FCC Test Report

Client Name	:	**SHO PRODUCTS, LLC**
Client Address	:	**1602 Lockness Place, Torrance, CA 90501**
Product Name	:	**CARTA2 Wireless Charger**
Report Date	:	**Apr. 24, 2024**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	SHO PRODUCTS, LLC
Manufacturer	:	SHO PRODUCTS, LLC
Product Name	:	CARTA2 Wireless Charger
Model No.	:	955465P
Trade Mark	:	FOCUS V
Rating(s)	:	CAPACITY:3.7V,10000mAh/37Wh INPUT: 5V/3A,9V/2A,12V/1.5A OUTPUT Type-C: PD(5V/3A,9V/2A,12V/1.5A) USB:QC3.0(5V/3A,9V/2A,12V/1.5A) Wireless: 15W/10W/7.5W/5W Total output: 18W
Test Standard(s)	:	**FCC Part 1.1310, 1.1307(b)**
Test Method(s)	:	**KDB680106 D01 RF Exposure Wireless Charging Apps v03r01;** **October 2021 TCB Workshop;** **Part 18 and Wireless Power Transfer Updates- April 2022 TCB Workshop**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 1.1307 & KDB680106 D01 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt Feb. 17, 2023

Date of Test Feb. 17~Mar. 01, 2023

Prepared By

Ella Liang

(Ella Liang)

Approved & Authorized Signer

Edward pan

(Edward Pan)

Revision History

Report Version	Description	Issued Date
R00	Original Issue.	Apr. 24, 2024

1. General Information

1.1. Client Information

Applicant	:	SHO PRODUCTS, LLC
Address	:	1602 Lockness Place, Torrance, CA 90501
Manufacturer	:	SHO PRODUCTS, LLC
Address	:	1602 Lockness Place, Torrance, CA 90501
Factory	:	FOCUS HI-TECH CO.,LTD
Address	:	Building C,Jingfukang Industrial zone, FengHuang Road No.9, Torch development district, Zhongshan, China, 528437

1.2. Description of Device (EUT)

Product Name	:	CARTA2 Wireless Charger
Model No.	:	955465P
Trade Mark	:	FOCUS V
Test Power Supply	:	AC 120V, 60Hz for adapter
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Operation Frequency	:	110.1-205KHz
Modulation Type	:	ASK
Antenna Type	:	Inductive loop coil Antenna
Antenna Gain(Peak)	:	0 dBi
Remark: (1) All of the RF specification are provided by customer. (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Description	Rating(s)
Adapter	Model: MDY-11-EX Input: 100-240V-0.7A,50-60Hz Output: 5V⎓3A,9V⎓3A,12V⎓2.25A,20V⎓1.35A,11V⎓3A
Wireless charging load	Manufacturer: Shenzhen Ouju Technology Co., Ltd. M/N: CD2577 Power: 5W/7.5W/10W/15W

1.4. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Electric and Magnetic field Analyzer	NARDA	EHP-200A	180ZX10202	Oct. 17, 2022	1 Year

1.5. Measurement Uncertainty

Magnetic Field Reading(A/m)	:	+/-0.04282(A/m)
Electric Field Reading(V/m)	:	+/-0.03679(V/m)

1.6. Description of Test Facility

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

FCC-Registration No.: 434132

Shenzhen Anbotek Compliance Laboratory Limited, 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 our files. Registration No. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China. 518102

2. Measurement and Result

2.1. Requirements

According to the item 5.b) of KDB 680106 D01v03:
Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

1) Power transfer frequency is less that 1 MHz

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

3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils

4) Client device is inserted in or placed directly in contact with the transmitter

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

6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

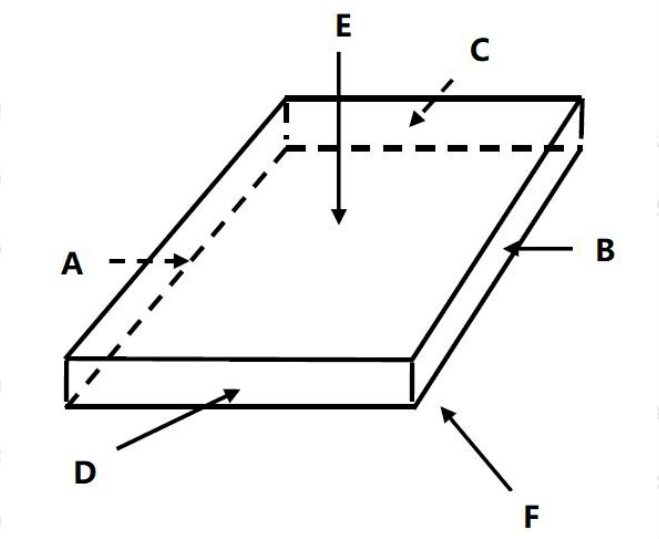
Limits For Maximum Permissible Exposure (MPE)

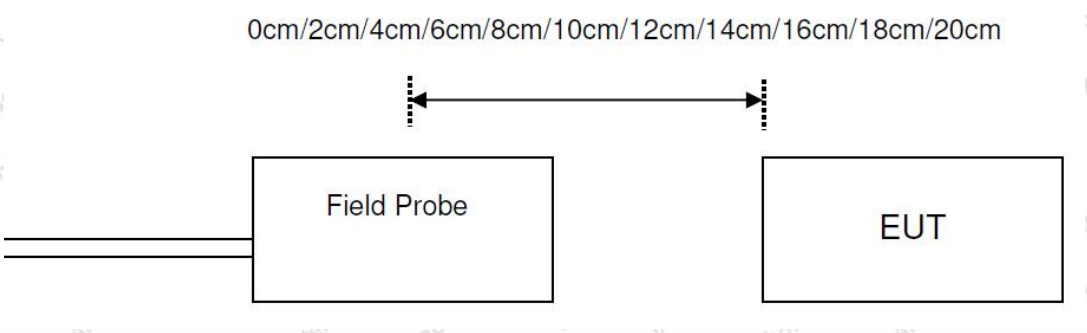
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*($900/f^2$)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	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
1500-100,000	/	/	1.0	30

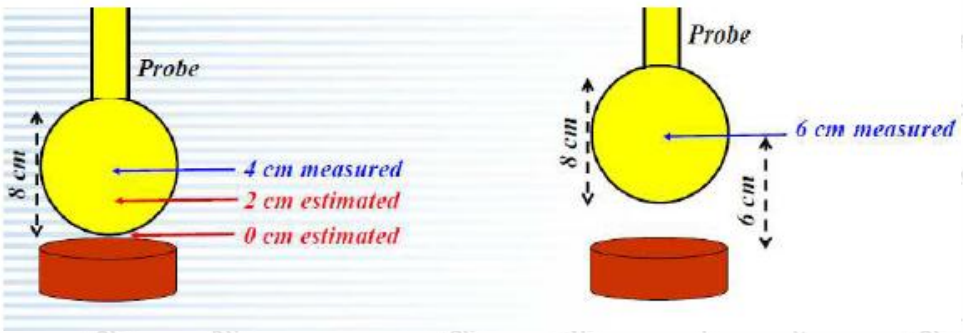
F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

2.2. Test Setup

Six side of EUT







Note:
H-field data are taken along all three axes the device, from 0,2,4 cm, 6cm to 20 cm, in 2 cm minimum increment measured from the edge of the device, with one axis coincident with the axis of the main coil.

2.3. Test Procedure

1) The RF exposure test was performed in anechoic chamber.
2) The measurement probe was placed at required test distance (from 0,2,4 cm, 6cm to 20 cm, in 2 cm minimum increment) which is between the edge/top surface of the charger and the geometric center of probe.

3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed. (A is the left, B is the right, C is the back, D is the front, **E** is the **top** and F is the bottom side.)

4) The EUT was measured according to the dictates of TCB Workshop, April 27, 2022 and KDB 680106 D01 v03r01.

Remark;

The EUT's test position A, B, C, D, E and F is valid for the E and H field measurements.

2.4. Test Result

2.4.1. Equipment Approval Considerations item 5.b of KDB 680106 D01 v03.

1) Power transfer frequency is less that 1 MHz

- The device operate in the frequency range 110.1-205KHz.

2) Output power from each primary coil is less than 15 watts

- The maximum output power of the primary coil is 15W.

3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils

- The transfer system including a charging system with only single primary coils is to detect and allow only between individual pairs of coils.

4) Client device is inserted in or placed directly in contact with the transmitter

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

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

- The EUT is a portable exposure conditions

6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

- Conducted the measurement with the required distance and the test results please refer to the section 2.4.

2.4.2. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

Temperature:	23.8°C	Relative Humidity:	52 %
Pressure:	1012 hPa	Test Voltage:	AC 120V, 60Hz for adapter
Frequency Range:	110.1-205KHz		

Note: All the situation(full load, half load and empty load) has been tested,only the worst situation (full load 15W) was recorded in the report.

E-Field Strength								
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Reference Limit (V/m)	Limits Test (V/m)
EUT Base support input + Standby								
0cm	1%	0.56	0.65	0.58	0.57	0.68	307	614
	50%	1.44	1.92	1.38	1.54	1.70	307	614
	99%	2.49	2.94	2.52	2.48	2.98	307	614
EUT Base support input+wireless load								
0,2,4cm	1%	0.51	0.60	0.51	0.50	0.61	307	614
	50%	1.42	1.86	1.35	1.53	1.64	307	614
	99%	2.44	2.90	2.48	2.44	2.93	307	614
	50%	1.43	1.86	1.54	1.55	1.65	307	614
	99%	2.47	2.93	2.47	2.45	2.96	307	614
6cm	1%	0.44	0.51	0.44	0.42	0.54	307	614
	50%	1.44	1.88	1.55	1.55	1.63	307	614
	99%	2.42	2.88	2.42	2.40	2.89	307	614
8cm	1%	0.41	0.47	0.42	0.39	0.52	307	614
	50%	1.42	1.87	1.54	1.54	1.63	307	614
	99%	2.33	2.78	2.33	2.31	2.81	307	614
10cm	1%	0.40	0.49	0.44	0.38	0.52	307	614
	50%	1.40	1.82	1.52	1.52	1.60	307	614
	99%	2.34	2.77	2.33	2.31	2.80	307	614
12cm	1%	0.32	0.42	0.38	0.32	0.44	307	614
	50%	1.30	1.72	1.40	1.39	1.50	307	614
	99%	2.41	2.84	2.37	2.37	2.86	307	614

E-Field Strength								
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Reference Limit (V/m)	Limits Test (V/m)
14cm	1%	0.31	0.41	0.37	0.31	0.44	307	614
	50%	1.31	1.72	1.40	1.40	1.50	307	614
	99%	2.40	2.82	2.36	2.37	2.83	307	614
16cm	1%	0.39	0.49	0.45	0.39	0.51	307	614
	50%	1.27	1.67	1.35	1.36	1.44	307	614
	99%	2.30	2.72	2.27	2.26	2.74	307	614
18cm	1%	0.28	0.38	0.34	0.27	0.40	307	614
	50%	1.35	1.76	1.45	1.46	1.54	307	614
	99%	2.29	2.72	2.27	2.25	2.74	307	614
20cm	1%	0.32	0.33	0.39	0.32	0.45	307	614
	50%	1.24	1.63	1.32	1.33	1.43	307	614
	99%	2.23	2.67	2.22	2.20	2.69	307	614

H-Field Strength								
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Reference Limit (A/m)	Limits Test (A/m)
EUT Base support input + Standby								
0cm	1%	0.029	0.048	0.051	0.039	0.047	0.815	1.63
	50%	0.39	0.46	0.37	0.35	0.58	0.815	1.63
	99%	0.44	0.62	0.51	0.31	0.33	0.815	1.63
EUT Base support input+wireless load								
0,2,4cm	1%	0.068	0.086	0.090	0.077	0.089	0.815	1.63
	50%	0.35	0.42	0.34	0.34	0.55	0.815	1.63
	99%	0.43	0.59	0.51	0.29	0.31	0.815	1.63
	50%	0.42	0.49	0.41	0.41	0.62	0.815	1.63
	99%	0.51	0.69	0.59	0.40	0.40	0.815	1.63
6cm	1%	0.107	0.128	0.130	0.117	0.131	0.815	1.63
	50%	0.40	0.45	0.37	0.39	0.60	0.815	1.63
	99%	0.44	0.58	0.51	0.30	0.33	0.815	1.63
8cm	1%	0.070	0.090	0.091	0.079	0.091	0.815	1.63
	50%	0.31	0.41	0.33	0.34	0.56	0.815	1.63
	99%	0.39	0.56	0.48	0.28	0.30	0.815	1.63
10cm	1%	0.077	0.097	0.096	0.086	0.096	0.815	1.63
	50%	0.28	0.37	0.28	0.28	0.51	0.815	1.63
	99%	0.40	0.59	0.51	0.32	0.31	0.815	1.63
12cm	1%	-0.005	0.015	0.013	0.004	0.015	0.815	1.63
	50%	0.21	0.31	0.21	0.21	0.46	0.815	1.63
	99%	0.34	0.53	0.46	0.28	0.27	0.815	1.63

H-Field Strength								
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Reference Limit (A/m)	Limits Test (A/m)
14cm	1%	0.075	0.094	0.093	0.084	0.094	0.815	1.63
	50%	0.27	0.37	0.26	0.25	0.49	0.815	1.63
	99%	0.35	0.53	0.47	0.29	0.28	0.815	1.63
16cm	1%	0.044	0.063	0.062	0.051	0.060	0.815	1.63
	50%	0.17	0.25	0.15	0.14	0.39	0.815	1.63
	99%	0.30	0.50	0.43	0.26	0.25	0.815	1.63
18cm	1%	0.090	0.108	0.106	0.097	0.104	0.815	1.63
	50%	0.16	0.25	0.14	0.13	0.38	0.815	1.63
	99%	0.29	0.47	0.41	0.26	0.25	0.815	1.63
20cm	1%	0.015	0.033	0.031	0.022	0.029	0.815	1.63
	50%	0.25	0.33	0.23	0.22	0.46	0.815	1.63
	99%	0.32	0.50	0.43	0.29	0.28	0.815	1.63

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_MPE

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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