



FCC TEST REPORT

**Test report
On Behalf of
Shenzhen Topstar Industry Co.,Ltd.
For
Wireless Charger**

**Model No.: WI-211, WI-200, WI-210, WI-212, WI-220, WI-201, WI-202,
WI-213, WI-214, WI-221, WI-222, WI-223, WI-230, WI-231, WI-232**

FCC ID: 2A2ND-WI-211

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Date of Test: Jun. 24, 2021 ~ Jul. 14, 2021

Date of Report: Jul. 14, 2021

Report Number: HK2106242061-2E

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

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Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List							
Channel	Frequency (KHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	125						

The EUT antenna is Coil Antenna. No antenna other than that furnished by the responsible party shall be used with the device.

2. SUMMARY OF TEST RESULTS

2.1 Test procedures according to the technical standards:

FCC KDB680106 D01 RF Exposure Wireless Charging Apps v03r01

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 KDB680106 D01v03r01	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	All emissions, radiated(<30M)(9KHz-30MHz)	$\pm 4.26\text{dB}$
2	Temperature	$\pm 0.5^\circ\text{C}$
3	Humidity	$\pm 2\%$

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2.3 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 10, 2020	Dec. 09, 2021
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 10, 2020	Dec. 09, 2021
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 10, 2020	Dec. 09, 2021
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 10, 2020	Dec. 09, 2021
Broadband Field Meter	NARDA	NBM-550	-	Dec. 10, 2020	Dec. 09, 2021
Electric Field Meter	COMBINOVIA	EFM 200	5Hz – 400kHz	Dec. 10, 2020	Dec. 09, 2021
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 10, 2020	Dec. 09, 2021
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 10, 2020	Dec. 09, 2021
Isotropic Electric Field Probe	NARDA	EP-601	511WX60706	Dec. 10, 2020	Dec. 09, 2021

NOTE: 1. The calibration interval of the above test instruments is 12 months



3. MAXIMUM PERMISSIBLE EXPOSURE

3.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled 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)
0.3-3.0	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

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)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	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 v03r01

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 1.63A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

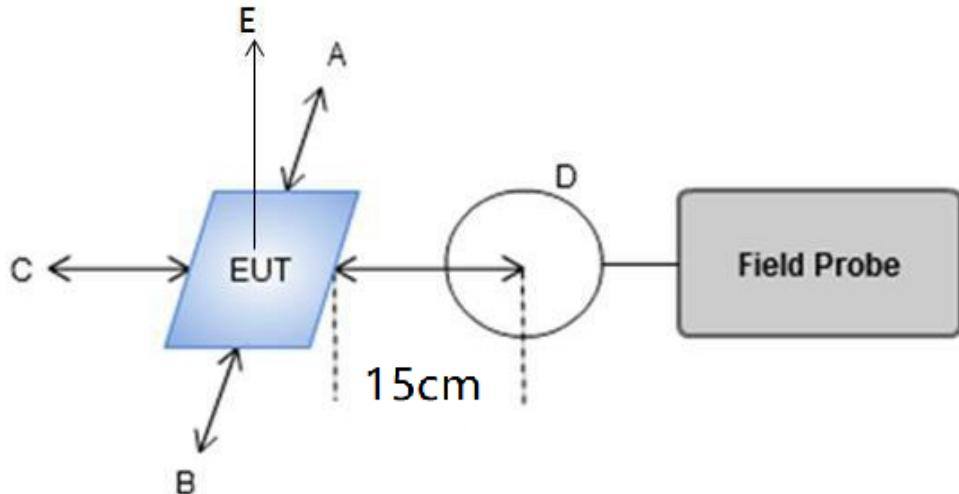


4. TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of (H-field & E- field strengths for all sides is 15cm, H-field strengths of top side is 20cm).

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 15 cm measured from the center of the probe(s) to the edge of the device.

4.1 TEST SETUP



4.2 RESULT OF MAXIMUM PERMISSIBLE EXPOSURE



For Full load mode:

E-Field Strength at 15 cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.77	1.36	1.49	1.52	1.46	614

H-Field Strength at 15 cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.55	0.42	0.76	0.58	0.63	1.63

For Half Load mode:

E-Field Strength at 15 cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.25	1.44	1.25	1.55	1.56	614

H-Field Strength at 15 cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.66	0.18	0.26	0.19	0.42	1.63



For No load mode:

E-Field Strength at 15 cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.62	1.74	1.22	1.35	1.85	614

H-Field Strength at 15 cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.32	0.46	0.27	0.13	0.75	1.63

Remark: According KDB 680106 D01 RF Exposure Wireless Charging App v03r01, section 5, b). 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. The E- field evaluation conducted assuming a user separation distance of 15 cm according to the KDB 680106 D01 RF Exposure Wireless Charging App v03r01 section 3, c).

Result: The device comply with the RF exposure requirement according to 680106 D01 v03r01, section 5, b):

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

-The device operate in the frequency range 125KHz.

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

-The maximum output power of the phone is 15W,

(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.

-Yes, the product has two main loops, supporting two clients to charge at the same time.

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

-The EUT is placed directly in contact with the transmitter

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

-Yes, Mobile exposure conditions only.

(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.

-Yes, the EUT meet the conditions.

**PHOTOGRAPH OF TEST**

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