

RF EXPOSURE Test Report

Product: Magnetic Wireless Power Bank

Trade Mark: **UGREEN** 绿联

Model Number: PB567

FCC ID: 2AQI5-PB567A

Prepared for

Ugreen Group Limited

Ugreen Building, Longcheng Industrial Park, Longguanxi Road, Longhua,
518000 Shenzhen, PEOPLE'S REPUBLIC OF CHINA.

Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name..... : Ugreen Group Limited
Address : Ugreen Building, Longcheng Industrial Park, Longguanxi Road,
Longhua, 518000 Shenzhen, PEOPLE'S REPUBLIC OF CHINA.

Manufacturer's Name : Ugreen Group Limited
Address : Ugreen Building, Longcheng Industrial Park, Longguanxi Road,
Longhua, 518000 Shenzhen, PEOPLE'S REPUBLIC OF CHINA.

Product description

Product name : Magnetic Wireless Power Bank

Model Number : PB567

Standards : FCC CFR 47 PART 1 , 1.1310

Test procedure..... : KDB 680106 D01 Wireless Power Transfer v04

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test..... :

Date (s) of performance of tests..... : Sept. 19, 2025~Sept. 28, 2025

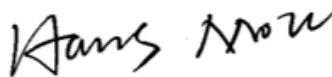
Test Result..... : **Pass**

Testing Engineer :



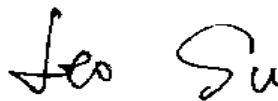
(Z o e S u)

Technical Manager :



(Hans Mou)

Authorized Signatory :



(L e o S u)

[illegible]

1 General Description

1.1 Description of EUT

Product name:	Magnetic Wireless Power Bank
Model name:	PB567
Series Model:	N/A
Different of series model:	N/A
Operation frequency:	111-148.5kHz, 360kHz
Operational mode:	Wireless charging
Modulation type:	ASK
Antenna type:	Coil Antenna
Battery:	20000mAh, 72Wh, 7.2V
Power supply:	USB-C(IN1) / USB-C Cable(IN2) Input: 5.0V=3.0A, 9.0V=3.0A, 12.0V=2.5A, 15.0V=2.0A; USB-C(OUT1) / USB-C Cable(OUT2) Output: 10.0V=2.25A, 5.0V=2.4A, 5.0V=3.0A, 9.0V=3.0A, 12.0V=2.5A, 15.0V=2.0A; USB-A(OUT3) Output: 10.0V=2.25A, 5.0V=2.4A, 5.0V=3.0A, 9.0V=2.0A, 12.0V= 1.5A; Wireless Charging Output: 15.0W Max; Total Output: 5.0V=1.5A+5.0W; Total Cell Capacity: 20000mAh; Battery Capacity: 10000mAh(Two Cells in Parallel); Rated Capacity: 11300mAh(TYP 5VDC 2.4A); Polymer Lithium-ion Battery Rated Energy: 72.0Wh, 7.2V
Adapter information:	N/A

Remark:

- P/N code in the below table, for marketing purpose, will be marked on the marking plate

55450	55450P	55450X	55450A	55450B	55450C	55450U	55450JP
55450ZD							

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	Wireless Output: 5W(111-148.5kHz)
2	Wireless Output: 7.5W(111-148.5kHz)
3	Wireless Output: 10W(111-148.5kHz)
4	Wireless Output: 15W(360kHz)

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
iPhone12 Pro Max	MGC33CH/A	F2LDX4T60 D5H	Apple Inc.
Phone	LE2120	8602840564 41073	Shenzhen Oneplus Technology Co., Ltd

Note: Wireless Output: For devices using 5W-10W power, the compatible phones are LE2120. For devices using 15W power, the compatible phone is iPhone 12 Pro Max.

2 Test Facilities and Accreditations

2.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

2.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 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 %.

The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.

In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

Measurement Frequency Range	U, (dB)	Note
RF frequency	2×10^{-5}	
E-field	± 2.5 dB	
H-field	± 4.2 dB	
Temperature	± 1 degree	
Humidity	± 5 %	

2.4 Test Software

Software name	Manufacturer	Model	Version
MAGPy V2.6	Schmid & Partner Engineering AG	MAGPy V2.6	V2.6

3 List of Test Equipment

Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E077	Magnetic Amplitude and Gradient Probe System	Schmid & Partner Engineering AG	MAGPy -8H3D+E3D	3107	2024-03-15	2026-03-14
2	HB-E078	Magnetic Amplitude and Gradient Probe System	Schmid & Partner Engineering AG	MAGPy-DAS	3097	2024-03-15	2026-03-14

Note: the calibration interval of the above test instruments is 24 months and the calibrations are traceable to international system unit (SI).

4 RF Exposure

4.1 Maximum Permissible Exposure

4.1.1. Limit

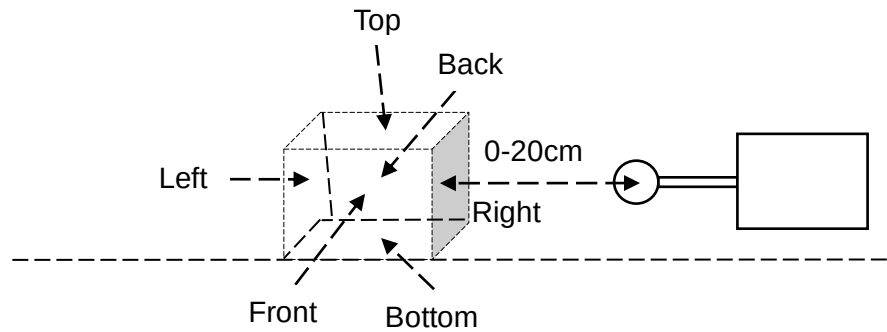
Frequency range(MHz)	Electric field strength(V/m)	Magnetic field strength(A/m)	Power density(mW/cm2)	Averaging time(minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0 6	6
300-1500			f/300	6
1500-100000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100000			1	30
f = frequency in MHz * = Plane-wave equivalent power density				

Per the guidance of KDB 680106, the E-field and H-field limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310 shown in the table above, 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 83 V/m for the electric field strength (E) and 90A/m for the magnetic field strength (H).

4.1.2. Test Procedures

- The RF exposure test was performed in anechoic chamber.
- 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 20 cm.
- The highest emission level was recorded and compared with limit.

4.1.3. Test Setup



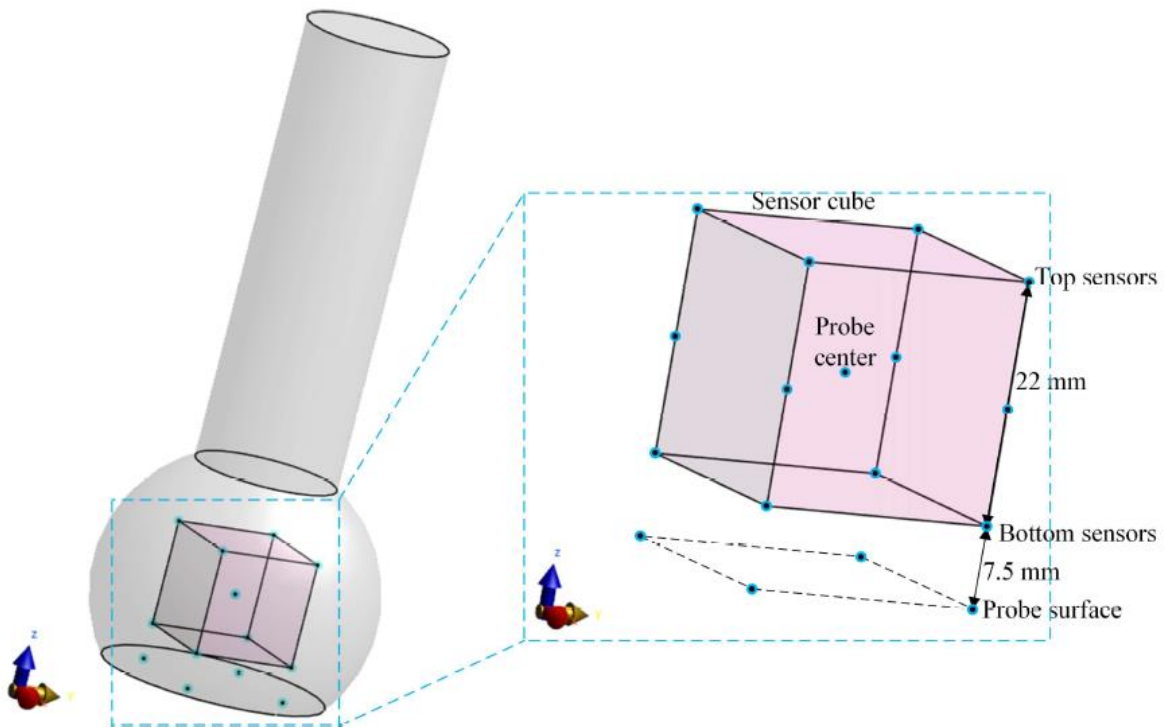
4.1.4. Test Result

For portable exposure condition:

Operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.

H-field measurements taken every 2 cm (starting as close to 20 cm as possible) on each edge/top surface of the host/client pair were also evaluated for portable use conditions. The report reflects data for the worst 0 cm test distance mode only.

In the MAGPy V2.6 implementation, the H-field is evaluated at the center of the probe (which is 18.5mm above the surface of its tip) and also at the surface of its tip.



The total H-field at the tip surface $H_{tip-surface}$ can be extrapolated using the total H-field measured at the top and bottom sensors (Figure 2.5), H_{top} and H_{bottom} , and the normalized H-field gradient G_n . The field extrapolation formula is a polynomial function of G_n ($\Delta d = 7.5\text{mm}$ is the sensor offset of the bottom sensors).

$$H_{tip-surface} = \frac{H_{bottom} + H_{top}}{2} \sum_{i=0}^7 c_i [G_n (\Delta d + 11 \text{ mm})]^i$$

The polynomial coefficients c_i were determined from simulations of 70 coils covering normalized gradients up to 80 for the 97.5th percentile. This provides a conservative estimate of the total H-field at the tip surface without large overestimation. Since the local (i.e., not spatial averaged) values of $H_{tip-surface}$ obtained from simulations were used for the curve fitting, $H_{tip-surface}$ estimated can be considered not suffered from the sensor averaging error. The field extrapolation formula is applied to four pairs of top and bottom sensors along the vertical (i.e., along z axis) edges of the sensor cube, and the H-field at the probe tip reported by MAGPy V2.6 adopts the average of the four extrapolated values.

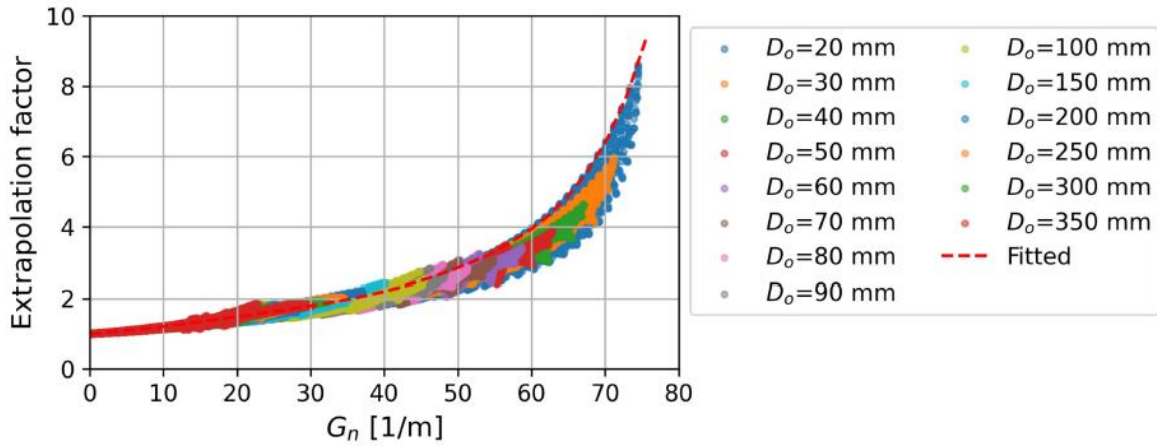


Figure 2.6: Extrapolation factors (i.e., ratios between the simulated results of $H_{tip-surface}$ and $\frac{H_{bottom} + H_{top}}{2}$) plotted as a function of the normalized H-field gradient. The data are from simulations of 70 coils with varying outer diameters D_o and filling ratios (0.1–0.9). The predication of the polynomial function $\sum_{i=0}^7 c_i [G_n (\Delta d + 11 \text{ mm})]^i$ with coefficients fitted for the 97.5th percentile (i.e., the red dashed line) is also shown.

Coefficient	Value
c_0	1.00
c_1	1.00
c_2	-0.764
c_3	14.5
c_4	-47.7
c_5	70.7
c_6	-48.7
c_7	13.1

Table 2.2: Coefficients of the polynomial function for the H-field extrapolation to the tip surface of the probe, determined with 0.975 quantile regression (i.e., the 97.5th percentile)

For compliance evaluation, MAGPy V2.6 evaluates the fundamental frequency f_0 (i.e., peak frequency) and the auxiliary frequencies (e.g., harmonics) of the source. The determination of these frequencies is described in section 2.3.9. The total E -field and H -field reported by MAGPy V2.6 are derived with the following equations:

$$H_{\text{tot,avg}}(f) = \sqrt{\left| \frac{1}{8} \sum_{m=1}^8 H_{m,x}(f) \right|^2 + \left| \frac{1}{8} \sum_{m=1}^8 H_{m,y}(f) \right|^2 + \left| \frac{1}{8} \sum_{m=1}^8 H_{m,z}(f) \right|^2}. \quad (1.4)$$

$$E_{\text{tot}}(f) = \sqrt{|E_x(f)|^2 + |E_y(f)|^2 + |E_z(f)|^2}. \quad (1.5)$$

In the above equations, $H_{m,x/y/z}(f)$ refers to the complex spectrum of the x/y/z sensor of the m th H -field subprobe, $E_{x/y/z}(f)$ denotes the complex spectrum of the x/y/z sensor of the E -field subprobe. Note that the magnetic field results are averaged over the eight H -field subprobes. The target frequency f can be the fundamental frequency or any of the auxiliary frequencies.

E -fields can be induced in the tissue at the tips of conductors or electrodes where electric charges accumulate. These charges will give rise to an E -field the dominant orientation of which is assumed to be perpendicular with respect to the surface of the exposed tissue, and the coupling mechanism for the quantification of the induced fields is capacitive. In comparison to the inductive coupling, the exposure (in terms of the surface SAR) decreases with up to the 4th power of the distance, depending on the electrode geometry and size. Additionally, the induced E -field is significantly attenuated with respect to the incident E -field due to the large contrast of the complex permittivity of the exposed tissue relative to the free space. The capacitive coupling mechanism is described in detail in [8]. By applying the expressions for the incident E -field of the electrode and the SAR at the surface and assuming the electrode-to-tissue distance is much smaller than the electrode radius, the ratio of the induced E -field at the tissue surface $E_{\text{ind,surface}}$ and the incident E -field $E_{\text{inc,surface}}$ can be approximated with the following equation:

$$\frac{E_{\text{ind,surface}}}{E_{\text{inc,surface}}} = 3.79 \frac{\epsilon_{\text{free-space}}}{|\epsilon_{\text{free-space}} + \epsilon_{\text{tissue}}|} = 3.79 \frac{8.85 \times 10^{-12}}{|8.85 \times 10^{-12}(1 + \epsilon_r) - j \frac{\sigma}{2\pi f}|} \quad (1.13)$$

Figure 2.7 shows the attenuation of the induced E -field at the surface of the tissue with the material properties specified in IEC 63184 [6, 9] ($\epsilon_r = 55$, $\sigma = 0.75 \text{ S/m}$, $\rho = 1000 \text{ kg/m}^3$) calculated using Equation (1.13). Applying Equation (1.13) and with the dielectric properties of the tissues simulating liquid of the homogeneous phantom specified in IEC 63184 enables the assessment of the induced E -field E_{ind} from the measured incident E -field E_{inc} . Both the induced current density J_{ind} and SAR can be derived from E_{ind} : $J_{\text{ind}} = \sigma E_{\text{ind}}$, $\text{SAR} = \sigma E_{\text{ind}}^2 / \rho$. Note that the induced fields estimated here correspond to the local peak SAR at the phantom surface and not the spatial peak average SAR (e.g., of a cubical volume of 10 g mass).

Test condition 1: Mode 4 operating mode with client device (1 % battery status of client device).
Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E -field(V/m)	H-field(A/m)
<1%	Top	0	54	0.24
<1%	Left	0	57.6	0.13
<1%	Right	0	25.1	0.33
<1%	Front	0	23.6	0.28
<1%	Back	0	25.3	0.35
<1%	Bottom	0	18.9	0.06
Limit			614	1.63
Margin Limit (%)			9.4%	21.5%

When setting MAGPy to select compliance location as probe tip, the measured value is extrapolated to 0mm as the result.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E -field(V/m)	H-field(A/m)
<1%	Top	0	60	0.91
<1%	Left	0	60.4	0.22
<1%	Right	0	23.6	1.01
<1%	Front	0	24.4	0.78
<1%	Back	0	34.9	1.28
<1%	Bottom	0	17.6	0.19
Limit			614	1.63
Margin Limit (%)			9.9%	78.6%

Test condition 2: Mode 3 operating mode with client device (1 % battery status of client device).
Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E -field(V/m)	H-field(A/m)
<1%	Top	0	90.1	0.54
<1%	Left	0	39.6	0.61
<1%	Right	0	37.8	0.53
<1%	Front	0	23.6	0.56
<1%	Back	0	31.8	0.12
<1%	Bottom	0	125	0.19
Limit			614	1.63
Margin Limit (%)			20.4%	37.5%

When setting MAGPy to select compliance location as probe tip, the measured value is extrapolated to 0mm as the result.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E -field(V/m)	H-field(A/m)
<1%	Top	0	89.2	0.61
<1%	Left	0	45.3	0.93
<1%	Right	0	44.1	0.95
<1%	Front	0	24.6	0.91
<1%	Back	0	29.4	0.22
<1%	Bottom	0	167	0.34
Limit			614	1.63
Margin Limit (%)			27.2%	58.3%

******* END OF REPORT *******