FCC TEST REPORT

Test report
On Behalf of
Shenzhen Wittlang Electronics Co., Ltd
For
Energy storage power supply

Model No.: CN-1000W, CN-1500W, CN-2000W

FCC ID: 2A9OU-CN-1000W

Prepared For :	**Shenzhen Wittlang Electronics Co., Ltd** **601, Factory Bldg#2, Jiancang Technology R & D Area, Tantou Community, Songgang Street, Bao'an District, Shenzhen City, Guangdong Province, China**
Prepared By :	**Shenzhen HUAK Testing Technology Co., Ltd.** **1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China**
Date of Test:	**Nov. 10, 2022 ~ Nov. 17, 2022**
Date of Report:	**Nov. 17, 2022**
Report Number:	**HK2211105039-2E**

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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	136						

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 (3)(3)	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

2.2. Measurement Uncertainty

The reported uncertainty of measurement **y ±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)	±3.90dB
2	Temperature	±0.5°C
3	Humidity	±2%

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2.3. Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Exposure Level Tester	narda	ELT-400	N-0231	Feb. 18, 2022	Feb. 17, 2023
Magnetic field probe 100cm^2	narda	ELT probe 100cm2	M0675	Feb. 18, 2022	Feb. 17, 2023

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

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3. 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/ cm²)	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/ cm²)	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.

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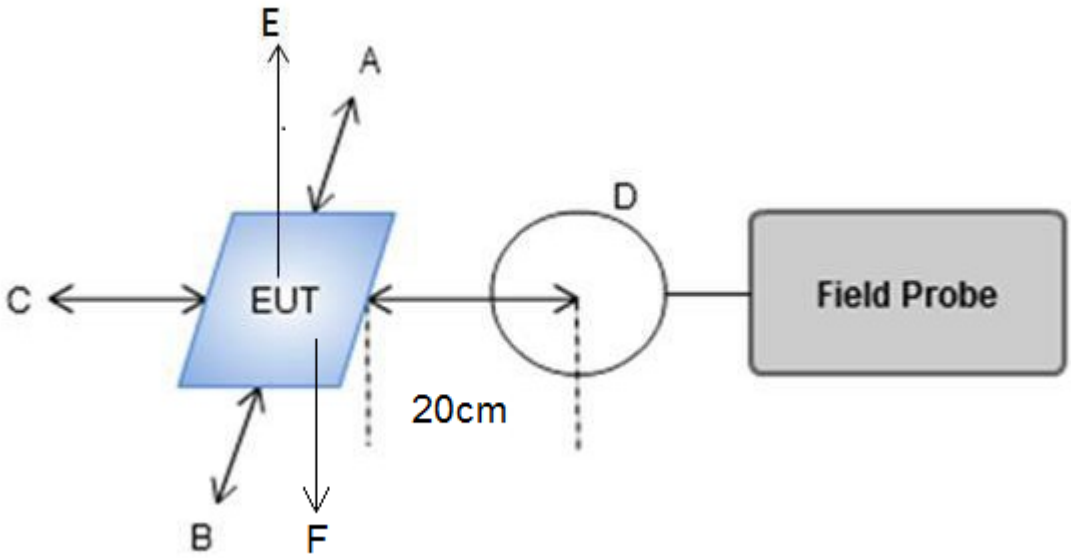
4. TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance 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 0-20 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

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For Full load mode:

H-Field Strength at 0-20 cm from the edges surrounding the EUT (A/m)

Measuring distance (cm)	Field strength	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Limits (A/m)
0	uT	1.543	1.504	1.505	1.460	1.522	1.547	/
	A/m	1.234	1.203	1.204	1.168	1.217	1.237	1.63
2	uT	1.443	1.440	1.434	1.387	1.420	1.332	/
	A/m	1.154	1.152	1.147	1.110	1.136	1.065	1.63
4	uT	1.264	1.207	1.312	1.309	1.247	1.209	/
	A/m	1.011	0.966	1.049	1.047	0.998	0.968	1.63
6	uT	1.143	1.120	1.194	1.219	1.185	1.195	/
	A/m	0.914	0.896	0.955	0.975	0.948	0.956	1.63
8	uT	1.094	1.050	1.045	1.089	1.073	1.104	/
	A/m	0.876	0.840	0.836	0.871	0.858	0.883	1.63
10	uT	0.991	0.996	1.054	0.996	0.968	0.982	/
	A/m	0.793	0.797	0.843	0.797	0.774	0.785	1.63
12	uT	0.925	0.855	0.834	0.887	0.858	0.812	/
	A/m	0.740	0.684	0.667	0.710	0.686	0.649	1.63
14	uT	0.754	0.794	0.817	0.764	0.784	0.823	/
	A/m	0.603	0.635	0.654	0.611	0.627	0.658	1.63
16	uT	0.670	0.709	0.726	0.681	0.679	0.712	/
	A/m	0.536	0.567	0.581	0.545	0.543	0.569	1.63
18	uT	0.651	0.619	0.559	0.657	0.575	0.599	/
	A/m	0.521	0.495	0.447	0.526	0.460	0.479	1.63
20	uT	0.375	0.382	0.465	0.462	0.411	0.386	/
	A/m	0.300	0.306	0.372	0.369	0.329	0.309	1.63

Note.
Calculation: A/m=uT/1.25

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For Half Load mode:

H-Field Strength at 0-20 cm from the edges surrounding the EUT (A/m)

Measuring distance (cm)	Field strength	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Limits (A/m)
0	uT	1.462	1.516	1.494	1.467	1.479	1.474	/
	A/m	1.170	1.213	1.195	1.173	1.183	1.179	1.63
2	uT	1.380	1.412	1.444	1.364	1.384	1.437	/
	A/m	1.104	1.130	1.155	1.091	1.107	1.149	1.63
4	uT	1.274	1.328	1.229	1.211	1.269	1.314	/
	A/m	1.020	1.063	0.983	0.969	1.015	1.051	1.63
6	uT	1.183	1.137	1.117	1.225	1.118	1.153	/
	A/m	0.947	0.909	0.893	0.980	0.895	0.923	1.63
8	uT	1.097	1.084	1.062	1.068	1.045	1.116	/
	A/m	0.878	0.867	0.849	0.854	0.836	0.893	1.63
10	uT	0.963	0.955	0.977	1.018	0.975	0.958	/
	A/m	0.771	0.764	0.782	0.814	0.780	0.766	1.63
12	uT	0.879	0.902	0.878	0.866	0.920	0.882	/
	A/m	0.703	0.722	0.702	0.693	0.736	0.706	1.63
14	uT	0.783	0.783	0.752	0.814	0.830	0.805	/
	A/m	0.626	0.626	0.601	0.651	0.664	0.644	1.63
16	uT	0.756	0.650	0.761	0.682	0.729	0.656	/
	A/m	0.605	0.520	0.609	0.546	0.583	0.525	1.63
18	uT	0.641	0.662	0.547	0.625	0.632	0.627	/
	A/m	0.513	0.529	0.438	0.500	0.506	0.502	1.63
20	uT	0.440	0.489	0.472	0.450	0.464	0.454	/
	A/m	0.352	0.391	0.378	0.360	0.371	0.363	1.63

Note.

Calculation: A/m=uT/1.25

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For No load mode:

H-Field Strength at 0-20 cm from the edges surrounding the EUT (A/m)

Measuring distance (cm)	Field strength	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Limits (A/m)
0	uT	1.457	1.521	1.513	1.446	1.433	1.459	/
	A/m	1.165	1.217	1.210	1.157	1.147	1.167	1.63
2	uT	1.385	1.387	1.388	1.416	1.328	1.414	/
	A/m	1.108	1.110	1.110	1.133	1.062	1.131	1.63
4	uT	1.245	1.307	1.304	1.313	1.240	1.266	/
	A/m	0.996	1.046	1.044	1.051	0.992	1.013	1.63
6	uT	1.125	1.120	1.147	1.153	1.177	1.210	/
	A/m	0.900	0.896	0.918	0.922	0.942	0.968	1.63
8	uT	1.126	1.108	1.023	1.032	1.129	1.117	/
	A/m	0.901	0.886	0.819	0.826	0.903	0.894	1.63
10	uT	0.972	0.968	1.064	1.056	0.991	0.989	/
	A/m	0.778	0.774	0.851	0.845	0.793	0.791	1.63
12	uT	0.823	0.933	0.893	0.931	0.902	0.902	/
	A/m	0.658	0.746	0.714	0.745	0.721	0.721	1.63
14	uT	0.764	0.740	0.772	0.820	0.745	0.745	/
	A/m	0.612	0.592	0.618	0.656	0.596	0.596	1.63
16	uT	0.722	0.762	0.667	0.663	0.766	0.692	/
	A/m	0.578	0.609	0.533	0.531	0.612	0.554	1.63
18	uT	0.558	0.640	0.653	0.583	0.636	0.661	/
	A/m	0.447	0.512	0.522	0.466	0.508	0.528	1.63
20	uT	0.427	0.428	0.431	0.437	0.492	0.388	/
	A/m	0.341	0.342	0.345	0.349	0.393	0.311	1.63

Note.

Calculation: A/m=uT/1.25

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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 for 111.5KHz~205KHz

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

-The maximum output power of the primary coil 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

-The transfer system including a charging system with only single primary coils is to detect and allow only

(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).

- This is a portable device

(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.

- The EUT meet the conditions.

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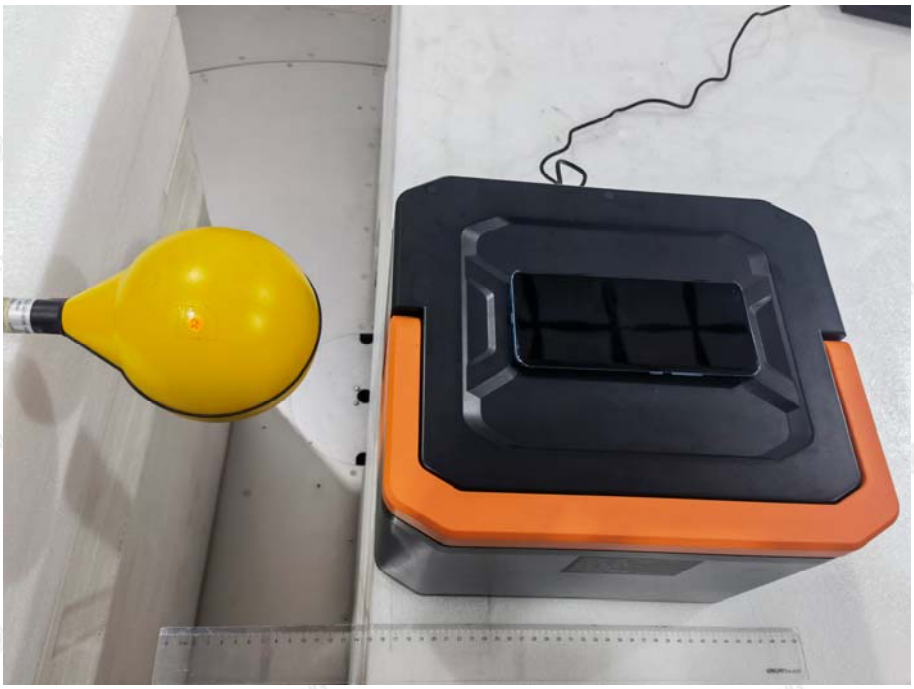
PHOTOGRAPH OF TEST

A



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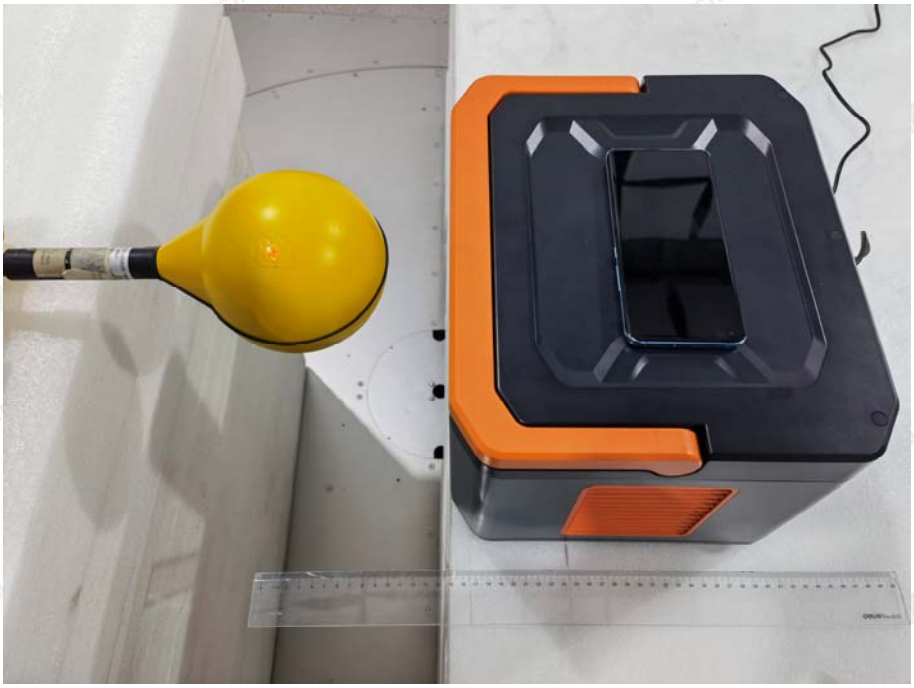
D



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※※※※※THE END※※※※※

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