

## RF Exposure Report

**Applicant:** Shenzhen Growatt Power Technology Co., Ltd.

**Address of Applicant:** 1001,10/F. Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Xixiang, Bao' an District, Shenzhen

**Manufacturer:** Shenzhen Growatt Power Technology Co., Ltd.

**Address of Manufacturer:** 1001,10/F. Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Xixiang, Bao' an District, Shenzhen

### Equipment Under Test (EUT)

**Product Name:** Portable Power Station

**Model No.:** VITA 550

**Trade Mark:** GROWATT

**FCC ID:** 2A9PQ-VITA550

**Applicable standards :** FCC CFR Title 47 Part 1 §1.1307

FCC CFR Title 47 Part 1 §1.1310

FCC CFR Title 47 Part 2 §2.1091

KDB 680106 D01 RF Exposure Wireless Charging App v03r01

**Test date:** November 30~December 8, 2022

**Date of report issue:** December 8, 2022

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



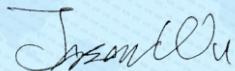
**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

Version No.	Date	Description
00	December 8, 2022	Original

Prepared By:

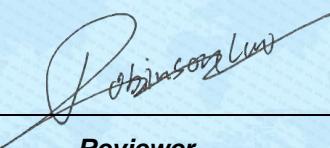


Date:

December 8, 2022

Project Engineer

Check By:



Date:

December 8, 2022

Reviewer

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## 4 General Information

### 4.1 General Description of EUT

Product Name:	Portable Power Station
Model No.:	VITA 550
Test Model No.:	VITA 550
Test sample(s) ID:	GTS202212000253-1
Sample(s) Status	Engineer sample
Operation Frequency:	110.5kHz~205kHz
Modulation type:	ASK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi (Max)
Power supply:	Input: AC Input: 120V~, 6A, 60Hz DC Input: 12-24V --- 10A Max Battery Capacity: 22.4V/537.6Wh
WPT output power:	15W Max

## 4.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

## 4.3 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123- 128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

## 4.4 Description of Support Units

Manufacturer	Description	Model	S/N
EESON	Wireless charger load	2S	N/A

## 4.5 Deviation from Standards

None.

## 4.6 Abnormalities from Standard Conditions

None.

## 4.7 Other Information Requested by the Customer

None.

## 5 Requirements

### Test Methodology:

The tests documented in this report were performed in accordance with FCC CFR Title 47 Part 1 §1.1307, FCC CFR Title 47 Part 1 §1.1310, FCC CFR Title 47 Part 2 §2.1091 and KDB 680106 D01 RF Exposure Wireless Charging App v03r01

### Limit:

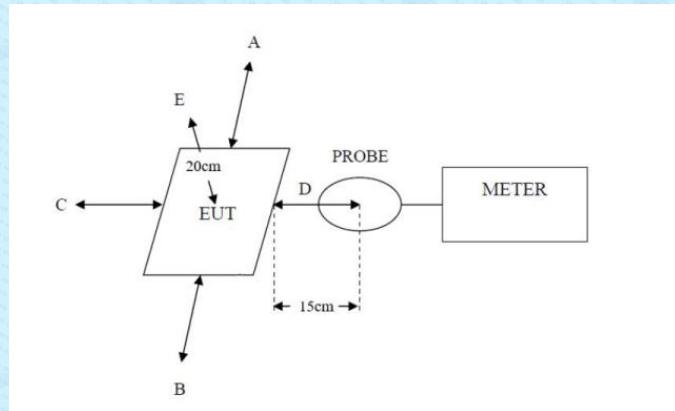
Table 1 to § 1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. \* = Plane-wave equivalent power density.

### Method Of Measurement:

- The RF exposure test was performed in shielded chamber.
- The geometric centre of probe was placed at 15 cm test distance surrounding the device and 20 cm above the top surface.
- The measurement probe used to search of highest strength.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- The EUT were measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging App v03r01.

**Test Setup:**


Note: As bottom point is not required to test for desktop devices

**Equipment Approval Considerations:**

The EUT comply with 680106 D01 RF Exposure Wireless Charging App v03r01.

1. Power transfer frequency is less than 1 MHz.

Yes, the device operated in the frequency range from 110.5kHz to 205kHz.

2. Output power from each primary coil is less than or equal to 15 Watts.

Yes, The maximum output power of each primary coil is 15 watts.

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.

No, The transfer system includes one primary coils and clients that are able to detect and allow coupling only between individual pairs of coils..

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

Yes, Client device is placed directly in contact with the transmitter.

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

Yes, The EUT is a mobile 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.

Yes; The EUT's field strength levels are less than 50% of the MPE limit.

**Measuring Instrument Used:**

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Electric And Magnetic Field Analyzer	Narda	EHP-200AC	180ZX10226	June. 23 2022	June. 22 2023
Broadband field Meter	Narda	NBM-550	E-1273	June. 23 2022	June. 22 2023
Broadband field Probe	Narda	EF0391	D-0891	June. 23 2022	June. 22 2023

## E Field And H Field Strength Test Result:

Test Mode	Description
Mode 1	Charging with 15 W wireless charging load (Full Load)
Mode 2	Charging with 15 W wireless charging load (Half Load)
Mode 3	Charging with 15 W wireless charging load (No Load)

Note: All the modes had been tested, but only the worst data was recorded in the report (Mode 1).

H-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (A/m)

15cm					20cm	Limits(A/m)	50% Limits(A/m)
Test Position A	Test Position B	Test Position C	Test Position D	Test Position E			
0.16	0.24	0.19	0.44	0.14	1.63		0.815

E-Filed Strength at 15 cm from the edges surrounding the EUT and 20 cm above the top surface of the EUT (V/m)

15cm					20cm	Limits(V/m)	50% Limits(V/m)
Test Position A	Test Position B	Test Position C	Test Position D	Test Position E			
1.32	1.31	1.56	1.17	1.82	614		307

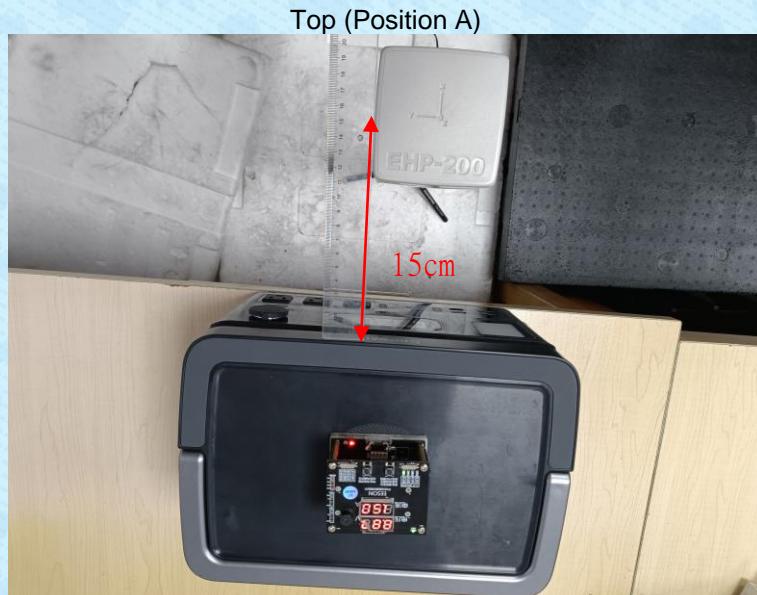
## Simultaneous Transmission for SAR Exclusion

The WPT and BLE or 2.4G Wi-Fi can transmit at the same, need consider simultaneous transmission. The WiFi/BLE does not support simultaneous transmission, So record worst case Maximum Simultaneous transmission SAR Ratio for 2.4G Wi-Fi and WPT

Maximum SAR Ratio 2.4G Wi-Fi	Maximum SAR Ratio WPT	SAR ratio 2.4G Wi-Fi + SAR ratio WPT	Limit	Test Results
0.05	0.2729	0.3229	1	Pass

Remark:1. Output power including tune-up tolerance;  
 2.Evaluate limits for WPT at Field-Strength Limit;  
 3.Max. SAR Ratio=Max. Evaluation Values/Sar Limit, So:  
 Maximum SAR Ratio BLE=0.002/1=0.002  
 Maximum SAR Ratio 2.4G Wi-Fi=0.05/1=0.05  
 Maximum SAR Ratio WPT=0.44/1.63+1.82/614=0.2729

## 6 Test Setup Photo



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