



FCC TEST REPORT

FCC ID: 2A5EV-FW068

Maximum Permissible Exposure (MPE)

Product Name : 3 in 1 Wireless Charger
Model Name : FW068
Additional Model : refer to page 8
Brand Name : N/A
Report No. : PTC22052502201E-FC02

Prepared for

Shenzhen Finemold Technologies CO.,LTD
No. 85, Rentian Industrial Zone, Fuhai Street, Baoan District, Shenzhen City, Guangdong
Province

Prepared by

Precise Testing & Certification Co., Ltd
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China



1TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Finemold Technologies CO.,LTD
Address : No. 85, Rentian Industrial Zone, Fuhai Street, Baoan District,
Shenzhen City, Guangdong Province
Manufacture's name : Shenzhen Finemold Technologies CO.,LTD
Address : No. 85, Rentian Industrial Zone, Fuhai Street, Baoan District,
Shenzhen City, Guangdong Province
Product name : 3 in 1 Wireless Charger
Model name : FW068
Additional Model : refer to page 8
Standards : FCC CRF 47 PART 1,§1.1310
Test procedure : KDB 680106 v03 r01
Test Date : May. 30, 2022 to Jun. 10, 2022
Date of Issue : Jun. 10, 2022
Test Result : Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink that reads "Simon Pu".

Simon Pu / Engineer

Technical Manager:

A handwritten signature in black ink that reads "Ronnie Liu".

Ronnie Liu / Manager



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2 Test Summary

Test	Test Requirement	Test Method	Limit / Severity	Result
RF Exposure	FCC CRF 47 PART 1, §1.1310	KDB 680106 v03 r01	1.1310	PASS

Remark:

N/A: Not Applicable

RF: In this whole report RF means Radio Frequency.

A.M. Amplitude Modulation.

P.M. Pulse Modulation.



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2.1 Instrument list

Name of Equipment	Manufacturer	Model	Characteristics	Calibration Due	interval time
Exposure Level Tester	Narda	ELT-400	Aug. 21, 2021	Aug. 20, 2022	1 year
H-Field probe	Narda	HF-3061	Aug. 21, 2021	Aug. 20, 2022	1 year
E-Field probe	Narda	EF0691	Aug. 21, 2021	Aug. 20, 2022	1 year



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2.2 Support Units

Equipment	Model No.	Series No.
Adapter	XY18U30-QC1	N/A
Load	Phone	N/A
Load	iWatch	N/A
Load	Airpods	N/A



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3 TEST FACILITY

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

A2LA Certificate No.: 4408.01

FCC Registration Number: 790290

FCC Designation Number: CN1219

IC Registration Number: 12191A

CAB identifier: CN0080



4 General Information

4.1 General Description of E.U.T.

Product Name	:	3 in 1 Wireless Charger
Model Name	:	FW068
Operating frequency	:	110 ~ 205kHz
Antenna Type	:	Coil Antenna
Power supply	:	Input: DC 9V/2A,12V/2A Adapter: XY18U30-QC1 Input: AC 100-240V~50/60Hz 0.6A Output: DC 5V $\overline{\text{---}}$ 3A DC 9V $\overline{\text{---}}$ 2A DC 12V $\overline{\text{---}}$ 1.5A
Hardware Version	:	N/A
Software Version	:	N/A

Additional Model:

FW001,FW002,FW003,FW004,FW005,FW006,FW007,FW008,FW009,FW010,FW011,FW012, FW013, FW014,FW015,FW016,FW017,FW018,FW019,FW020,FW021,FW022,FW023,FW024,FW025,FW026, FW027,FW028,FW029,FW030,FW031,FW032,FW033,FW034,FW035,FW036,FW037,FW038,FW039, FW040,FW041,FW042,FW043,FW044,FW045,FW046,FW047,FW048,FW049,FW050,FW051,FW052, FW053,FW054,FW055,FW056,FW057,FW058,FW059,FW060,FW061,FW062,FW063,FW064,FW065, FW066,FW067,FW069,FW070,FW071,FW072,FW073,FW074,FW075,FW076,FW077,FW078,FW079, FW080,FW081,FW082,FW083,FW084,FW085,FW086,FW087,FW088,FW089,FW090,FW091,FW092, FW093,FW094,FW095,FW096,FW097,FW098,FW099,FW100,FW101,FW102,FW103,FW104,FW105, FW106,FW107,FW108,FW109,FW110,FW111,FW112,FW113,FW114,FW115,FW116,FW117,FW118, FW119,FW120,FW121,FW122,FW123,FW124,FW125,FW126,FW127,FW128,FW129,FW130,FW131, FW132,FW133,FW134,FW135,FW136,FW137,FW138,FW139,FW140,FW141,FW142,FW143,FW144, FW145,FW146,FW147,FW148,FW149,FW150,FW151,FW152,FW153,FW154,FW155,FW156,FW157, FW158,FW159,FW160,FW161,FW162,FW163,FW164,FW165,FW166,FW167,FW168,FW169,FW170, FW171,FW172,FW173,FW174,FW175,FW176,FW177,FW178,FW179,FW180,FW181,FW182,FW183, FW184,FW185,FW186,FW187,FW188,FW189,FW190,FW191,FW192,FW193,W194,FW195,FW196, FW197,FW198,FW199,FW200.

The model name and color are different.

**Test mode:**

Antenna1(charging Mobile phone vertically Coil):

Pretest Mode	Description
Mode 1	Stand charging mode(5W,no load, half load, full load)
Mode 2	Stand charging mode(7.5W,no load, half load, full load)
Mode 3	Stand charging mode(10W,no load, half load, full load)
Mode 4	Stand charging mode(15W,no load, half load, full load)

Antenna2(charging Mobile phone horizontally):

Pretest Mode	Description
Mode 1	Stand charging mode(5W,no load, half load, full load)
Mode 2	Stand charging mode(7.5W,no load, half load, full load)
Mode 3	Stand charging mode(10W,no load, half load, full load)
Mode 4	Stand charging mode(15W,no load, half load, full load)

Note: Antenna1 and Antenna2 cannot work at the same time.

Antenna3(iWatch):

Pretest Mode	Description
Mode 1	Stand charging mode(2.5W,no load, half load, full load)

Antenna4(Airpods):

Pretest Mode	Description
Mode 1	Stand charging mode(3W,no load, half load, full load)

Combination Mode:

Pretest Mode	Description
Mode 1	Charging mobile phone + iWatch
Mode 2	Charging mobile phone + Airpods
Mode 3	Charging mobile phone + iWatch + Airpods
Mode 4	Charging iWatch + Airpods

All Combination Mode have been tested,only the worst case(Mode 3) recorded in the report.



5 RF Exposure Evaluation

5.1 Limits

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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/150	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

- A. The RF exposure test was performed in anechoic chamber.
- B. E and H field measurements should be made with the center of the probe at distance of 15cm surrounding the EUT and 20cm above the top surface of the primary/client pair.
- C. The highest emission level was recorder and compared with limit.
- D. The EUT was measured according to the dictates of KDB 680106 v03r01.



(A) Limits for Occupational / Controlled Exposure

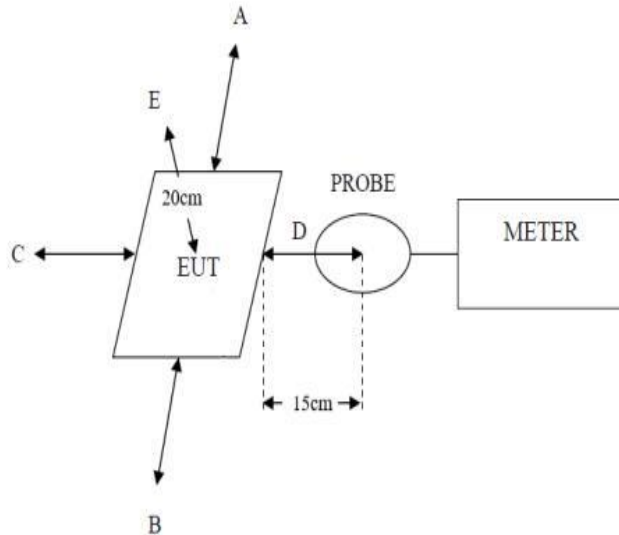
Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

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

5.2 Test Configuration



5.3 MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

5.4 RF Exposure test result

Temperature: 24°C

Relative Humidity: 53%



EUT was tested with empty load, half load and full load, the full load is the worst case and we listed the results in the report.

Antenna1(charging mobile phone vertically):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1159	0.09274	0.815	1.63	Passed
B: Left	15	0.0586	0.04689	0.815	1.63	
C: Front	15	0.0678	0.05425	0.815	1.63	
D: Back	15	0.0532	0.04256	0.815	1.63	
E: Top	20	0.0986	0.07888	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.65	614	Passed
B: Left	15	2.09	614	
C: Front	15	2.24	614	
D: Back	15	2.27	614	
E: Top	20	2.63	614	



Antenna2(charging mobile phone horizontally):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1123	0.0899	0.815	1.63	Passed
B: Left	15	0.0566	0.0453	0.815	1.63	
C: Front	15	0.0617	0.0494	0.815	1.63	
D: Back	15	0.0519	0.0415	0.815	1.63	
E: Top	20	0.1110	0.0888	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.86	614	Passed
B: Left	15	2.13	614	
C: Front	15	2.17	614	
D: Back	15	2.19	614	
E: Top	20	2.61	614	



Antenna3(charging iWatch):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1123	0.0899	0.815	1.63	Passed
B: Left	15	0.0566	0.0453	0.815	1.63	
C: Front	15	0.0617	0.0494	0.815	1.63	
D: Back	15	0.0519	0.0415	0.815	1.63	
E: Top	20	0.1110	0.0888	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.22	614	Passed
B: Left	15	1.52	614	
C: Front	15	1.56	614	
D: Back	15	1.62	614	
E: Top	20	1.95	614	



Antenna4(charging airpods):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1124	0.08992	0.815	1.63	Passed
B: Left	15	0.0547	0.04376	0.815	1.63	
C: Front	15	0.0618	0.04944	0.815	1.63	
D: Back	15	0.0514	0.04112	0.815	1.63	
E: Top	20	0.1101	0.08808	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.26	614	Passed
B: Left	15	1.55	614	
C: Front	15	1.59	614	
D: Back	15	1.64	614	
E: Top	20	1.97	614	



Antenna4(charging airpods):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1124	0.08992	0.815	1.63	Passed
B: Left	15	0.0547	0.04376	0.815	1.63	
C: Front	15	0.0618	0.04944	0.815	1.63	
D: Back	15	0.0514	0.04112	0.815	1.63	
E: Top	20	0.1101	0.08808	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.26	614	Passed
B: Left	15	1.55	614	
C: Front	15	1.59	614	
D: Back	15	1.64	614	
E: Top	20	1.97	614	



Combination Mode(Mode 3):

Test result of Magnetic Field Strength:

Test Position	Test distance (cm)	Reading result (uT)	Test result (A/m)	50% Limit (A/m)	Limit (A/m)	Result
A: Right	15	0.1640	0.13120	0.815	1.63	Passed
B: Left	15	0.0971	0.07768	0.815	1.63	
C: Front	15	0.0986	0.07888	0.815	1.63	
D: Back	15	0.0976	0.07808	0.815	1.63	
E: Top	20	0.1613	0.12904	0.815	1.63	

Note:A/m=uT/1.25

Test result of Electric Field Strength:

Test Position	Test distance (cm)	Test result (V/m)	Limit (V/m)	Result
A: Right	15	2.67	614	Passed
B: Left	15	1.98	614	
C: Front	15	1.97	614	
D: Back	15	1.93	614	
E: Top	20	2.37	614	



5.5 Result appraise

--Yes. It is max power 15W.

(3) The sample have four coil to charge.

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

--Yes. Client device is placed directly.

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

--Yes. it is mobile production.

(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm

away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

--Yes, it is meet

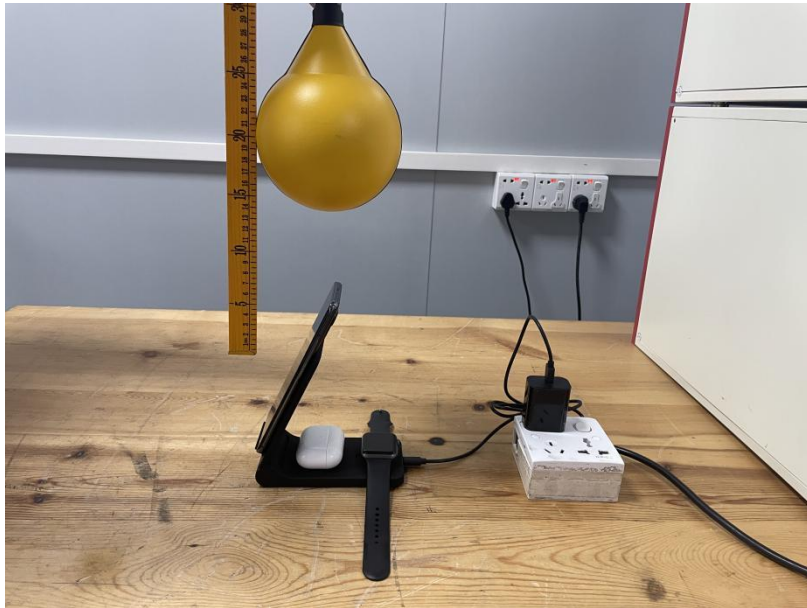
(1) Power transfer frequency is less than 1 MHz

--Yes. it's 110-205KHz.

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



6 Test Photo



*****THE END REPORT*****