

# TEST REPORT

Reference No..... : WTF20X11081033W-2  
FCC ID ..... : 2AMRO-HLCRIO167  
Applicant ..... : iottie.Inc  
Address..... : 20W 37th 6th floor 10018 New York  
Product Name ..... : Auto Sense Wireless 2  
Test Model. .... : HLCRIO167  
Standards ..... : KDB 680106 D01 V03  
Date of Receipt sample .... : Nov.03, 2020  
Date of Test..... : Nov.03, 2020 to Nov.19, 2020  
Date of Issue ..... : Nov.20, 2020  
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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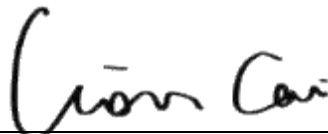

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**Report version**

Version No.	Date of issue	Description
Rev.00	Nov.20, 2020	Original
/	/	/

## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: iottie.Inc  
 Address of applicant: 20W 37th 6th floor 10018 New York

Manufacturer: Shenzhen Elecjar Technology Co., Ltd  
 Address of manufacturer: Building 3, Tianyanxuan, No.1, Lane 14, Bantian East Village, Bantian Street, Longgang District, Shenzhen

General Description of EUT	
Product Name:	Auto Sense Wireless 2
Trade Name:	iottie
Model No.:	HLCRIO167
Adding Model(s):	HLCRIO166
<p><i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model HLCRIO167, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Frequency Range:	110~205kHz
Modulation Type:	FSK
Antenna Type:	Coil Antenna
Rated Voltage:	DC5V / DC9V / DC12V
Rated Current:	1A / 1.1A / 1.25A
Rated Power:	5W / 10W / 15W

**1.2 Test Equipment List and Details**

<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial No.</b>	<b>Cal Date</b>	<b>Due Date</b>
MPE Measuring Instrument	Narda	ELT-400	M-0155/M-0170	2020-07-15	2021-07-14
Broadband Field Meter	Narda	NBM-520	D-1699	2020-06-21	2021-06-20

## 2. RF Exposure Test Report

### 2.1 Standard Applicable

According to § 1.1310 system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

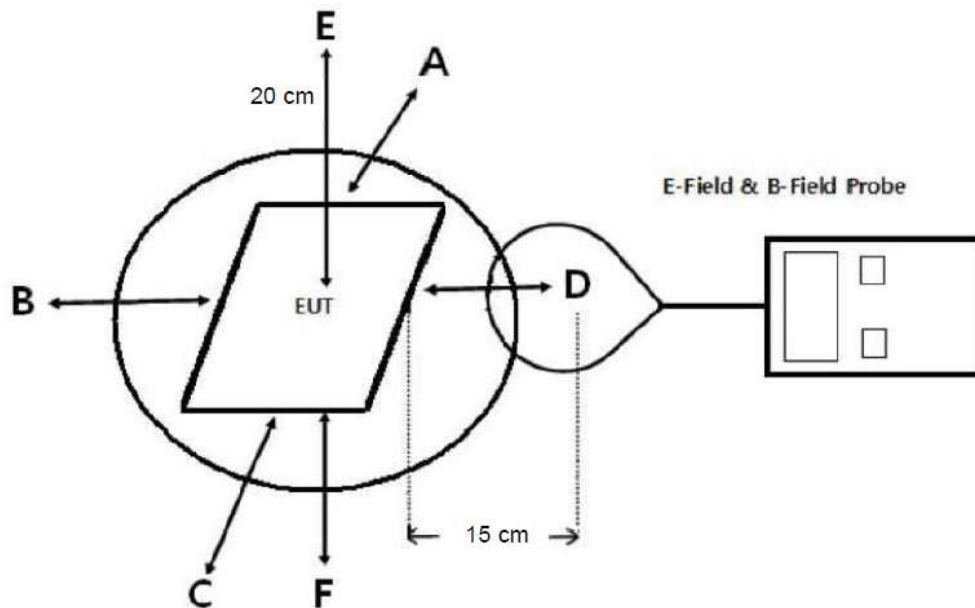
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	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

### 2.2 Test Conditions

Test Mode	Description	Remark
TM1	Wireless Charging	Input DC5V/3A; Output:DC5V/1A
TM2	Wireless Charging	Input DC9V/2A; Output:DC9V/1.1A
TM3	Wireless Charging	Input DC9V/2A; Output:DC12V/1.25A
<b>Measurement Distance:</b>		
		15 cm

## 2.3 Test Procedure



- The measurement probe was placed at test distance (15 cm for A, B, C, D, F and 20 cm for E) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded at the measurement points (A, B, C, D, E, F).
- The EUT was measured according to the distance of KDB 680106 D01 V03.

## 2.4 Test Result

The EUT dose comply with item 5.2 of KDB 680106 D01V03

- Power transfer frequency is less than 1 MHz  
Yes, the device operate in the frequency range from 110kHz to 205kHz.
- Output power from each primary coil is less than or equal to 15 watts  
Yes, the maximum output power of the primary coil is less than 15W.
- 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 client device includes only single primary coils.
- Client device is inserted in or 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, It is mobile exposure conditions only.

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.

Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test TM1, TM2 list, and the coils can't transmitted simultaneous.

*Test Mode: TM1*

<b>Electric Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (V/m)</b>	<b>Limit(V/m)</b>	<b>50% Limit (V/m)</b>
Top	12	614	307
Bottom	12	614	307
Side 1	14	614	307
Side 2	13	614	307
Side 3	13	614	307
Side 4	13	614	307
<b>Magnetic Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (A/m)</b>	<b>Limit(A/m)</b>	<b>50% Limit (A/m)</b>
Top	0.12	1.63	0.815
Bottom	0.13	1.63	0.815
Side 1	0.15	1.63	0.815
Side 2	0.12	1.63	0.815
Side 3	0.14	1.63	0.815
Side 4	0.14	1.63	0.815

*Test Mode: TM2*

<b>Electric Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (V/m)</b>	<b>Limit(V/m)</b>	<b>50% Limit (V/m)</b>
Top	19	614	307
Bottom	20	614	307
Side 1	18	614	307
Side 2	18	614	307
Side 3	16	614	307
Side 4	18	614	307
<b>Magnetic Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (A/m)</b>	<b>Limit(A/m)</b>	<b>50% Limit (A/m)</b>
Top	0.24	1.63	0.815
Bottom	0.23	1.63	0.815
Side 1	0.21	1.63	0.815

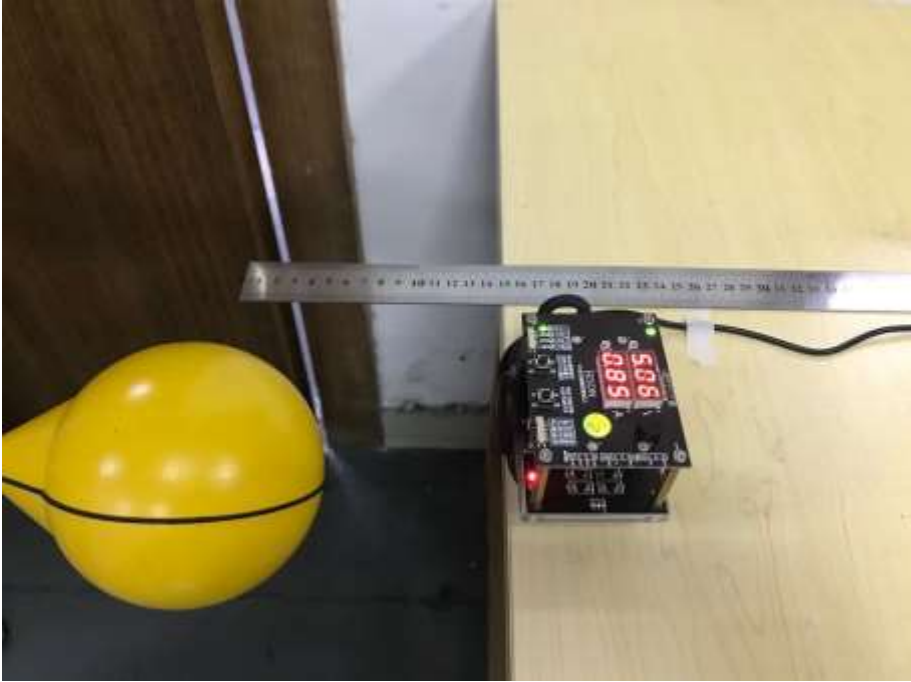


Side 2	0.21	1.63	0.815
Side 3	0.22	1.63	0.815
Side 4	0.21	1.63	0.815

Test Mode: TM3

<b>Electric Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (V/m)</b>	<b>Limit(V/m)</b>	<b>50% Limit (V/m)</b>
Top	23	614	307
Bottom	24	614	307
Side 1	24	614	307
Side 2	25	614	307
Side 3	24	614	307
Side 4	25	614	307
<b>Magnetic Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (A/m)</b>	<b>Limit(A/m)</b>	<b>50% Limit (A/m)</b>
Top	0.29	1.63	0.815
Bottom	0.28	1.63	0.815
Side 1	0.27	1.63	0.815
Side 2	0.27	1.63	0.815
Side 3	0.26	1.63	0.815
Side 4	0.26	1.63	0.815

**2.5 Test Photos**



## **APPENDIX PHOTOGRAPHS**

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**Please refer to “ANNEX”**

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