



FCC TEST REPORT

Test report
On Behalf of
Shenzhen Whakin Innovation Technology Co.,Ltd.
For
Car electric wireless charger
Model No.: VK-AH02WL

FCC ID: 2AT7TVK-AH02WL

Prepared for : **Shenzhen Whakin Innovation Technology Co.,Ltd.**
4/F, L Bldg, Jingtie Technology Industrial Park, No.49 Changjiangpu Rd. HeAo
Community Longgang district, Shenzhen 518116, China

Prepared By : **Shenzhen HUAK Testing Technology Co., Ltd.**
1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street,
Bao'an District, Shenzhen City, China

Date of Test: **Jul. 22, 2019 ~ Jul. 31, 2019**

Date of Report: **Aug. 2, 2019**

Report Number: **HK1908021877-2E**



TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Whakin Innovation Technology Co.,Ltd.
Address : 4/F, L Bldg, Jingtie Technology Industrial Park, No.49
Changjiangpu Rd. HeAo Community Longgang district,
Shenzhen 518116, China

Manufacturer's Name : Shenzhen Whakin Innovation Technology Co.,Ltd.
Address : 4/F, L Bldg, Jingtie Technology Industrial Park, No.49
Changjiangpu Rd. HeAo Community Longgang district,
Shenzhen 518116, China

Product description

Trade Mark : N/A
Product name : Car electric wireless charger
Model and/or type reference : VK-AH02WL

Standards : **FCC Rules and Regulations part 2.1091**
KDB680106 D01v03

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Date of Test :

Date (s) of performance of tests : Jul. 22, 2019 ~ Jul. 31, 2019

Date of Issue : Aug. 2, 2019

Test Result : **Pass**

Testing Engineer : 

(Gary Qian)

Technical Manager : 

(Eden Hu)

Authorized Signatory : 

(Jason Zhou)



1. GENERAL INFORMATION

1.1 General Description of EUT

Equipment	Car electric wireless charger
Model Name	VK-AH02WL
Serial No.	N/A
Model Difference	/
Trade Mark	N/A
FCC ID	2AT7TVK-AH02WL
Antenna Type	Coil Antenna
Antenna Gain	1dBi
Operation frequency	125KHz
Number of Channels	1
Modulation Type	ASK
Power Rating	Input voltage: DC5V/2A,DC9V/2A Output: 10W Max

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List							
Channel	Frequency (KHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	125						

The EUT antenna is Coil Antenna. No antenna other than that furnished by the responsible party shall be used with the device.



2. SUMMARY OF TEST RESULTS

2.1 Test procedures according to the technical standards:

FCC KDB680106 D01 RF Exposure Wireless Charging Apps v03

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 KDB680106 D01v03 (3)(3)	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

2.2 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 %** .

No.	Item	Uncertainty
1	All emissions, radiated(<30M)(9KHz-30MHz)	$\pm 2.45\text{dB}$
2	Temperature	$\pm 0.5^\circ\text{C}$
3	Humidity	$\pm 2\%$



2.3 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 27, 2018	Dec. 27, 2019
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 27, 2018	Dec. 27, 2019
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 27, 2018	Dec. 27, 2019
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 27, 2018	Dec. 27, 2019
Broadband Field Meter	NARDA	NBM-550	-	Dec. 27, 2018	Dec. 27, 2019
Electric Field Meter	COMBINNOVA	EFM 200	5Hz – 400kHz	Dec. 27, 2018	Dec. 27, 2019
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 27, 2018	Dec. 27, 2019
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 27, 2018	Dec. 27, 2019

NOTE: 1. The calibration interval of the above test instruments is 12 months

2.4 Special Accessories

No.	Equipment	Manufacturer	Model No.	Input
1	Mobile phone	SAMSUNG	S7	5V DC



3. MAXIMUM PERMISSIBLE EXPOSURE

3.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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 General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	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	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

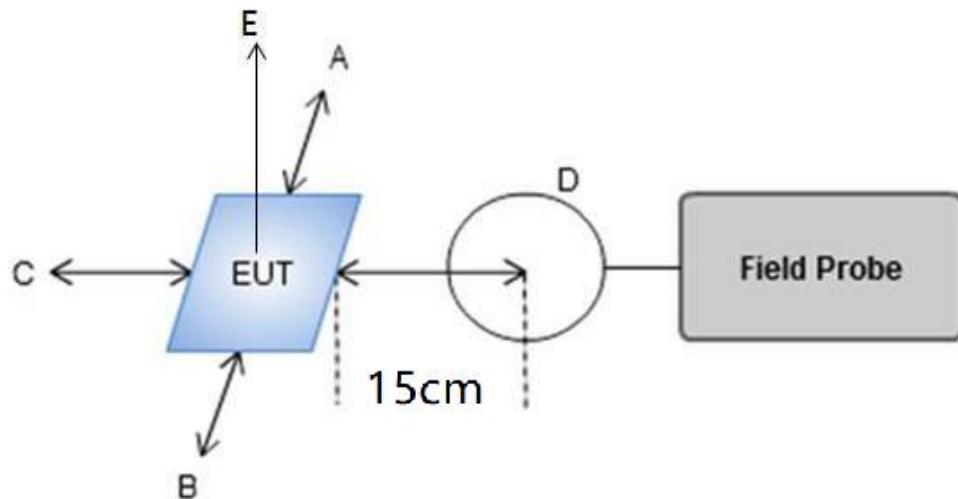
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table

1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

4. TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device.

4.1 TEST SETUP



4.2 RESULT OF MAXIMUM PERMISSIBLE EXPOSURE



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

Charging Battery Level	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		
1%	0.125	1.28	1.14	1.29	1.34	1.21	307	614
50%	0.125	1.29	1.31	1.37	1.28	1.32	307	614
99%	0.125	1.19	1.13	1.16	1.26	1.25	307	614

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

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)					FCC H-Field Strength 50% 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		
1%	0.125	0.22	0.21	0.23	0.24	0.24	0.815	1.63
50%	0.125	0.20	0.21	0.21	0.21	0.22	0.815	1.63
99%	0.125	0.17	0.18	0.18	0.17	0.19	0.815	1.63

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

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (A/m)		FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
		Test Position E			
1%	0.125	0.08		0.815	1.63
50%	0.125	0.12		0.815	1.63
99%	0.125	0.07		0.815	1.63



4.3 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 125KHz~125KHz
Output power from each primary coil is less than 15 watts	Yes	The maximum output power for each primary coil is 10W.
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.	Yes	The transfer system includes two primary coils and are able to detect and allow coupling only between individual pairs of 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 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.	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.

4.4 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.



PHOTOGRAPH OF TEST



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