

Limitless Innovations, Inc

TEST REPORT

SCOPE OF WORK

EMC TESTING–CRGRD-X5-E3005-XXX

REPORT NUMBER

180822013GZU-002

ISSUE DATE

09-October-2018

[REVISED DATE]

[-----]

PAGES

12

DOCUMENT CONTROL NUMBER

© 2017 INTERTEK



TEST REPORT

Telephone: 86-20-8213 9688
Facsimile: 86-20-3205 7538
www.intertek.com

Applicant Name & : LIMITLESS INNOVATIONS INC
Address : 4800 Metalmaster Way McHenry, IL 60050, United States
Manufacturing Site : Same as applicant
Intertek Report No: 180822013GZU-002
FCC ID: 2AQ9A-E3005

Test standards

47 CFR PART 1, Subpart I, Section 1.1310
KDB 680106 D01 RF Exposure Wireless Charging Apps v03

Sample Description

Product : ChargeHub X5 Elite
Model No. : CRGRD-X5-E3005-XXX
Electrical Rating : Input: 100-240Vac, 50/60Hz 1500mA, Max
4×USB Output: 5Vdc, 2.4A Max current per port/4.4A Max Total
Output Current
1× Type-C Output: 5Vdc, 3A or 9Vdc, 3A or 12Vdc, 2.25A
Wireless output: 5Vdc, 1A
Serial No. : Not Labeled
Date Received : 22 August 2018
Date Test : 22 August 2018-28 September 2018
Conducted

Prepared and Checked By

Approved By:



Daniel He
Project Engineer
Intertek Guangzhou



Helen Ma
Team Leader
Intertek Guangzhou

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

TEST REPORT

CONTENT

TEST REPORT 1

CONTENT 3

1.0 TEST RESULT SUMMARY 4

2.0 GENERAL DESCRIPTION 5

 2.1 PRODUCT DESCRIPTION 5

 2.2 TEST FACILITY 5

 2.3 EUT EXERCISING SOFTWARE 5

 2.4 SPECIAL ACCESSORIES 5

 2.5 EQUIPMENT MODIFICATION 5

 2.6 SUPPORT EQUIPMENT LIST AND DESCRIPTION 6

3.0 EMF TEST 7

 3.1 STANDARD REQUIREMENT 7

 3.2 TEST DATA 8

4.0 TEST EQUIPMENT LIST 9

5.0 APPENDIX I - PHOTOS OF TEST SETUP 10

TEST REPORT**1.0 TEST RESULT SUMMARY**

Classification of EUT: Class B

Test Item	Standard	Result
EMF	47 CFR PART 1, Subpart I, Section 1.1310	PASS

Remark:

When determining the test results, measurement uncertainty of tests has been considered.

TEST REPORT

2.0 General Description

2.1 Product Description

Operating Frequency	111-148KHz
Type of Modulation:	ASK
Antenna Type	Inductive loop coil antenna
Antenna gain:	0 dBi
Power Supply:	Input: 100-240Vac, 50/60Hz 1500mA, Max 4×USB Output: 5Vdc, 2.4A Max current per port/4.4A Max Total Output Current 1× Type-C Output: 5Vdc, 3A or 9Vdc, 3A or 12Vdc, 2.25A Wireless output: 5Vdc, 1A
Power cord:	1.2m x 2 wires unshielded cable

2.2 Test Facility

Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City,
GETDD Guangzhou, China

A2LA Certificate Number 0078.10

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch is accredited by A2LA and Listed in
FCC website. FCC accredited test labs may perform both Certification testing under Parts 15
and 18 and Declaration of Conformity testing.

2.3 EUT Exercising Software

N/A

2.4 Special Accessories

N/A

2.5 Equipment Modification

Any modifications installed previous to testing by LIMITLESS INNOVATIONS INC will be
incorporated in each production model sold / leased in the United States.
No modifications were installed by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch.

TEST REPORT

2.6 Support Equipment List and Description

This product was tested with corresponding support equipment as below:

Support Equipment:

Equipment	Model No.	Rating	Supplier
Mobile phone	IPhone 8	--	Intertek

Remark: the iphone 8 was one of typical client devices, it's selected such that the EUT was fully exercised at maximum power from its transmitter. It will not be sold together.

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above evaluated respectively

Pretest mode	Description	
Standby Mode	kept transmitting continuously	
Charging Mode	CH: Low	Mobile phone is charging at 1% battery power, 50% and 99% battery power respectively, keep transmitting continuously
	CH: Middle	
	CH: High	

TEST REPORT

3.0 EMF TEST

3.1 Standard Requirement

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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.1m normally can be maintained between the user and the device.

(a) 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 Times 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
1500-100000	--	--	5	6

(b) 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 Times 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
1500-100000	--	--	1.0	30

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

TEST REPORT

3.2 Test Data

Input Voltage: 120V/60Hz
Ambient Condition: 24°C, 50%RH

Test distance: 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils

H-Filed Strength:

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Mobile in 1% battery power	Mobile in 50% battery power	Mobile in 99% battery power		
Side 1	0.061	0.052	0.032	0.815	1.63
Side 2	0.062	0.053	0.031	0.815	1.63
Side 3	0.060	0.051	0.035	0.815	1.63
Side 4	0.059	0.050	0.036	0.815	1.63
Top	0.058	0.051	0.034	0.815	1.63

TEST REPORT

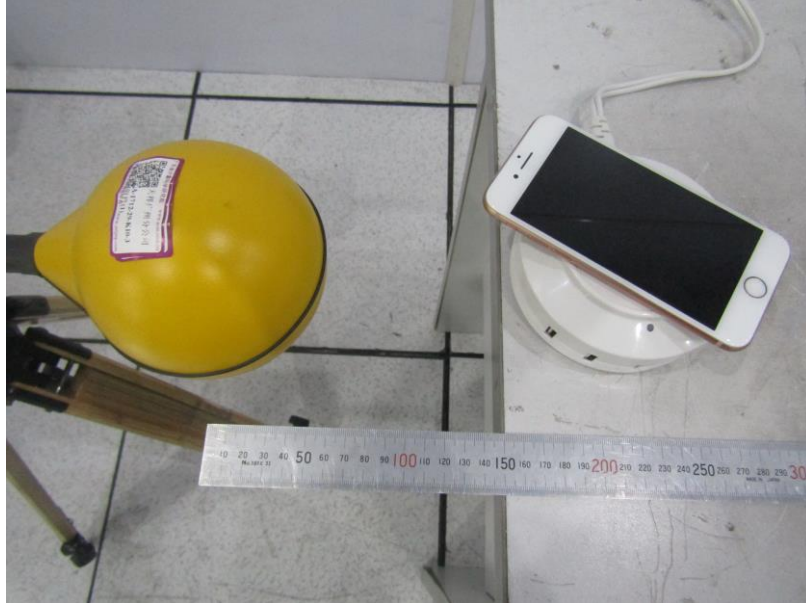
4.0 Test Equipment List

Equip. No.	Equipment	Model	Manufacturer	Cal. date	Due date
EM007-03	Exposure Level Tester	ELT-400	NARDA	2017/12/11	2018/12/11

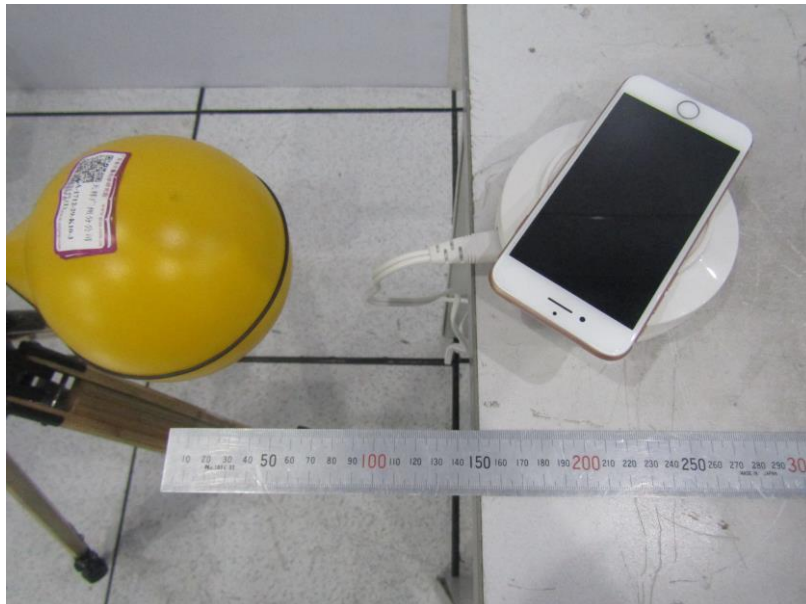
TEST REPORT

5.0 Appendix I - Photos of test setup

Side 1:

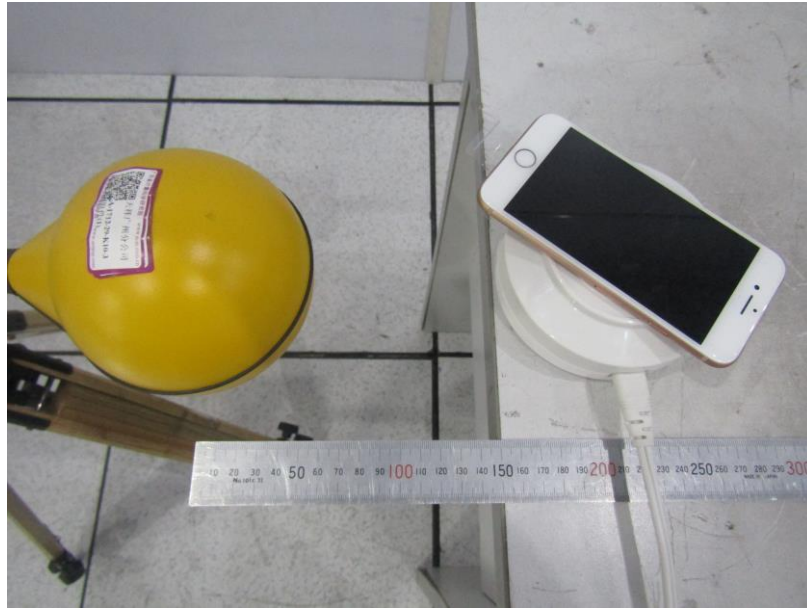


Side 2:

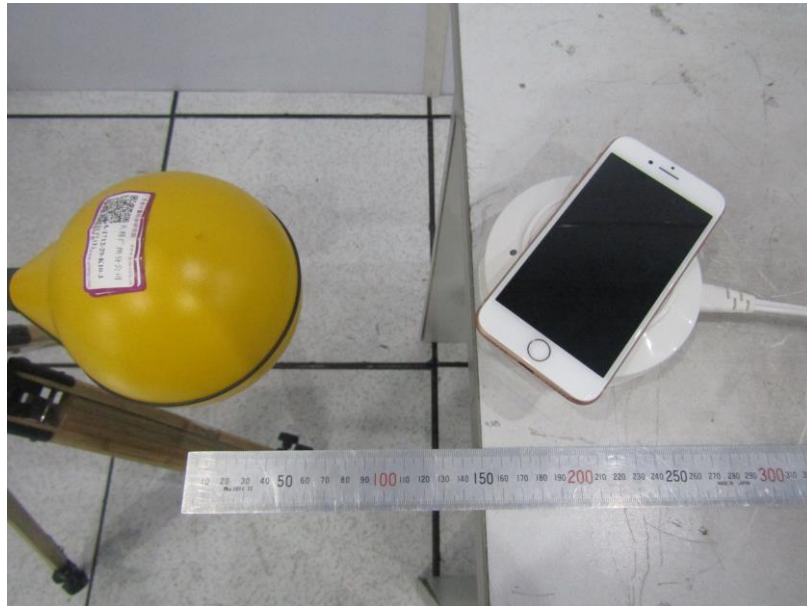


TEST REPORT

Side 3:

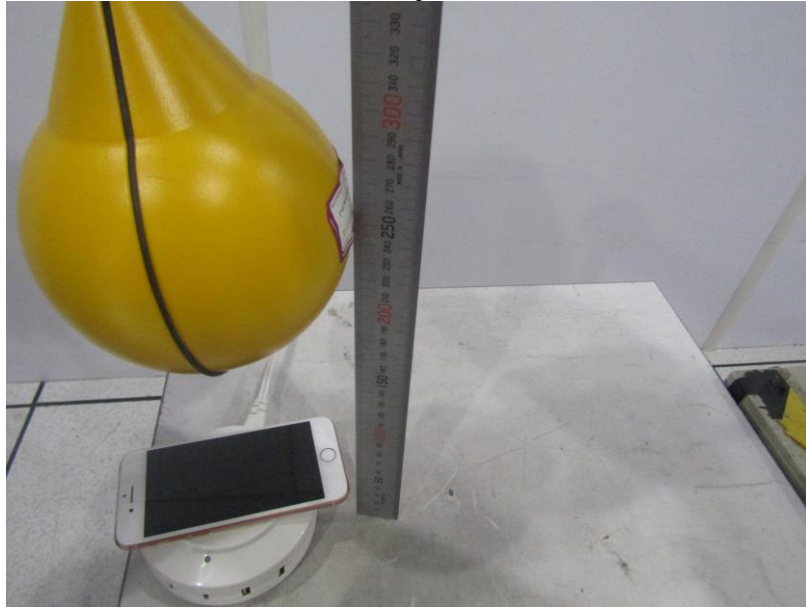


Side 4:



TEST REPORT

Top:



*****End of the test report*****