

MPE REPORT

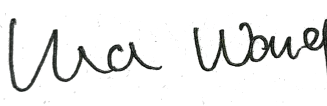
Applicant:	Zhuhai Tessian Power Technology Co.,Ltd.		
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Manufacturer:	Zhuhai Tessian Power Technology Co.,Ltd.		
Address:	Building 14, Xiangzhou Chuanggang Center, No.199, Weikang Road, Xiangzhou District, Zhuhai, Guangdong Province, China		
Factory:	Dong Guan City GangQi Electronic Co., Ltd.		
Address:	1 Building, No. 13 Maoye Road ChangXiang Village, HengLi Town 523600 DongGuan, GuangDong PEOPLE'S REPUBLIC OF CHINA		
E.U.T.:	TESSAN Charging Station		
Model Number:	TS-WR02US00, TS-WR02US01		
Trade Mark:	TESSAN		
FCC ID:	2A4EP-WR02US		
Date of Receipt:	2026-05-30	Date of Test:	2026-05-30 to 2026-08-03
Test Specification:	FCC Part 1(1.1310) and Part 2(2.1093) KDB 680106 D01 RF Exposure Wireless Charging App v04		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Prepared by:		Approved & Authorized Signer:	
			
Una. Wang/ Engineer		Frank. Shen/ Manager	
		Issue Date: 2026-09-21	
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Dongguan Lepont Testing Service Co., Ltd.			

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Revision History of This Test Report

Report Number	Description	Issued Date
LP26040288C01-02-01	Initial Issue	2026-09-21

1. GENERAL PRODUCT INFORMATION

1.1. PRODUCT FUNCTION

Refer to Technical Construction Form and User Manual.

1.2. EUT TECHNICAL DESCRIPTION

Product Name:	TESSAN Charging Station
Model No.:	TS-WR02US00, TS-WR02US01
Test Model No:	TS-WR02US01
Model Difference:	All the models have the same circuit diagram and PCB layout, except for model name.
Serial No.:	N/A
Test sample(s) ID:	LP26040288C01-S004
Sample(s) Status	Engineer sample
Hardware:	V1.0
Software:	V1.0
Operation frequency:	360KHz
Modulation Type:	MSK
Antenna Type:	Inductive Loop Antenna with 10 Turns
Antenna Gain :	N/A
Ratings:	15A 125V~60Hz 1875W MAX USB-C1 Output: 5V $\overline{\text{---}}$ 3A/ 9V $\overline{\text{---}}$ 3A/ 12V $\overline{\text{---}}$ 3A/ 15V $\overline{\text{---}}$ 3A/ 20V $\overline{\text{---}}$ 3.25A MAX Per Port USB-C2 Output: 5V $\overline{\text{---}}$ 3A MAX Per Port USB-A1 Output: 5V $\overline{\text{---}}$ 2.4A MAX Per Port USB-C1+C2 Output: 45W+15W MAX USB-C1+A1 Output: 45W+12W MAX USB-C2+A1 Output: 5V $\overline{\text{---}}$ 3A MAX USB-C1+(C2+A1) Output: 45W+15W MAX Wireless(Phone) Output: 5W/ 7.5W/ 10W/ 15W MAX USB-C1+Wireless(Phone) Output: 45W+15W MAX USB-C2/A1+Wireless(Phone)Output: 15W+15W MAX USB-C1+(C2+A1)+Wireless(Phone) Output: 30W+15W+15W MAX Total DC Output: 65W
Note: for more details, please refer to the User's manual of the EUT.	

1.3. DESCRIPTION OF TEST MODES

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

Mode:	TEST MODE DESCRIPTION
1	Wireless Output: 15W
2	Wireless Output: 10W
3	Wireless Output: 7.5W
4	Wireless Output: 5W
Note: 1. Product folding has been evaluated for use. 2. All test modes were pre - tested, but we only recorded the worst case in this report. The worst case is Mode 1	

1.4. DESCRIPTION OF SUPPORT DEVICE

No.	Equipment	Trade name	Model	S/N	Input/ Output
1.	Iphone 14 plus	Iphone	MQ3D3 CH/A	DG209WYGY6	15W Max.
2.	/	/	/	/	/

2. TEST STANDARDS AND SITES

2.1. DESCRIPTION OF STANDARDS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard & Limits	Results
MPE	FCC Part 1(1.1310) and Part 2(2.1093) KDB 680106 D01 RF Exposure Wireless Charging App v04	Pass
Note: N/A is an abbreviation for Not Applicable.		

2.2. LIST OF TEST AND MEASUREMENT INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Interval
Electric and Magnetic Field Probe - Analyzer	SPEAG	MAGPy- 8H3D+ED3 V2	3061	Jan. 06, 2026	1 Year

2.3. TEST FACILITY

EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L10100.
The Laboratory has been assessed and proved to be in compliance with A2LA
The Certificate Registration Number is 6901.01
FCC Designation No.: CN1351
Test Firm Registration No.: 397428
ISED CAB identifier: CN0151
Test Firm Registration No.: 20133

Test Location : Dongguan Lepont Testing Service Co., Ltd.

Address : Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China

3. RF EXPOSURE

3.1. MEASURING STANDARD

FCC Part 1(1.1310) and Part 2(2.1093)

3.2. REQUIREMENTS

Three different categories of transmitters are defined by the FCC in OET Bulletin 65. These categories are fixed installation, mobile, and portable and are defined as follows:

- **Fixed Installations:** fixed location means that the device, including its antenna, is physically secured at a permanent location and is not able to be easily moved to another location. Additionally, distance to humans from the antenna is maintained to at least 2 meters.
- **Mobile Devices:** a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located, such as a wireless modem operating in a laptop computer, are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 47 CFR §2.1091.
- **Portable Devices:** a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Portable device requirements are found in Section 2.1093 of the FCC's Rules (47 CFR§2.1093).
- The FCC also categorizes the use of the device as based upon the user's awareness and ability to exercise control over his or her exposure. The two categories defined are Occupational/ Controlled Exposure and General Population/Uncontrolled Exposure. These two categories are defined as follows:
 - **Occupational/Controlled Exposure:** In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. If appropriate, warning signs and labels can also be used to establish such awareness by providing prominent information on the risk of potential exposure and instructions on methods to minimize such exposure risks.
 - **General Population/Uncontrolled Exposure:** The general population / uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

3.3. TEST CONFIGURATION

For mobile exposure conditions:

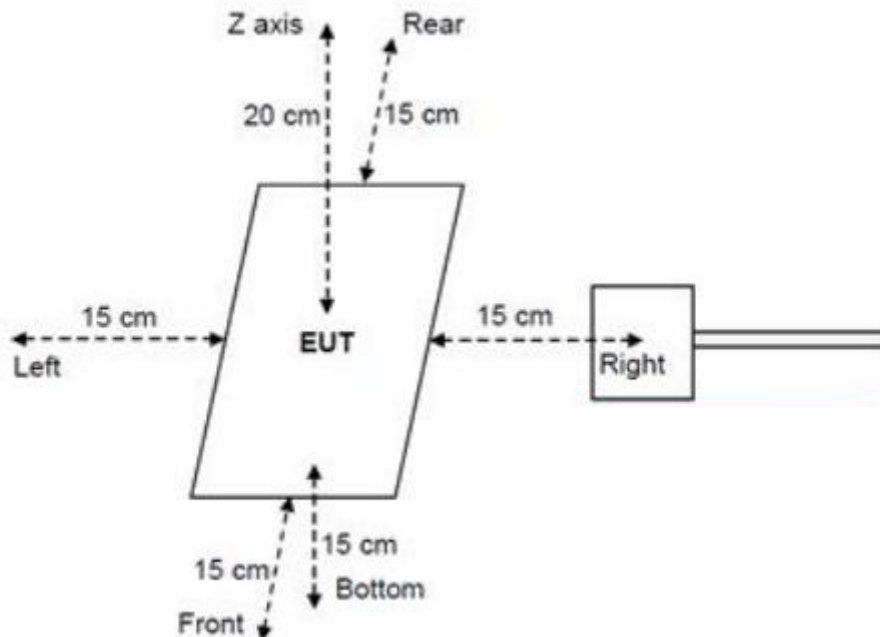
- a. The RF exposure test was performed in an echoic chamber
- b. E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the EUT and 20 cm above the top surface of the primary/client pair.
- c. The highest emission level was recorded and compared with limit.
- d. The EUT was measured according to the dictates of KDB 680106 v04

For portable exposure conditions:

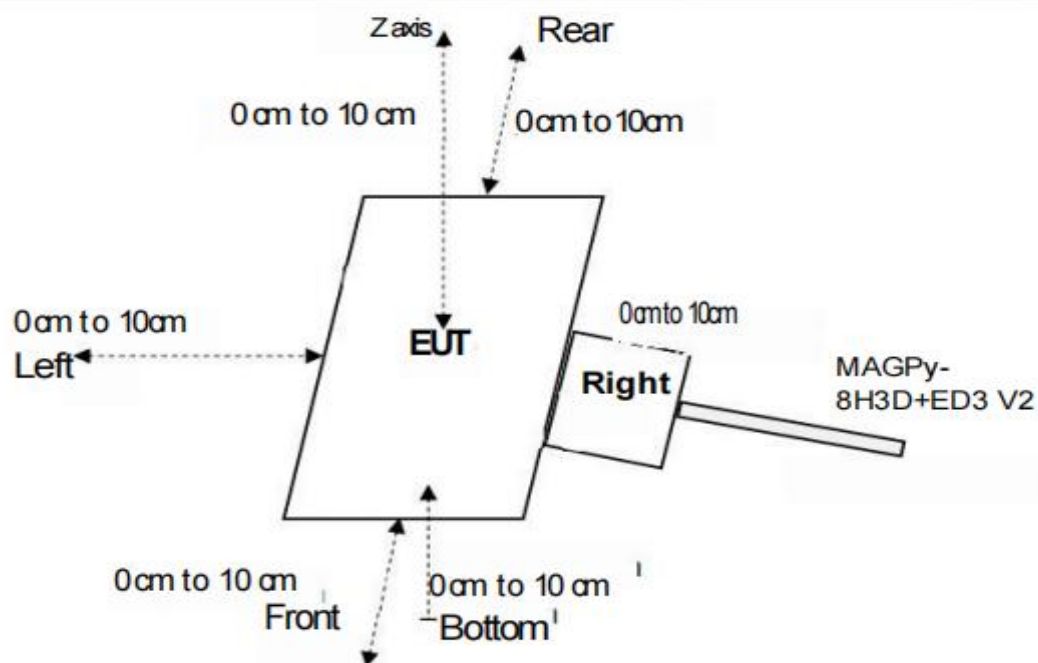
- a. The RF exposure test was performed in an echoic chamber.
 - b. E and H-field measurements should be made with the probe at 0 cm for all side of the EUT.
 - c. The highest emission level was recorded and compared with limit
- For portable exposure conditions. Perform H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 10 cm

3.4. BLOCK DIAGRAM OF TEST SETUP

For mobile exposure conditions:



For portable exposure conditions:



3.5. LIMITS

(A) 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

(B) 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			1.0	30

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

3.6. RF EXPOSURE REQUIREMENTS

3.6.1. Mobile Device and Portable Device Configurations

Wireless power transfer devices must comply with RF exposure requirements for all design configurations in which they can operate. At a minimum, RF exposure must be evaluated for the worst-case scenario, typically when the transmitter, while delivering energy to a client device, is operating at maximum output power.

RF exposure compliance for equipment authorization must be determined following the guidance of KDB 447498, which includes consideration of the different test requirements for Mobile Device and Portable Device exposure categories, as defined in §§ 2.1091 and 2.1093 of the Rules.

Sometimes, a device may meet the RF exposure compliance requirements for a specified minimum distance for all but the most unlikely use conditions. For example, some typical desktop applications, such as wireless charging pads connected to household power, operate only when the active coil is covered and coupled with the target, and are characterized by a form factor that would discourage any on-body use because of size and/or weight. Thus, these devices may be considered to meet the § 2.1091-Mobile conditions (“generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and [the nearest person]”), and may be tested for compliance according to the applicable procedures for Mobile devices that are less onerous than those for Portable devices. In other analogous cases, still for a Mobile device, RF Exposure compliance may be ensured only for a minimum separation distance that is greater than 20 cm, while use conditions at smaller distances can still be considered unlikely.

3.6.2. Equipment Authorization Procedures for Devices Operating at Frequencies Below 4 MHz

The RF exposure limits, as set forth in § 1.1310, do not cover the frequency range below 100 kHz for Specific Absorption Rate (SAR) and below 300 kHz for Maximum Permitted Exposure (MPE). In addition, present limitations of RF exposure evaluation systems prevent an accurate evaluation of SAR below 4 MHz.

For these reasons, a specific MPE-based RF Exposure compliance procedure for devices operating in the aforementioned low-frequency ranges has been set in place. This procedure is applicable to Equipment Authorization of all RF devices, thus including, but not limited to, Part 18 and WPT devices.

Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-Portable devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

Furthermore, consistent with FCC's equipment authorization RF exposure guidance, any device (both portable and mobile) operating at frequencies below 100 kHz is considered compliant for the purpose of equipment authorization when the external (unperturbed) temporal peak field strengths do not exceed the following reference levels: 83 V/m for the electric field strength (E) And 90 A/m for the magnetic field strength (H).

These data may be provided through measurements and/or numerical simulations, and for all the positions in space relevant for any possible body exposure.

For all the cases mentioned above, E and H measurements should be made from all sides of the transmitter, along all the principal axes defined with respect to the orientation of the transmitting element (e.g., coil or antenna). When clearly demonstrated, symmetry considerations may be used to reduce the amount of testing. Furthermore, for "low-frequency" loop/coil emitting structures that lead to dominant H-field nearfield emissions (i.e., with E/H ratio less than 1/10 of the 377-ohm free space wave impedance, typically frequencies less than 1 MHz), only H-field measurements are sufficient for demonstrating MPE limit compliance.

It should be also noted that if numerical modeling is used to support compliance data for certification, the application is subject to PAG, related to the NUMSIM item in the PAG list of KDB Publication 388624-D02.

3.6.3. Field Strength Measurements

"Large size" probes may prevent the measurement of E- and/or H-fields near the surface of the radiating structure (e.g., a WPT source coil), as in the example shown in Figure 1.

If the center of the probe sensing element is located more than 5 mm from the probe outer surface, the field strengths need to be estimated through modeling for those positions that are not reachable. The estimates may be done either via numerical calculation, or via analytic model: e.g., approximated formulas for circular coils, dipoles, etc., may be acceptable if it is shown that the model is applicable for the design parameters considered. A typical example is the use of a quasi-static approximation formula for a low-frequency magnetic field source.

These estimates shall include points spaced no more than 2 cm from each other. Thus, in the example of Figure 1, at least the estimates at 0 cm and 2 cm are required, while only one point would not be sufficient. In addition, the model needs to be validated through the probe measurements for the two closest points to the device surface, and with 2-cm increments, as indicated in Figure 1. In that example, the same model must also be applied to the 4 cm and 6 cm positions, and then compared with the measured data, for validation purposes. The validation is considered sufficient if a 30% agreement between the model and the (E- and/or H-field) probe measurements is demonstrated. If such a level of agreement cannot be shown, a more accurate model (and/or a smaller probe) shall be used.

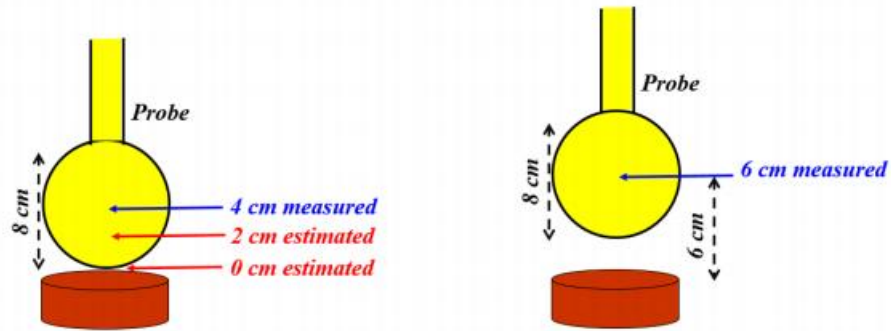


Figure 1. Example of probe (in yellow) measurements in points close to the WPT device (in red/brown). The probe radius is 4 cm, thus the closest point to the device where the field can be measured is at 4 cm from the surface (this example assumes that the probe calibration refers to the center of the sensing element structure, in this case a sphere of 4 cm radius). Data at 0 cm and 2 cm must be estimated through a model, and then the same model must be validated via comparison with the actual measurements at 4 cm and 6 cm, where the probe center can be positioned and collect valid data.

3.7. TEST DATA:

The wireless charge has two different working positions, horizontal and vertical, and we tested the two states separately, this report shows the Worst-case data of the horizontal state.

Measuring distance: 20cm, Frequency: 360KHz

Test Mode: Mode 1(99% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	2.11	614
Left	1.95	614
Right	1.89	614
Rear	1.74	614
Front	1.77	614
Bottom	1.99	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.0931	1.63
Left	0.0918	1.63
Right	0.0905	1.63
Rear	0.0893	1.63
Front	0.0884	1.63
Bottom	0.0921	1.63

Test Mode: Mode 1(50% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	1.88	614
Left	1.81	614
Right	1.80	614
Rear	1.75	614
Front	1.69	614
Bottom	1.77	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.0743	1.63
Left	0.0736	1.63
Right	0.0729	1.63
Rear	0.0725	1.63
Front	0.0711	1.63
Bottom	0.0716	1.63

Test Mode: Mode 1(1% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	0.73	614
Left	0.70	614
Right	0.63	614
Rear	0.65	614
Front	0.69	614
Bottom	0.70	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.0412	1.63
Left	0.0409	1.63
Right	0.0397	1.63
Rear	0.0391	1.63
Front	0.0382	1.63
Bottom	0.0386	1.63

4. TEST PHOTOGRAPHS

Please refer to the "testing photo" document for details.

----- END OF REPORT -----