

RF EXPOSURE Test Report

Product: Power Bank (Poseidon Nano)

Trade Mark: N/A

Model Number: PN30GYBR

FCC ID: 2BDQC-PN30GYBR

Prepared for

Dark Energy, LLC

5288 Commerce Dr Suite B258, Rm 2 Murray UT 84107 United States

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

Tel.: +86-755-2998 9321 Fax.: +86-755-2998 5110

Website: <http://www.sz-hongbiao.com>

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TEST RESULT CERTIFICATION

Applicant's Name : Dark Energy, LLC
Address : 5288 Commerce Dr Suite B258, Rm 2 Murray UT 84107 United States
Manufacturer's Name : Dark Energy, LLC
Address : 5288 Commerce Dr Suite B258, Rm 2 Murray UT 84107 United States

Product description

Product name : Power Bank (Poseidon Nano)
Model Number : PN30GYBR

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 :

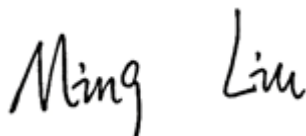
Date (s) of performance of tests : Nov. 17, 2023~ Nov. 23, 2023

Test Result : **Pass**

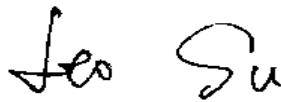
Testing Engineer :


(Z o e S u)

Technical Manager :


(Ming Liu)

Authorized Signatory :


(L e o S u)

[illegible]

1 General Description

1.1 Description of EUT

Product name:	Power Bank (Poseidon Nano)
Model name:	PN30GYBR
Series Model:	N/A
Different of series model:	N/A
Operation frequency:	115kHz~205kHz
Operational mode:	Wireless charging
Modulation type:	ASK
Antenna type:	Coil Antenna
Hardware version:	V3.0
Software version:	V1.0
Battery:	DC 3.7V, 3000mAh, 11.1Wh
Power supply:	USB-C Input: DC 5V/2.4A USB-C Output: DC 5V/2.4A Wireless Output: 5W
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	USB-C Input DC 5V/2.4A+Wireless Output: 5W

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 12pro	/	Apple Inc.
Adapter	MDY-10-EH	AA61905921 427IG	Selkang (Guigang) Co., Ltd

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 %.

Measurement Frequency Range	U, (dB)	Note
RF frequency	2×10^{-5}	
RF power, conducted	± 0.57 dB	
Conducted emission(150kHz~30MHz)	± 2.5 dB	
Radiated emission(30MHz~1GHz)	± 4.2 dB	
Radiated emission (above 1GHz)	± 4.7 dB	
Temperature	± 1 degree	
Humidity	± 5 %	

2.4 Test Software

Software name	Manufacturer	Model	Version
EHP200-TS	Narda	EHP-200A	Rel 1.95

3 List of Test Equipment

Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E073	Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX11013	2023-06-09	2024-06-08

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

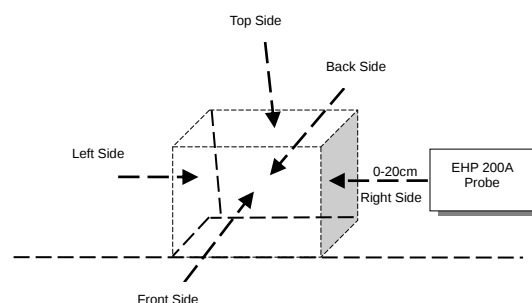
Frequency range(MHz)	Electric field strength(V/m)	Magnetic field strength(A/m)	Power density(mW/cm ²)	Averaging time(minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0 6	6
300-1500	/	/	f/300	6
1500-100000	/	/	5	6
(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

- 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.
- 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: 115 kHz – 205 kHz
2. Output power from each primary coil is less than or equal to 15 watts	Yes. The maximum output power is: Wireless Output: 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.	No. See the test result in item 4.1.5

4.1.5. Test Result

For portable exposure condition:

Note: 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.

Test condition 1: Mode 1 operating mode with client device (1 % battery status of client device)
-test distance: 0cm

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E-field(V/m)	H-field(A/m)
<1%	Top	0	5.4026	0.1241
<1%	Left	0	4.5014	0.4221
<1%	Right	0	3.2134	0.0542
<1%	Front	0	4.0502	0.0465
<1%	Back	0	6.8215	0.0479
<1%	Bottom	0	16.264	0.0542
Limit			614	1.63
Margin Limit (%)			1.44%	25.90%

5 Photographs of the Test Setup

MPE



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