FCC Test Report

Test Report
On Behalf of
GUANGDONG DP CO., LTD.
For
portable power station
Model No.: DP-HW1000L

FCC ID: 2BEU2-DP-HW1000L

Prepared For:	**GUANGDONG DP CO., LTD.** **No.12 Keyuan Road, Private Science Park, Baiyun District, Guangzhou, 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:	**Oct. 16, 2023 ~ May. 08, 2024**
Date of Report:	**May. 08, 2024**
Report Number:	**HK2310164780-2E**

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.

Test Result Certification

Applicant's Name..... : GUANGDONG DP CO., LTD.

Address..... : No.12 Keyuan Road, Private Science Park, Baiyun District, Guangzhou, China

Manufacture's Name..... : GUANGDONG DP CO., LTD.

Address..... : No.12 Keyuan Road, Private Science Park, Baiyun District, Guangzhou, China

Product Description

Trade Mark..... : DP

Product Name..... : portable power station

Model and/or Type Reference: DP-HW1000L

Standards ..... : FCC CFR 47 PART 15, KDB 680106 D01

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen HUAK Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen HUAK Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Date of Test.....:

Date (s) of Performance of Tests .....: **Oct. 16, 2023 ~ May. 08, 2024**

Date of Issue.....: **May. 08, 2024**

Test Result.....: **Pass**

Testing Engineer : Len Liao

(Len Liao)

Technical Manager : Sliver Wan

(Sliver Wan)

Authorized Signatory : Jason Zhou

(Jason Zhou)

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.

Note:

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

2. Frequency Band: 112-205KHz

Channel List							
Channel	Frequency (KHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Middle CH	118						

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 KDB 680106 D01 Wireless Power Transfer v04

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 KDB 680106 D01v04	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%

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.

2.3. Test Instruments

Description	Brand	Model No.	S/N	Calibrated Date	Calibrated Until
Magnetic Amplitude and Gradient Probe System	SPEAG	MAGPy-8H3D +E3D V2 & MAGPy-DAS V2	SZ186-06 & 3061	Apr. 13, 2023	Apr. 12, 2024

Parameter	Specs
PROBE DESIGN	
Diameter	60 mm
8 isotropic H-field sensors	concentric loops of 1 cm^2 arranged at the corner of a cube of 22 mm side length
1 isotropic E-field sensor	orthogonal dipole/monopole (arm length: 50 mm)
Measurement center	18.5 mm from the probe tip
Temperature range	0–40 °C
Dimensions	110 × 635 × 35 mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2)
H-FIELD SPECIFICATION	
Frequency range	3 kHz–10 MHz
Measurement range	0.1–3200 A/m, 0.12 µT–4 mT
Gradient range	0–80 T/m/T
E-FIELD SPECIFICATION	
Frequency range	3 kHz–10 MHz
Measurement range	0.08–2000 V/m

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

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.

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 Wireless Power Transfer v04.

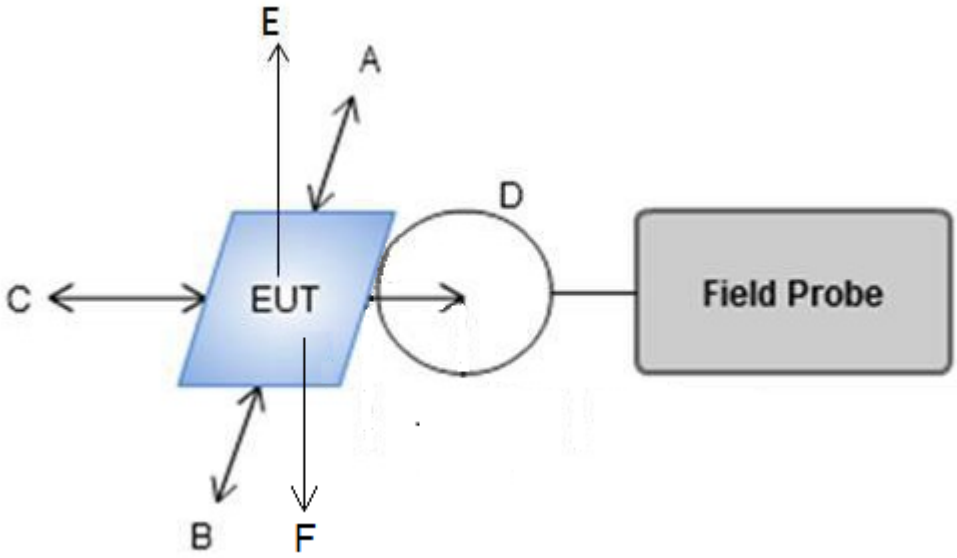
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

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.

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 0-20cm.
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

All test modes are tested, and the report shows only the worst mode: 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	A/m	0.795	0.755	0.689	0.712	0.669	0.703	1.63
2	A/m	0.782	0.713	0.624	0.735	0.647	0.754	1.63
4	A/m	0.702	0.698	0.694	0.719	0.674	0.685	1.63
6	A/m	0.697	0.622	0.633	0.694	0.583	0.582	1.63
8	A/m	0.611	0.604	0.513	0.530	0.590	0.559	1.63
10	A/m	0.549	0.531	0.518	0.613	0.606	0.517	1.63
12	A/m	0.569	0.545	0.493	0.506	0.477	0.450	1.63
14	A/m	0.499	0.467	0.413	0.436	0.414	0.566	1.63
16	A/m	0.431	0.464	0.397	0.354	0.403	0.412	1.63
18	A/m	0.402	0.317	0.323	0.436	0.389	0.364	1.63
20	A/m	0.289	0.334	0.289	0.205	0.262	0.170	1.63

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.

E-Field Strength at 0-20 cm from the edges surrounding the EUT (V/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 (V/m)
0	V/m	5.986	6.965	6.475	6.604	7.141	5.517	614
2	V/m	5.594	6.168	6.196	5.844	6.907	5.462	614
4	V/m	5.379	5.985	5.448	5.900	6.035	5.298	614
6	V/m	5.241	5.514	5.245	5.533	6.007	4.989	614
8	V/m	5.193	5.416	5.179	5.277	5.895	4.727	614
10	V/m	5.185	4.857	5.046	5.094	5.535	4.525	614
12	V/m	5.019	4.759	4.841	4.673	5.311	4.460	614
14	V/m	4.944	4.566	4.435	4.182	4.945	3.806	614
16	V/m	3.797	4.039	4.125	4.087	4.440	3.677	614
18	V/m	3.370	3.360	2.912	3.058	2.702	2.064	614
20	V/m	2.370	2.870	1.940	1.890	2.480	1.250	614

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.

Remark: According KDB 680106 D01 Wireless Power Transfer v04, section 5.2. The aggregate H-field strengths at 20 cm surrounding the device 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 20 cm according to the KDB 680106 D01 Wireless Power Transfer v04, section 5.2).

Result: The device comply with the RF exposure requirement according to 680106 D01 v04, section 5.2):

(1) The power transfer frequency is below 1MHz.
- The device operate in the frequency range for 112KHz~ 205KHz

(2) The output power from each transmitting element (e .g., coil) is less than or equal to 15 watts.
- The maximum output power is 15W

(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
-The EUT is placed directly in contact with the transmitter

(4) Only 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover 2.093-porable exposure conditions).
- This is a portable device.

(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

- The EUT meet the conditions.

(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (ie, clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.
- The transfer system is a charging system with only one main coil.

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.

Photograph of Test

A

B

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.

C

D

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.

E

F

※※※※※THE END※※※※※

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.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China