TEST REPORT

Report Reference No.....:	**GTS20210325013-1-2**
FCC ID. ..... :	**2AZN2-U2**
Compiled by (position+printed name+signature)..:	File administrators Jimmy Wang
Supervised by (position+printed name+signature)..:	Test Engineer Aaron Tan
Approved by (position+printed name+signature)..:	Manager Jason Hu
Date of issue.....:	Mar. 23, 2021
Representative Laboratory Name.:	**Shenzhen Global Test Service Co., Ltd.**
Address .....:	No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong
Applicant's name.....:	**saiang hao keji shenzhen youxian gongsi**
Address .....:	Room 301, Building 3, Zhonghao Zone 1, Xuexiang Community, Bantian Street, Longgang District, Shenzhen, China
Test specification.....:	
Standard .....:	**FCC Rules and Regulations part 2.1091** **KDB680106 D01 v03r01**
TRF Originator.....:	Shenzhen Global Test Service Co.,Ltd.
Master TRF.....:	Dated 2014-12

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Test item description .....:	Wireless car charger
Trade Mark .....:	UUTO
Manufacturer .....:	Shenzhen Greentech Technology Co., Ltd.
Model/Type reference.....:	U2
Listed Models .....:	U1, U3, U4, U5
Modulation Type .....:	ASK
Operation Frequency.....:	From 110KHz~205KHz
Rating .....:	DC 12V/2A or 9V/2A or 5V/2A
Result .....:	**PASS**

TEST REPORT

Test Report No. :	GTS20210325013-1-2	Mar. 23, 2021 Date of issue

Equipment under Test	:	Wireless car charger
Model /Type	:	U2
Listed Models	:	U1, U3, U4, U5
Applicant	:	**saiang hao keji shenzhen youxian gongsi**
Address	:	Room 301, Building 3, Zhonghao Zone 1, Xuexiang Community, Bantian Street, Longgang District, Shenzhen, China
Manufacturer	:	**Shenzhen Greentech Technology Co., Ltd.**
Address	:	4nd Floor, No. 3 Building, Baokun Industrial Park, Dalang, Longhua, Shenzhen, Guangdong, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 SUMMARY

1.1 General Remarks

Date of receipt of test sample	:	Mar. 10, 2021
Testing commenced on	:	Mar. 11, 2021
Testing concluded on	:	Mar. 22, 2021

1.2 Product Description

Product Name:	Wireless car charger
Model/Type reference:	U2
Hardware version:	R2-TX8605-1.13
Software version:	V1.0
Test samples ID:	GTS20210325013-1-1#
Power supply:	DC 12V/2A or 9V/2A or 5V/2A
Operation frequency:	110KHz - 205KHz
Modulation type:	ASK
Antenna type:	Loop coil antenna

1.3 Description of the test mode

Equipment under test was operated during the measurement under the following conditions:
☒ Charging and communication mode

Test Modes:		
Mode 1	AC/DC Adapter (12V/2A) + EUT + Wireless charger tester (Load 15W)	Record
Mode 2	AC/DC Adapter (12V/2A) + EUT + Wireless charger tester (Load 10W)	Record
Mode 3	AC/DC Adapter (12V/2A) + EUT + Wireless charger tester (Load 5W)	Record
Mode 1	AC/DC Adapter (9V/2A) + EUT + Wireless charger tester (Load 15W)	Pre-tested
Mode 2	AC/DC Adapter (9V/2A) + EUT + Wireless charger tester (Load 10W)	Pre-tested
Mode 3	AC/DC Adapter (9V/2A) + EUT + Wireless charger tester (Load 5W)	Pre-tested
Mode 4	AC/DC Adapter (5V/2A) + EUT + Wireless charger tester (Load 15W)	Pre-tested
Mode 5	AC/DC Adapter (5V/2A) + EUT + Wireless charger tester (Load 10W)	Pre-tested
Mode 6	AC/DC Adapter (5V/2A) + EUT + Wireless charger tester (Load 5W)	Pre-tested
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

1.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
Adapter	UGREEN	CD137	Input: 100-240V~, 50/60Hz, 0.5A Output: 5V⎓2A / 9V⎓2A / 12V ⎓2A	CE/FCC	laboratory
Wireless charger tester	/	SW-MK-89898	Full Protocol Wireless Chager Tester, 5W / 7.5W / 10W / 15W four gear switchable	CE/FCC	laboratory
/	/	/	/	/	/
/	/	/	/	/	/

1.5 Modifications

No modifications were implemented to meet testing criteria.

2 TEST ENVIRONMENT

2.1 Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

2.2 Test Facility

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

FCC-Registration No.: 165725

Shenzhen Global Test Service Co.,Ltd 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.

A2LA-Lab Cert. No.: 4758.01

Shenzhen Global Test Service Co.,Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

CNAS-Lab Code: L8169

Shenzhen Global Test Service Co.,Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories. Date of Registration: Dec. 11, 2015. Valid time is until Dec. 10, 2024.

2.3 Environmental conditions

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

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.4 Summary of measurement results

Test Item	Result
Electric Field Strength (E) (V/m)	Compliant
Magnetic Field Strength (H) (A/m)	Compliant

2.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GTS laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.12 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.6 Equipments Used during the Test

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 26, 2020	Dec. 25, 2021
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 26, 2020	Dec. 25, 2021
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 26, 2020	Dec. 25, 2021
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 26, 2020	Dec. 25, 2021
Broadband Field Meter	NARDA	NBM-550	-	Dec. 26, 2020	Dec. 25, 2021
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 26, 2020	Dec. 25, 2021
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 26, 2020	Dec. 25, 2021
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 26, 2020	Dec. 25, 2021

Note: The Cal.Interval was one year.

3 TEST CONDITIONS AND RESULTS

3.1 Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.
According KDB 680106 D01 RF Exposure Fast Wireless Charger App v03

3.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

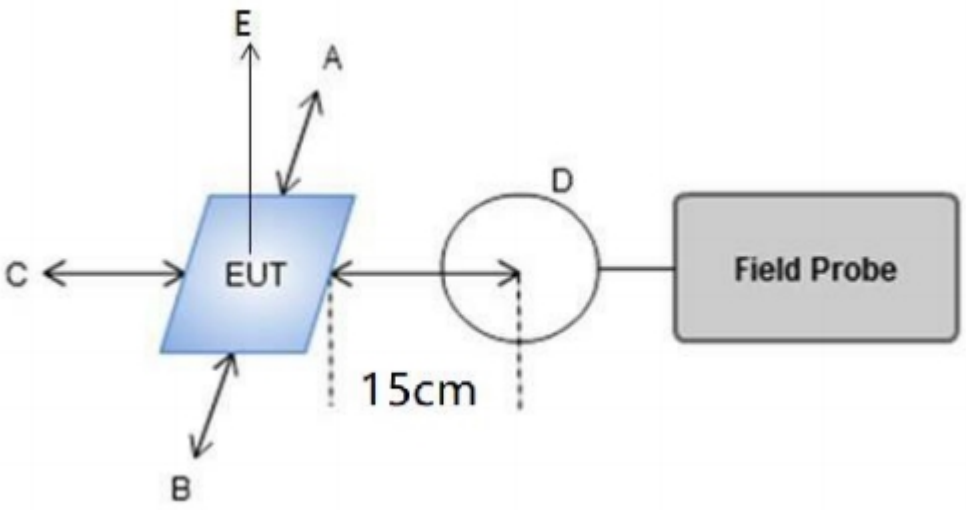
Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

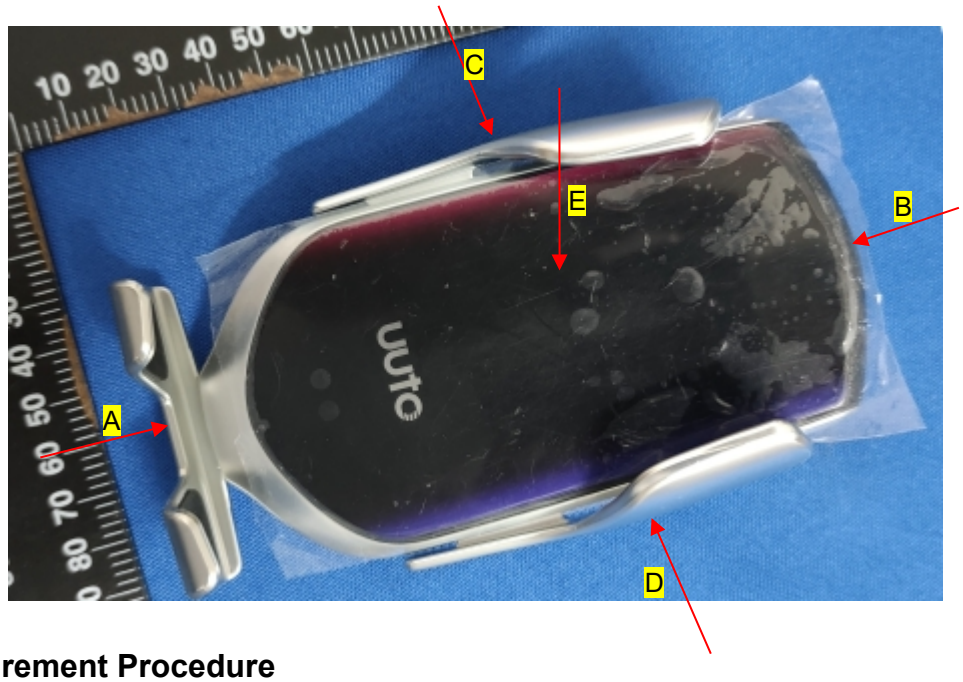
F=frequency in MHz
*=Plane-wave equivalent power density

3.3 Test Setup



Note: A, B, C, D, E, F for six surfaces of the product.

The surfaces of the EUT is defined as figure below:



3.4 Measurement Procedure

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric centre of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
e) The EUT were measured according to the dictates of KDB 680106 D01 RF Exposure Fast Wireless Charger App v03.

3.5 Test Result of E and H field Strength

Temperature:	22.8℃	Humidity:	56%
Test Engineer:	Moon Tan	Test site:	Anechoic chamber

E-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

Power Load	Unit	Frequency Range (MHz)	Measured E-Field Strength Values (V/m)					FCC E-Field Strength 50% Limits (V/m)	FCC E-Field Strength Limits (V/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
15W	v/m	0.1278	69.745	73.892	76.154	72.384	91.611	307.0	614.0
10W	v/m	0.1278	64.090	65.598	69.745	65.221	84.825	307.0	614.0
5W	v/m	0.1278	56.927	55.419	62.582	55.042	78.039	307.0	614.0

Note: V/m= A/m *377

H-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

Power Load	Unit	FrequencyRange (MHz)	Measured H-Field Strength Values (A/m)					FCC H-Field Strength50 % Limits (A/m)	FCC H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
15W	uT	0.1278	0.2313	0.2450	0.2525	0.2400	0.3038	--	--
15W	A/m	0.1278	0.185	0.196	0.202	0.192	0.243	0.815	1.63
10W	uT	0.1278	0.2125	0.2175	0.2313	0.2163	0.2813	--	--
10W	A/m	0.1278	0.170	0.174	0.185	0.173	0.225	0.815	1.63
5W	uT	0.1278	0.1888	0.1838	0.2075	0.1825	0.2588	--	--
5W	A/m	0.1278	0.151	0.147	0.166	0.146	0.207	0.815	1.63

Note:A/m=uT/1.25

H-Field Strength at 20cm from the top surface of the EUT

Power Load	Unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
			Test Position E		
15W	uT	0.1278	0.2700	--	--
15W	A/m	0.1278	0.216	0.815	1.63
10W	uT	0.1278	0.2363	--	--
10W	A/m	0.1278	0.189	0.815	1.63
5W	uT	0.1278	0.2225	--	--
5W	A/m	0.1278	0.178	0.815	1.63

Note:A/m=uT/1.25

3.6 Equipment Approval Considerations

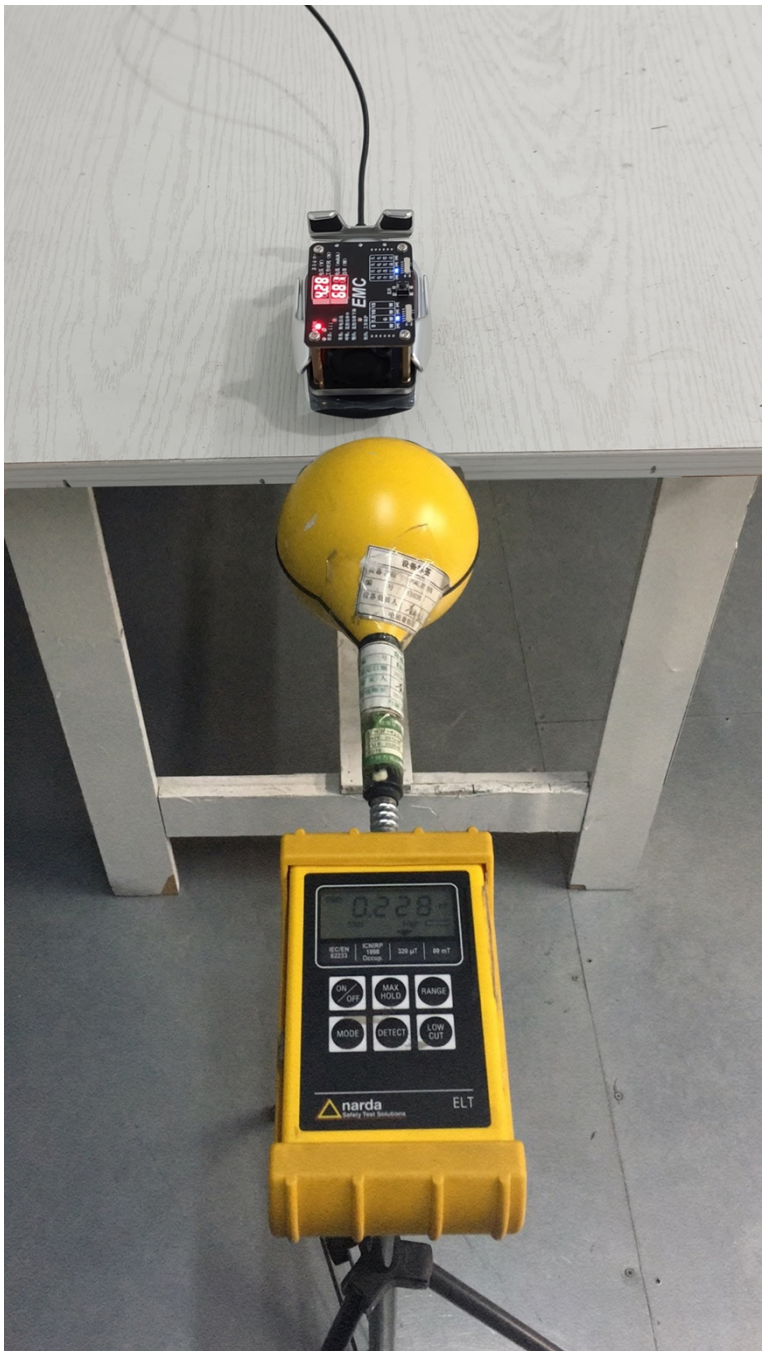
The EUT does comply with KDB 680106 D01 as follow table.

Requirements of KDB 680106 D01	Yes / No	Description
Power transfer frequency is less than 1 MHz	Yes	The device operate in the frequency range 110KHz~205KHz
Output power from each primary coil is less than 15 watts	Yes	The maximum output power for each primary coil is 15W.
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	The transfer system includes only one primary coils.
Client device is placed directly in contact with the transmitter.	Yes	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes	Mobile exposure conditions only
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 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.

3.7 Conclusion

The detected emissions with a distance of 15cm surrounding the device and 20 cm above the top surface of the device are below the FCC E-Field Strength & H-Field Strength limits; and comply with the requirements of FCC KDB 680106 D01.

4 Test Setup Photos of the EUT



********** End of Report **********