 2021-11-03

RF Exposure Evaluation Report

Report No.: CQASZ20240500756E-02
Applicant: Invisible Technology Innovations LTD
Address of Applicant: 245 E Main Street #113, Alhambra CA, 91801
Equipment Under Test (EUT):
Product: MagFree Transform 3-in-1 Fast Wireless Charger
Model No.: MGF7, MGF7A, MGF7B, MGF7C, MGF7W, DLK3546QB, DLK3546QW
Test Model No.: MGF7
Brand Name: INVZI
FCC ID: 2A62V-MGF7
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB 680106 D01 RF Exposure Wireless Charging Base App v04r01
Date of Receipt: 2024-5-6
Date of Test: 2024-5-6 to 2024-5-21
Date of Issue: 2024-5-24
Test Result : **PASS***

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

Tested By:

(Joe Wang)

Reviewed By:

(Timo Lei)

Approved By:

(Alex Wang)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20240500756E-02	Rev.01	Initial report	2024-5-24

2 Contents

	Page
1 VERSION	2
2 CONTENTS	3
.....	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION	4
3.2 GENERAL DESCRIPTION OF EUT	4
3.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	4
3.4 TEST ENVIRONMENT	5
3.5 DESCRIPTION OF SUPPORT UNITS	5
3.6 TEST LOCATION	6
3.7 TEST FACILITY	6
3.8 EQUIPMENT LIST	6
4 RF EXPOSURE EVALUATION	7
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT	7
4.1.1 Limits	7
4.1.2 Test Procedure	7
4.1.3 Test Setup	8
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	10

3 General Information

3.1 Client Information

Applicant:	Invisible Technology Innovations LTD
Address of Applicant:	245 E Main Street #113, Alhambra CA, 91801
Manufacturer:	Invisible Technology Innovations LTD
Address of Manufacturer:	245 E Main Street #113, Alhambra CA, 91801
Factory:	Shenzhen Jinzhizhuo Technology Co., Ltd
Address of Factory:	6th floor, Building B11, Hengfeng Industrial City, Hangcheng Street, Bao'an District, Shenzhen

3.2 General Description of EUT

Product Name:	MagFree Transform 3-in-1 Fast Wireless Charger
Model No.:	MGF7, MGF7A, MGF7B, MGF7C, MGF7W, DLK3546QB, DLK3546QW
Test Model No.:	MGF7
Brand Name:	INVZI
Software Version:	V01
Hardware Version:	V01
EUT Power Supply:	DC 9V/3A 12V/2A

3.3 Product Specification subjective to this standard

Equipment Category:	Non-ISM frequency
Operation Frequency range:	115kHz~205kHz, 315kHz~330kHz
Modulation Type:	ASK
Antenna Type:	Induction coil
Antenna Gain:	0dBi
Power:	Output: 23W(MAX)

Note:

1. In section 15.31(m), regards to the operating frequency range less 1 MHz.

3.4 Test Environment

Operating Environment:	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	1009 mbar
Test Mode:	
Mode a:	Keep the EUT Wireless Out Put for Wireless charge load 1 5W (MAX)
Mode b:	Keep the EUT Wireless Out Put for AirPods 3W (MAX)
Mode c:	Keep the EUT Wireless Out Put for Wireless charge load 2 5W
Mode d:	Keep the EUT Wireless Out Put for Wireless charge load 2 7.5W
Mode e:	Keep the EUT Wireless Out Put for Wireless charge load 2 10W
Mode f:	Keep the EUT Wireless Out Put for Wireless charge load 2 15W (MAX)
Mode g:	Keep the EUT Wireless Out Put for Wireless charge load 1+for Airpods+Wireless charge load 2 23W (Total MAX)
Note: The above test modes all include full load,empty load,and half load, The worst-case state reflected in this report is the fully loaded state	

3.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Adapter	/	LPL- C010050200Z	/	CQA
Air Pods	Apple	/	/	CQA
Wireless charge load	/	/	/	CQA

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

3.6 Test Location

Shenzhen Huaxia Testing Technology Co., Ltd.

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

3.7 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

3.8 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	2023/9/8	2024/9/7
Magnetic field probe	HIOKI	3470	SB9058/04	2023/9/8	2024/9/7
E-field probe	Narda	EF0391	SB9059	2023/9/8	2024/9/7

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 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

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 v04

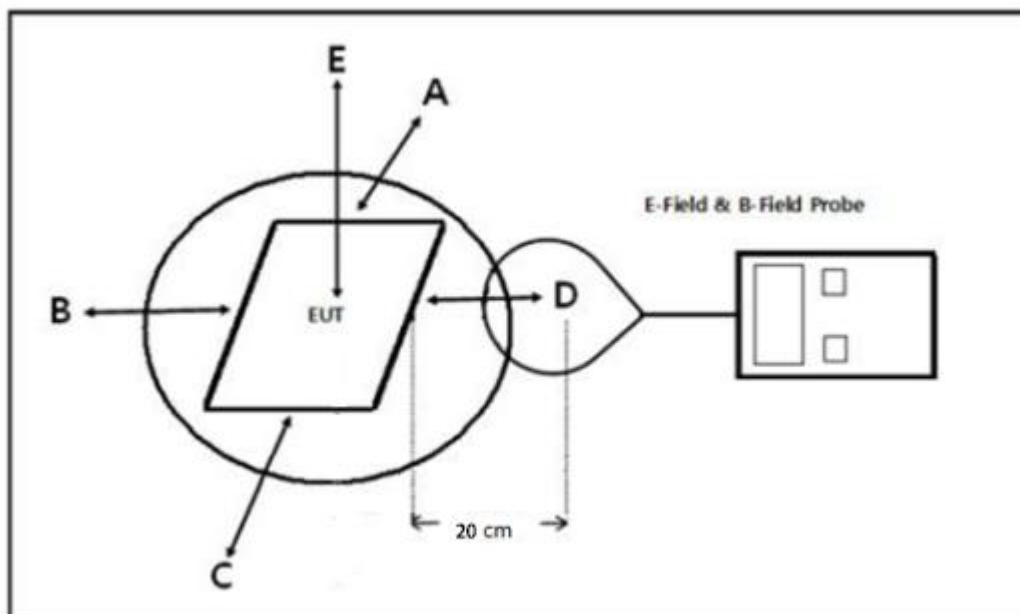
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

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);

Test condition: Mode f

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)
123.33kHz	3.51	2.83	2.85	1.61	2.86	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)
123.33kHz	0.35	0.31	0.22	0.31	0.23	1.63

Test condition: Mode g

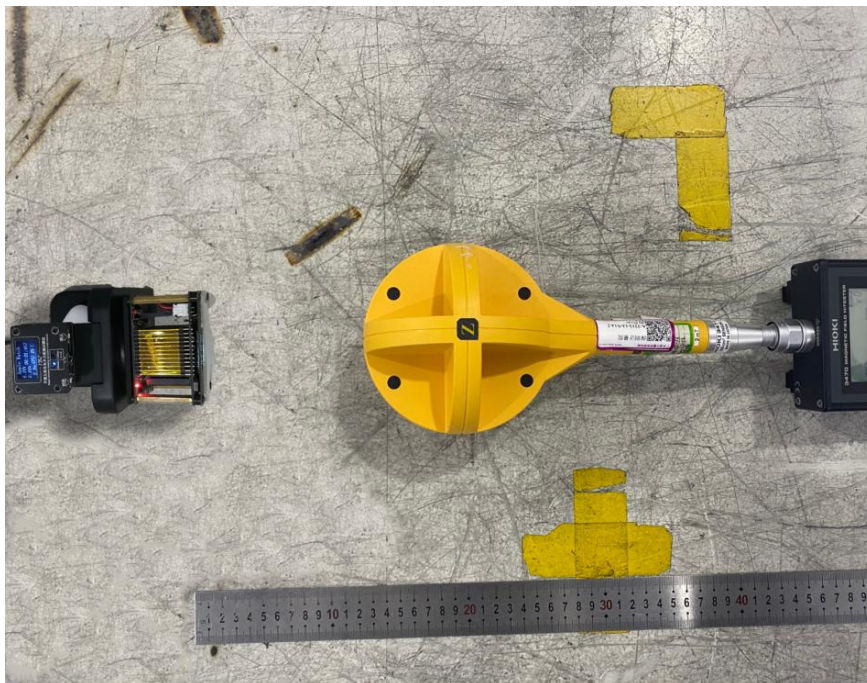
E-field strength test result:

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)
321.80kHz	3.07	2.34	1.70	1.23	2.12	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)
321.80kHz	0.23	0.22	0.25	0.18	0.17	1.63

APPENDIX A: PHOTOGRAPHS OF TEST SETUP



*** END OF REROPT ***