

# MAXIUM PERMISSIBLE EXPOSURE

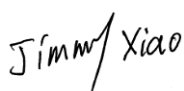
## TEST REPORT

For

**Guangzhou Havit Technology Co., LTD.**

ROOM 1307, 13F, PHASE 2 B,C BUILDING OF POLY WORLD TRADE CENTER,NO. 1000,  
XINGANG EAST ROAD, HAIZHU 510000, GUANGDONG China

**FCC ID : 2A16IVWC002DS6**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Wireless Charger
<b>Report Number:</b> RDG201028100	
<b>Report Date:</b> Dec. 04, 2020	
Jimmy Xiao 	
<b>Reviewed By:</b> RF Engineer	
<b>Prepared By:</b> Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>	

**Note:** This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '\*'. Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

## **TABLE OF CONTENTS**

1.1.	GENERAL INFORMATION .....	3
1.2.	TEST FACILITY.....	3
1.3.	MEASURING STANDARD .....	3
1.4.	REQUIREMENTS .....	4
1.5.	TEST CONFIGURATION .....	4
1.6.	TEST PROCEDURE .....	5
1.7.	TEST SETUP .....	5
1.8.	LIMITS .....	6
1.9.	MEASURING DEVICE AND TEST EQUIPMENT.....	6
1.10.	MEASURING RESULTS.....	7
1.1.	PHOTOGRAPHS OF TEST SETUP .....	9

## 1.1.GENERAL INFORMATION

Product	Wireless Charger
Tested Model	GT-Y414
Multiple Model	VWC-002-DS-6, HV-W68, HV-W68A, W3009, W3010, W3008, W3011
Model Differences	Refer to the DoS letter
Modulation Type	ASK
Type of Antenna	Coil Antenna
Antenna Gain	0dBi
Rating	Input: DC 5V/2A; DC 9V/2A; DC 12V/1.67A Output: DC 5V/1A; DC 9V/0.83A; DC 9V/1.12A; DC 9V/1.67A
Date of Test	2020-12-02
Sample number	RDG201028100-RF-S1(Assigned by BACL, Shenzhen)
Received date	2020-11-31
Sample/EUT Status	Good condition

## 1.2.Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

## 1.3.Measuring Standard

FCC CFR 47 Part 1(1.1310) KDB 680106 D01 v03

## 1.4. Requirements

The EUT does comply with item 5(b) of KDB 680106 D01 v03

- 1) Power transfer frequency is less than 1MHz
- 2) Output power from each primary coil is less than or equal to 15 watts.
- 3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that able to detect and allow coupling only between individual pair of coils.
- 4) Client device is inserted in or placed directly in contact with the transmitter.
- 5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion)
- 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.

## 1.5. Test Configuration

- 1) The field strength of both E-field and H-field was measured at 15cm using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
- 2) The RF power density was measured at Under maximum load test
- 3) Maximum E-field and H-field measurements were made 15cm from each side of the EUT. Along the side of the EUT and still 15cm away from the edge of the EUT, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.
- 4) This device uses a wireless charging circuit for power transfer operating at the frequency of 110–205kHz. Thus, the 300kHz limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

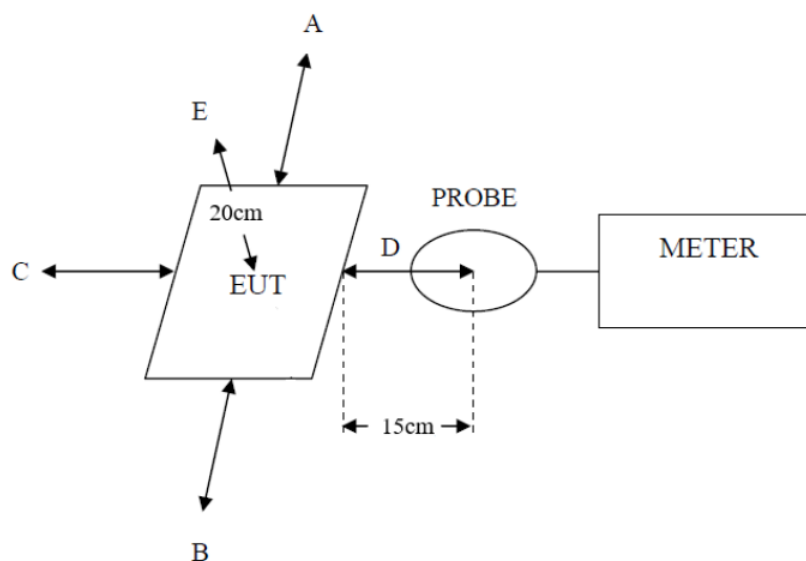
## 1.6. Test Procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- 4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

Remark:

The EUT's test position A, B, C, D, and E is valid for the E and H field measurements.

## 1.7. Test Setup



## 1.8.Limits

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

Remark: 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

## 1.9.Measuring Device and Test Equipment

For MPE Measurement

Item	Equipment	Manufacturer	Model No.	Serial No	Last Cal.	Cal. Interval
1.	Exposure Level Tester	Narda	ELT-400	N-0229	Nov. 15, 2019	3 Year
2.	B Field Probe	Narda	ELT Probe 100cm2	M-0666	Nov. 15, 2019	3 Year
3.	Isotropic Field Probe	ETS-Lindgreen	HI—6005	69461	Sep. 28, 2018	4 Year

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

## 1.10.Measuring Results

### Environmental Conditions

<b>Temperature:</b>	<b>25°C</b>
<b>Relative Humidity:</b>	<b>46%</b>
<b>ATM Pressure:</b>	<b>101.0 kPa</b>

*The testing was performed by Joker Chen on 2020-12-02.*

Table 1: Test with 15cm distance from the center of the probe(s) to the edge of the device, 20 cm for top test.

Frequency Range (kHz)	Measured E-Field Strength Values (V/m)					50% Limit (V/m)	Limit (V/m)
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
110-205	5.226	2.384	3.327	5.325	4.452	307	614

Table 2: Test with 15cm distance from the center of the probe(s) to the edge of the device, 20 cm for top test.

Frequency Range (kHz)	Measured H-Field Strength Values (A/m)					50% Limit (A/m)	Limit (A/m)
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
110-205	0.11	0.115	0.107	0.104	0.076	0.815	1.63

### Result: Compliance

#### Considerations of compliance 680106 D01 RF Exposure Wireless Charging App v03 clause 5 b:

(1) Power transfer frequency is less than 1 MHz.

Yes, the operation frequency is 110-205 kHz.

(2) Output power from each primary coil is less than or equal to 15 watts.

Yes, the maximum output power of primary coil is 14.75 Watts, less than 15 watts.

(3) 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 one coil to detect and allow coupling only between individual pairs of coils.

**(4)** Client device is placed directly in contact with the transmitter.

Yes, client device is placed directly in contact with the transmitter

**(5)** Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

Yes, 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 test result for H and E-field strength less than 50% of the MPE limit.



## 1.1. Photographs of Test Setup

H-field strengths:

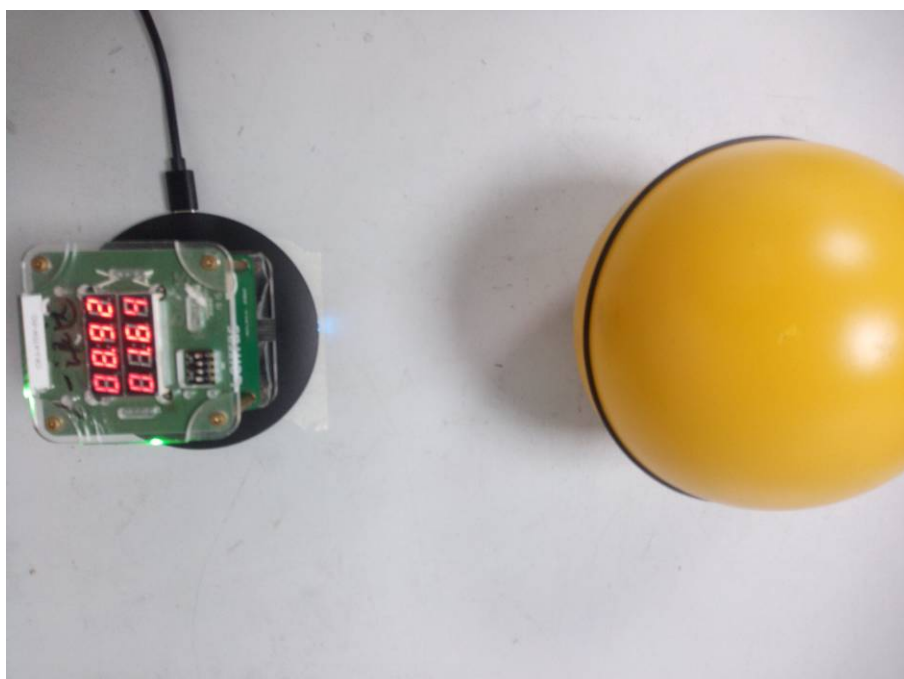
Position A



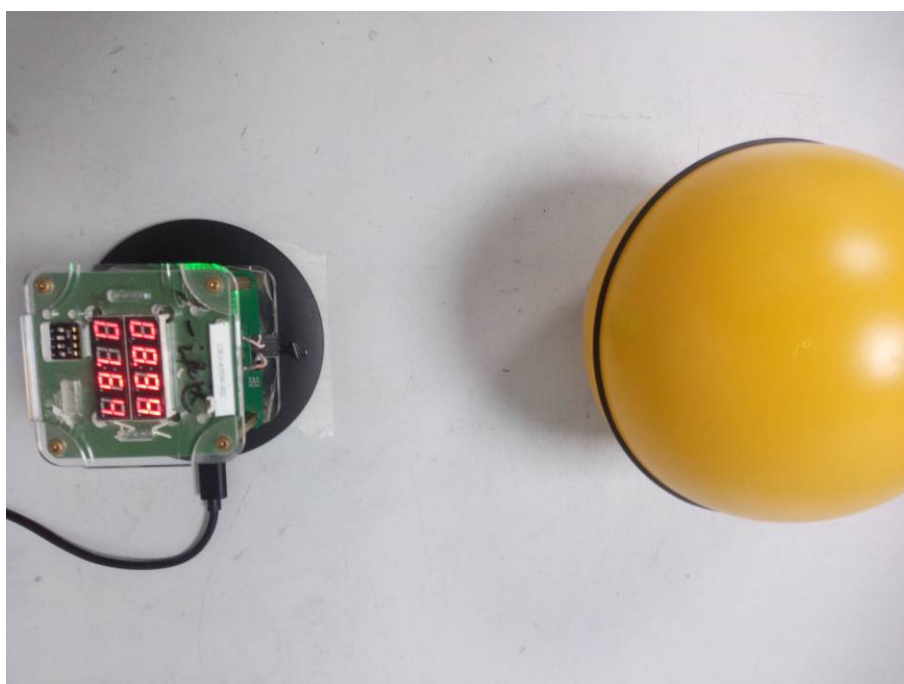
Position B



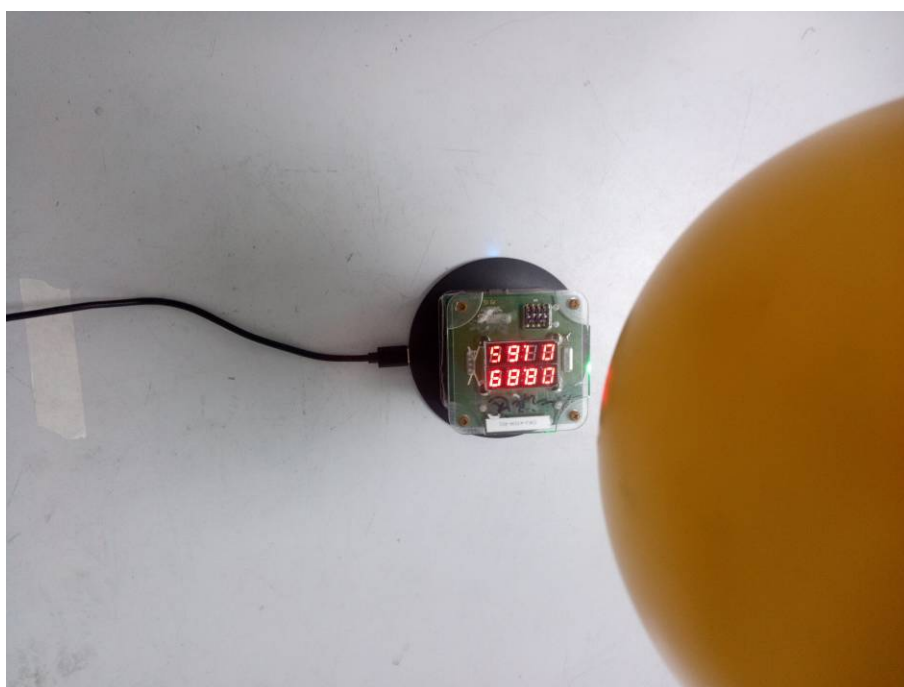
Position C



Position D

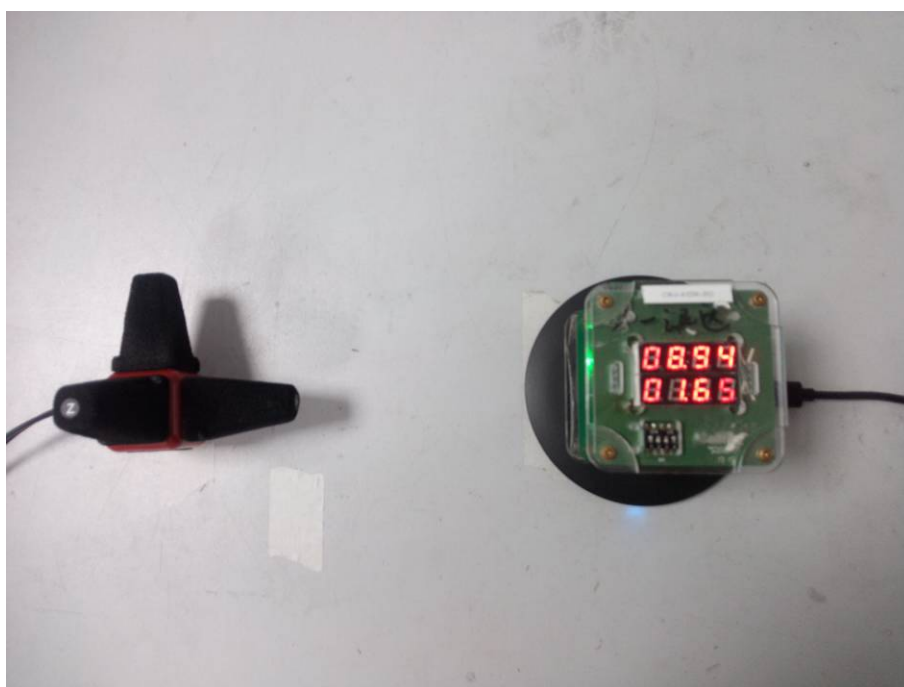


Position E



E-field strengths:

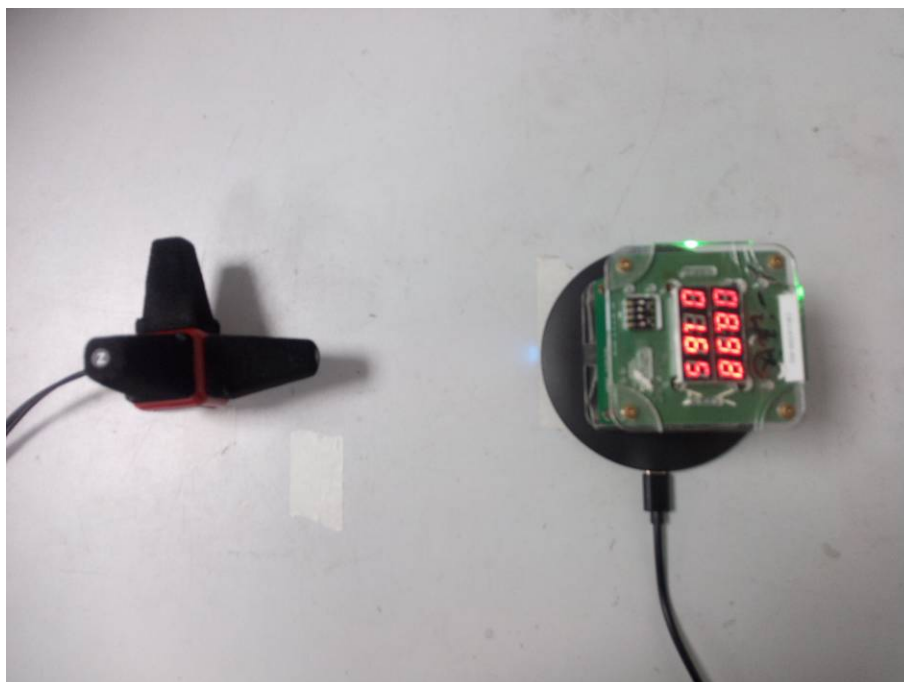
Position A



Position B



Position C



Position D



Position E



\*\*\*\*\* End of Test Report \*\*\*\*\*