RF EXPOSURE Test Report

Product: Anker 622 Magnetic Battery (MagGo)

Trade Mark: N/A

Model Number: A1614

FCC ID: 2AOKB-A1614A

Prepared for

Anker Innovations Limited

Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

Prepared by

Shenzhen HongBiao Certification& Testing Co., Ltd

Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China

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TEST RESULT CERTIFICATION

Applicant's Name..... Anker Innovations Limited

Address ..... Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

Manufacturer's Name..... Anker Innovations Limited

Address ..... Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

Product description

Product name ..... Anker 622 Magnetic Battery (MagGo)

Model Number A1614

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 .. May 21, 2024~June 13, 2024

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

Testing Engineer : Zoe Su

(Zoe Su)

Technical Manager : Ming Liu

(Ming Liu)

Authorized Signatory : Leo Su

(Leo Su)

Revision History

Revised No.	Date of Issue	Description
01	June 13, 2024	Original

1 General Description

1.1 Description of EUT

Product name:	Anker 622 Magnetic Battery (MagGo)
Model name:	A1614
Series Model:	N/A
Different of series model:	N/A
Operation frequency:	111kHz–205kHz
Operational mode:	Wireless charging
Modulation type:	ASK
Antenna type:	Coil Antenna
Battery:	DC 3.85V,5000mAh,19.25Wh
Power supply:	USB-C Input: DC5V/2.4A USB-C Output: DC5V/2.4A Wireless Output: 5W/7.5W Total Output:12W
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	Wireless Output: 7.5W
2	Wireless Output: 5W
3	Stand-by mode

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
Phone	iPhone 12 Pro	DNPF9UL20D9L	Apple Inc.
Adapter	TA65B	2S36003438PL97T09582	Powerland Technology Inc.

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:	15ºC~35ºC
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 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 %.

Measurement Frequency Range	U，(dB)	Note
RF frequency	2x 10^{-5}	
E-field	± 1.06 dB	
H-field	± 0.7 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	2025-03-16
2	HB-E078	Magnetic Amplitude and Gradient Probe System	Schmid & Partner Engineering AG	MAGPy-DAS	3097	2024-03-15	2025-03-16

Note: the calibration interval of the above test instruments is 12 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				

4.1.2. Test Procedures

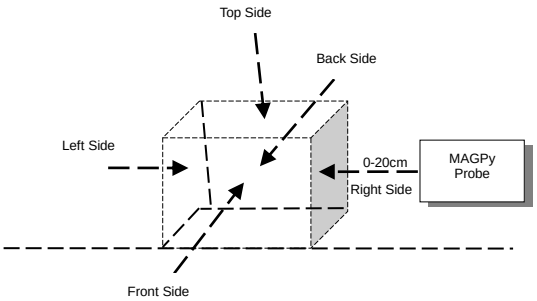
a. The RF exposure test was performed in anechoic chamber.

b. 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.

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of TCB Workshop “41-Part-18-&-Wireless-Power-Transfer - April 27, 2022”

4.1.3. Test Setup



4.1.4. Equipment Approval Considerations item 5 b) of KDB 680106 D01 Wireless Power Transfer v04

Requirement	Device
1. Power transfer frequency is less than 1 MHz.	Yes. The operating frequencies are: Operating Frequency: 111kHz–205kHz
2. Output power from each primary coil is less than or equal to 15 watts.	Yes. The maximum output power is: Wireless Output: 7.5W
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.	Yes. EUT has a source primary coil.
4. Client device is placed directly in contact with the transmitter.	Yes. The client device is placed directly in contact with the transmitter.
5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	No, EUT includes portable conditions.
6. The aggregate H-field strengths anywhere at or beyond 20 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. See the test result in item 4.1.5

4.1.5. Test Result

For portable exposure condition:

Operating modes with client device (10 %, 50%, 90% battery status of client device) have been test, only show the data of worst case of 10% 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.

Test condition 1: Mode 1 operating mode with client device (10 % battery status of client device).

When using the testing instrument MAGPy for testing, when selecting compliance location as probe tip in the settings, the measured value is extrapolated to 0mm

Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	0	11.38	0.51
<10%	Left	0	8.47	0.40
<10%	Right	0	9.04	0.34
<10%	Front	0	8.49	0.37
<10%	Back	0	8.45	0.41
<10%	Bottom	0	10.51	0.48
Limit			614	1.63
Margin Limit (%)			1.85%	31.29%

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)
<10%	Top	0	13.45	0.60
<10%	Left	0	9.49	0.49
<10%	Right	0	9.62	0.41
<10%	Front	0	9.42	0.45
<10%	Back	0	9.47	0.50
<10%	Bottom	0	11.06	0.58
Limit			614	1.63
Margin Limit (%)			2.19%	36.81%

Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	2	11.12	0.48
<10%	Left	2	8.24	0.37
<10%	Right	2	8.76	0.33
<10%	Front	2	8.12	0.36
<10%	Back	2	8.06	0.39
<10%	Bottom	2	10.15	0.38
Limit			614	1.63
Margin Limit (%)			1.81%	29.45%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	2	13.05	0.59
<10%	Left	2	9.14	0.48
<10%	Right	2	9.23	0.39
<10%	Front	2	9.11	0.42
<10%	Back	2	9.21	0.46
<10%	Bottom	2	10.56	0.55
Limit			614	1.63
Margin Limit (%)			2.13%	36.20%

Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	4	10.42	0.42
<10%	Left	4	7.56	0.33
<10%	Right	4	7.89	0.31
<10%	Front	4	7.42	0.32
<10%	Back	4	7.16	0.33
<10%	Bottom	4	9.35	0.35
Limit			614	1.63
Margin Limit (%)			1.70%	25.77%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	4	12.63	0.55
<10%	Left	4	9.04	0.42
<10%	Right	4	8.86	0.34
<10%	Front	4	8.27	0.37
<10%	Back	4	8.63	0.39
<10%	Bottom	4	9.24	0.47
Limit			614	1.63
Margin Limit (%)			2.06%	33.74%

Measurement results directly tested using MAGPy.

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	6	9.12	0.39
<10%	Left	6	6.42	0.32
<10%	Right	6	6.71	0.28
<10%	Front	6	6.38	0.31
<10%	Back	6	6.41	0.27
<10%	Bottom	6	8.52	0.32
Limit			614	1.63
Margin Limit (%)			1.49%	23.93%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	6	11.86	0.52
<10%	Left	6	8.52	0.37
<10%	Right	6	8.12	0.31
<10%	Front	6	7.69	0.33
<10%	Back	6	7.91	0.32
<10%	Bottom	6	8.94	0.41
Limit			614	1.63
Margin Limit (%)			1.93%	31.90%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	8	11.02	0.47
<10%	Left	8	8.11	0.35
<10%	Right	8	7.86	0.29
<10%	Front	8	7.43	0.31
<10%	Back	8	7.28	0.28
<10%	Bottom	8	8.39	0.37
Limit			614	1.63
Margin Limit (%)			1.79%	28.83%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	10	10.54	0.45
<10%	Left	10	7.69	0.32
<10%	Right	10	7.46	0.27
<10%	Front	10	7.22	0.30
<10%	Back	10	7.10	0.27
<10%	Bottom	10	8.08	0.35
Limit			614	1.63
Margin Limit (%)			1.72%	27.61%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	12	10.11	0.43
<10%	Left	12	7.24	0.29
<10%	Right	12	7.05	0.26
<10%	Front	12	6.92	0.28
<10%	Back	12	7.02	0.24
<10%	Bottom	12	8.01	0.33
Limit			614	1.63
Margin Limit (%)			1.65%	26.38%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	14	9.63	0.41
<10%	Left	14	7.11	0.27
<10%	Right	14	6.83	0.23
<10%	Front	14	6.77	0.25
<10%	Back	14	6.59	0.22
<10%	Bottom	14	7.25	0.31
Limit			614	1.63
Margin Limit (%)			1.57%	25.15%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	16	8.78	0.39
<10%	Left	16	6.54	0.24
<10%	Right	16	6.42	0.21
<10%	Front	16	6.31	0.23
<10%	Back	16	6.22	0.20
<10%	Bottom	16	7.11	0.27
Limit			614	1.63
Margin Limit (%)			1.43%	23.93%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	18	8.23	0.36
<10%	Left	18	6.14	0.22
<10%	Right	18	6.06	0.18
<10%	Front	18	6.12	0.21
<10%	Back	18	6.04	0.17
<10%	Bottom	18	6.85	0.24
Limit			614	1.63
Margin Limit (%)			1.34%	22.09%

When setting MAGPy to select compliance location as probe tip

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<10%	Top	20	7.11	0.32
<10%	Left	20	5.46	0.18
<10%	Right	20	5.38	0.16
<10%	Front	20	5.76	0.17
<10%	Back	20	5.14	0.15
<10%	Bottom	20	5.27	0.21
Limit			614	1.63
Margin Limit (%)			1.16%	19.63%

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