RF Exposure Evaluation Report
On behalf of

Spoke Custom Products LLC

Product Name: Fast Wireless Charger

Model No.: HD01

FCC ID: 2BNNLHD01

Prepared For: Spoke Custom Products LLC
4350 Peachtree Industrial Blcvd Suite 900
Norcross GA 30071 United States

Prepared By: Audix Technology (Shanghai) Co., Ltd.
3F, Building 34, No. 680 Guiping Rd.,
Caohejing, Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500

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Date of Test	:	2025.01.17
Date of Report	:	2025.01.25

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RF Exposure Evaluation Report

Applicant	:	Spoke Custom Products LLC		
EUT Description	:	Fast Wireless Charger		
		(A) Model No.	:	Refer to Sec.2.1
		(B) Power Supply	:	AC 120V/60Hz
		(C) Test Voltage	:	AC 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 1 (1.1310) AND PART 2 (2.1091) AND KDB 680106 D01 WIRELESS POWER TRANSFER V04

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 1.1310&2.1091 limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

This report applies to above tested Sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

Date of Test : 2025.01.17 Date of Report : 2025.01.25

Producer : _____
JAREY LU / Deputy Assistant Manager

Review : _____
LVY LV / Deputy Assistant Manager

AUDIX® For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : _____
Authorized Signature(s)
KAMP CHEN / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The result is determined according to the decision rules of customer selection in the ASC-403 application service form.

1. According to IEC GUIDE 115 Procedure 2 and ILAC-G8, the uncertainties value is not used in determining the PASS/FAIL results.
2. If the required specification or standard already contains the decision rules, it will be carried out in accordance with the regulations or standard documents or the requirements of the competent units. If the required specification or standard does not contain a decision rule, the same paragraph 1.
3. If your company has a required decision rule, it will be implemented in accordance with the requirements and ISO/IEC Guide 98-4 specifications.

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
RF Exposure Evaluation	FCC RULES AND REGULATIONS PART 1.1310 AND PART 2.1091 AND KDB 680106 D01 V04	Pass	1.1310 2.1091 Section3&4
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Fast Wireless Charger
Model Number	:	HD01
Test Model	:	HD01
Power Rating	:	Input voltage/current: 5V/2.0A, 9V/1.8A Output Power: 5W/7.5W/10W
Technology	:	Wireless Power Charging
Device category	:	☑ Mobile Device ☐ Portable Device
Frequency Range:		111-148 kHz
Modulation	:	ASK
Antenna Info.	:	Antenna Type: Loop Coil Antenna
Applicant	:	Spoke Custom Products LLC 4350 Peachtree Industrial Blcvd Suite 900 Norcross GA 3007 United States
Manufacturer	:	Same as Applicant.
Factory	:	Same as Manufacturer.

2.2 EUT Specifications Assessed in Current Report

Mode	Modulation
WPC	ASK

2.3 Test Information

The EUT was operated under the following conditions.

Mode	Conditions	Output Power	Battery status	Remark
1	Adapter + EUT + iPhone X	10W	5%	Recorded
2	Adapter + EUT + iPhone X	10W	50%	Recorded
3	Adapter + EUT + iPhone X	10W	95%	Recorded
4	Adapter + EUT + iPhone SE	5W	5%	Recorded
5	Adapter + EUT + iPhone SE	5W	50%	Recorded
6	Adapter + EUT + iPhone SE	5W	95%	Recorded

2.4 Sample Description

Test Item	Model Number	Sample Number	Channel (kHz)	Date of receipted
All test	HD01	E20250109011-01/01	111-148	2025.01.09

2.5 Supported equipment

Product Name : AC-DC adapter
Brand : XIAOMI
Mode Number : MDY-08-ES
Input : 100-240VAC, 50/60Hz, 0.5A
Output : DC5V/3A, DC9V/2A, DC12V/1.5A

Product Name : Mobile Phone
Mode Number : iPhone X

Product Name : Mobile Phone
Mode Number : iPhone SE

2.6 Description of Test Facility

Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F, Building 34, No. 680 Guiping Rd., Caohejing, Hi-Tech Park, Shanghai 200233, China
Accredited by NVLAP, Lab Code		200371-0
FCC Designation Number		CN5027
Test Firm Registration Number		954668

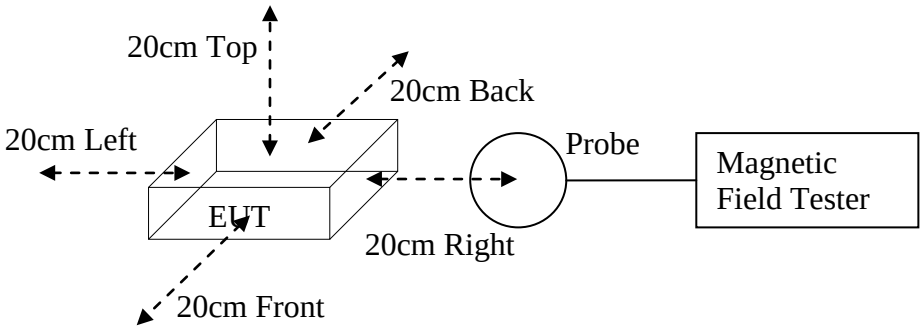
3 RADIO FREQUENCY EXPOSURE EVALATION

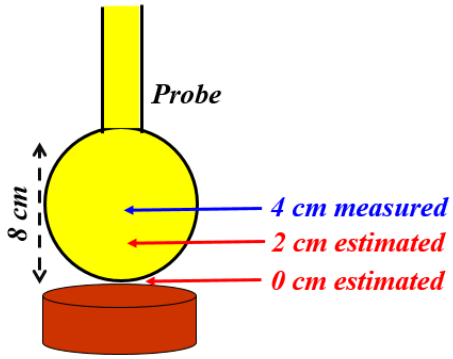
3.1 Test Equipment

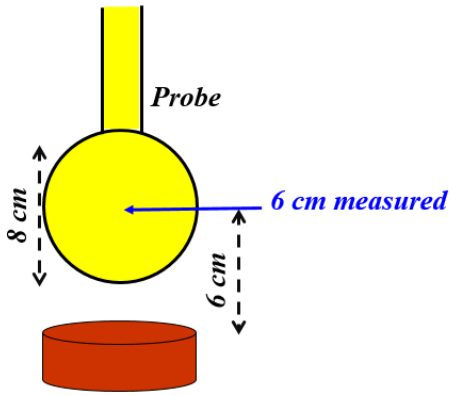
The following test equipments are used during the test in a chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Magnetic Field Tester	HIOKI	FT3470-50/3471	130503486/0798-B1	2024.08.01	1 Year

3.2 Block Diagram of Test Setup







3.3 Limits

KDB 690106 D01 V04:

Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-Portable devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

For all the cases mentioned above, E and H measurements should be made from all sides of the transmitter, along all the principal axes defined with respect to the orientation of the transmitting element (e.g., coil or antenna). When clearly demonstrated, symmetry considerations may be used to reduce the amount of testing. Furthermore, for "low-frequency" loop/coil emitting structures that lead to dominant H-field near-field emissions (i.e., with E/H ratio less than 1/10 of the 377-ohm free space wave impedance, typically frequencies less than 1 MHz), only H-field measurements are sufficient for demonstrating MPE limit compliance.

FCC CFR 47 §1.1310:

Table 1 to § 1.1310(e)(1)—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)
(i) 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
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) 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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

3.4 Test Procedures

The EUT was placed upon a non-metallic table, which is 0.8 m above the ground in a fully anechoic chamber. The measurement probe place at the test distance which is between the center of the probe and the edge of EUT.

As the EUT operating at the frequencies that less than 1 MHz, and transmit wireless power through loop/coil emitting structures, only H-field measurements are sufficient for demonstrating MPE limit compliances. (According to the KDB 680106 D01 V04 section 3.2)

The EUT was measured according to the dictates of KDB 680106 D01 V04.

3.5 Equipment Approval Considerations

The EUT compliant with KDB 680106 D01 V04:

Requirements	Descriptions
(1) The power transfer frequency is below 1 MHz.	Yes. The device operate in the frequency ranges below 1 MHz.
(2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.	Yes. The device is shipped with one loop coil element that the maximum output power is 15 watts.
(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)	Yes. The client device is placed in directly physical contact to the transmitter.
(4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).	Yes. The device is operated in mobile conditions only.
(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1.	Yes. The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1.
(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well.	Yes. The device with only one radiating structure, the conditions specified in (5) met the requirements.

3.6 Test Results

< PASS >

The amplitude of the emission relative the limit is reported. All the emissions comply with the requirement of KDB 680106 D01 V04.
All the test results are attached in next pages.

(Test Date: 2025.01.17 Temperature: 23℃ Humidity: 51 %)

Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
1	20	0.026	0.026	0.026	0.027	0.029	1.6
	22	0.026	0.025	0.026	0.025	0.029	1.6
	24	0.024	0.025	0.024	0.025	0.028	1.6
Maximum of Value		0.029					
Ratio of Limit (%)		1.8					

Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
2	20	0.027	0.026	0.027	0.026	0.03	1.6
	22	0.027	0.025	0.026	0.025	0.029	1.6
	24	0.026	0.025	0.025	0.025	0.029	1.6
Maximum of Value		0.03					
Ratio of Limit (%)		1.9					

Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
3	20	0.025	0.026	0.026	0.026	0.03	1.6
	22	0.024	0.025	0.026	0.026	0.028	1.6
	24	0.024	0.025	0.026	0.025	0.028	1.6
Maximum of Value		0.03					
Ratio of Limit (%)		1.9					

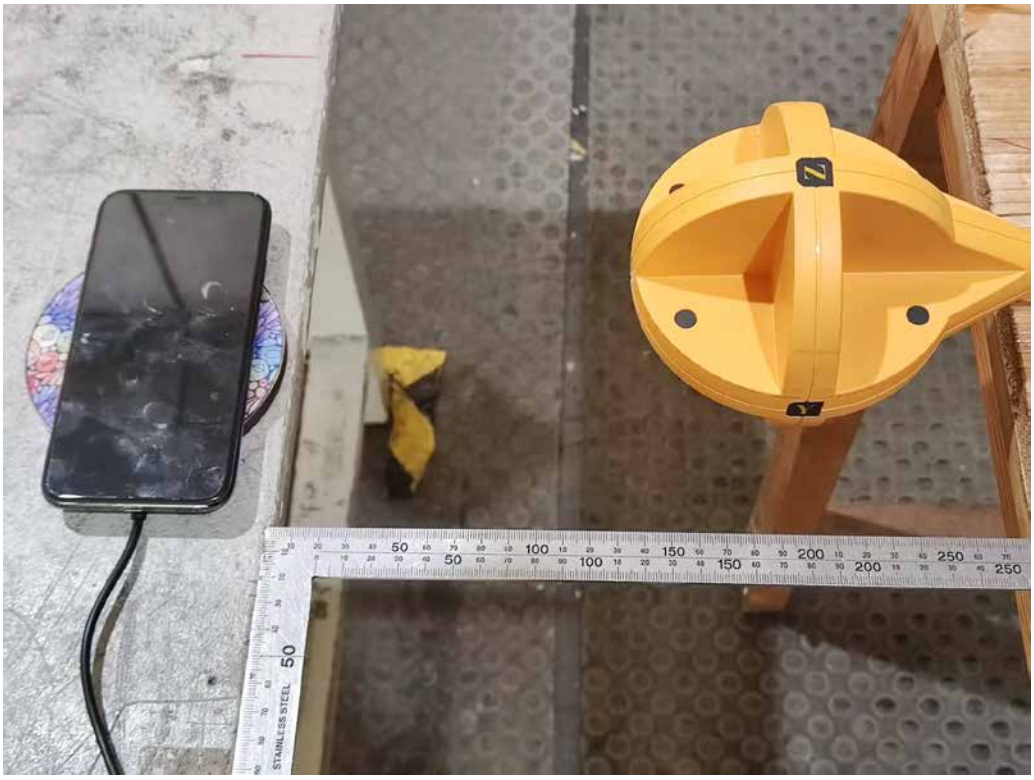
Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
4	20	0.025	0.026	0.025	0.026	0.027	1.6
	22	0.024	0.025	0.025	0.026	0.027	1.6
	24	0.024	0.025	0.024	0.024	0.026	1.6
Maximum of Value		0.027					
Ratio of Limit (%)		1.7					

Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
5	20	0.025	0.026	0.026	0.025	0.028	1.6
	22	0.025	0.025	0.026	0.025	0.027	1.6
	24	0.025	0.025	0.025	0.025	0.027	1.6
Maximum of Value		0.028					
Ratio of Limit (%)		1.8					

Test mode	Test distance (cm)	H-Filed Measured Value (A/m)					Limit (A/m)
		Front Position	Left Position	Back Position	Right Position	Top Position	
6	20	0.027	0.026	0.026	0.025	0.029	1.6
	22	0.025	0.026	0.025	0.025	0.028	1.6
	24	0.025	0.026	0.024	0.024	0.027	1.6
Maximum of Value		0.029					
Ratio of Limit (%)		1.8					

4 TEST SETUP PHOTO

FRONT (20CM)



LEFT (20CM)

BACK (20CM)

RIGHT (20CM)

TOP (20CM)

-END-