



Registration  
No.788871

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# RF Exposure REPORT

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Report No.: SRTC2017-9004(F)-17083001(M)

Product Name: Charging stand

Product Model: S13

Applicant: Joy Home, Inc.

Manufacturer: Joy Home, Inc.

Specification: FCC Part 1.1310, 1.1307(b)

RSS-102 Issue 5 March 2015

FCC ID: 2AMPA-GC125543

IC ID: 23004-GC125543

The State Radio\_monitoring\_center Testing Center (SRTC)

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## **1. GENERAL INFORMATION**

### **1.1 Notes of the test report**

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The test results relate only to individual items of the samples which have been tested.

### **1.2 Information about the testing laboratory**

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District
City:	Beijing
Country or Region:	P.R.China
Contacted person:	Liuja
Tel:	+86 10 5799 6183
Fax:	+86 10 5799 6388
Email:	liujiaf@srtc.org.cn

### **1.3 Applicant's details**

Company:	Joy Home, Inc.
Address:	1388 Sutter St., San Francisco
City:	San Francisco
Country or Region:	USA
Grantee Code:	2AMPAGC125542
Contacted person:	Alan Chan
Tel:	646.784.1430
Fax:	---
Email:	Alan@joy.com

### **1.4 Manufacturer's details**

Company:	Joy Home, Inc.
Address:	1388 Sutter St., San Francisco
City:	San Francisco
Country or Region:	USA
Contacted person:	Alan Chan
Tel:	646.784.1430
Fax:	---
Email:	Alan@joy.com

## **2 DESCRIPTION OF THE DEVICE UNDER TEST**

### **2.1 Final Equipment Build Status**

Wireless Charger

Frequency Range	111 kHz ~ 145 kHz
Antenna Type	Inductive loop coil Antenna
Antenna Gain	0dBi
Power Supply	100-240VAC, 50-60Hz, 0.7A max
Manufacturer	Joy Home, Inc.

### **2.2 Auxiliary Equipment Used During Test**

Joy Album

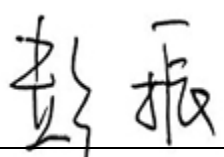


Manufacturer	Joy Home, Inc.
Model	K13
S/N	1#

### **3 REFERENCE SPECIFICATION**

Specification	Version	Title
1.1310	June 4, 2013	Radiofrequency radiation exposure limits.
1.1307(b)	Apr. 22, 1986	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
KDB 680106 D01	v02	General RF Exposure Guidance
RSS-102	Issue 5, March 2015	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus

## 4 RESULT SUMMARY

No.	Test case	FCC reference
1	MPE	FCC Part §1.1310 FCC Part §1.1307(b) KDB 680106 D01 v02 RSS-102

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Ms. Liu Jia 
Tested by: Mr. Chang Taosha 	Issued date: 20171109

## **5 TEST RESULTS**

### **5.1 General Information**

#### **5.1.1 Ambient condition**

Temperature	Relative humidity	Pressure
22°C	30%	101.5kPa

#### **5.1.2 Test Procedure Used**

680106 D01 RF Exposure Wireless Charging Apps v02

#### **5.1.3 Test Requirements**

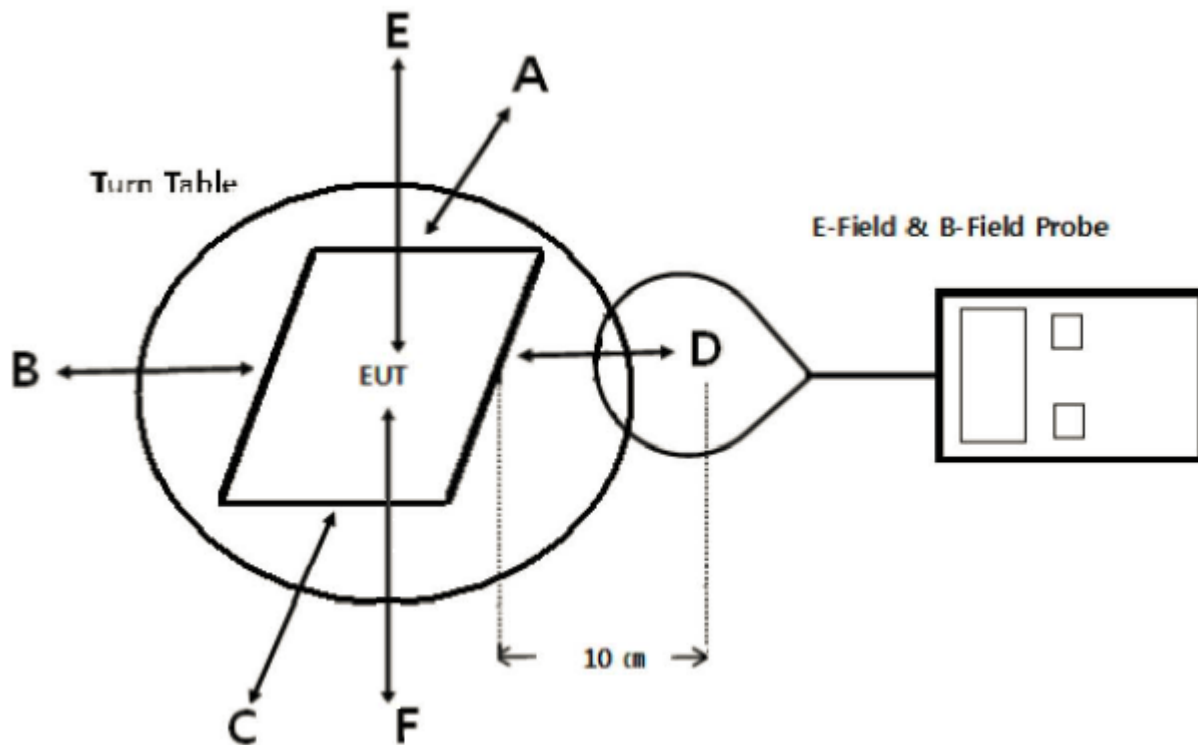
According to the item 5.2 of KDB 680106 D01v02:

Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

- a) Power transfer frequency is less than 1 MHz
- b) Output power from each primary coil is less than 5 watts
- c) 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
- d) Client device is inserted in or placed directly in contact with the transmitter
- e) The maximum coupling surface area of the transmit (charging) device is between 60 cm<sup>2</sup> and 400 cm<sup>2</sup>.
- f) Aggregate leakage fields at 10 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.

### 5.1.4 Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 10cm measured from the center of the probe(s) to the edge of the device. Otherwise another two position G and H also be tested. The details see clause 5.5.



## 5.2 Limit

### FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

#### (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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
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
300-1500	--	--	f/300	6
1500-100,000	--	--	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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
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
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

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

### **5.3 Test Procedure**

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric center of probe.
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E,F,G,H) were completed.
- 4) The EUT was measured according to the dictates of KDB 680106 D01 v02. Remark; The EUT's test position A, B, C, D, E,F,G and H is valid for the E and H field measurements.

### **5.4 Test conditions**

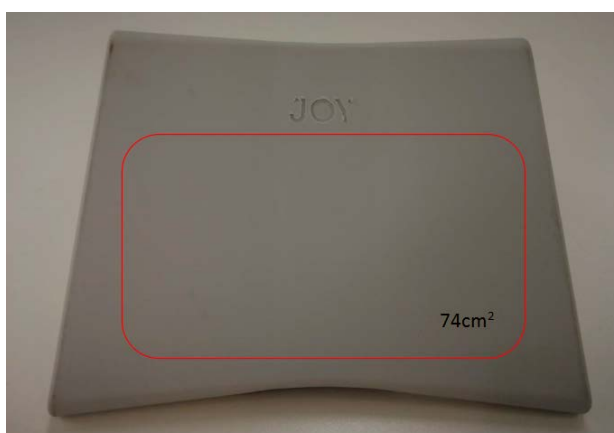
- 1) Test has performed with the Charging stand combined with the Joy Album under three conditions of its battery power 0% ,50% and 90% energy.The test results show it can generate the maximum output power when the Joy Album working under 0% battery power. So all the test performed when the Joy Album working with battery power is 0%.
- 2) The Charging stand has two surface zones can charge with the Joy Album but can't allow multiple-client devices to be charge simultaneously.

### **5.5 Test Result**

Equipment Approval Considerations item 5.2 of KDB 680106 D01 v02.

NO.	Equipment Approval considerations	Conform to	NOTE
a	Power transfer frequency is less than 1 MHz	yes	working frequency from 111KHz to 145KHz
b	Output power from each primary coil is less than 5 watts	yes	The output power less than 5 Watts
c	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 wireless charger has two charging surfaces, but only one product can be charged at a time, and the other charging surface does not work.
d	Client device is inserted in or placed directly in contact with the transmitter	yes	Client device is placed directly in contact with the transmitter
e	The maximum coupling surface area of the transmit (charging) device is between 60 cm <sup>2</sup> and 400 cm <sup>2</sup> .	yes	The first charging surface area is 72 cm <sup>2</sup> The second charging surface area is 74 cm <sup>2</sup> please refer to the follow photos zone 1 , zone 2.
f	Aggregate leakage fields at 10 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.	yes	MPE limit : Electric field strength 614 V/m * 30% Magnetic field strength 1.63 A/m * 30% Test result : E-field 1.75 V/m H-field 0.19 A/m

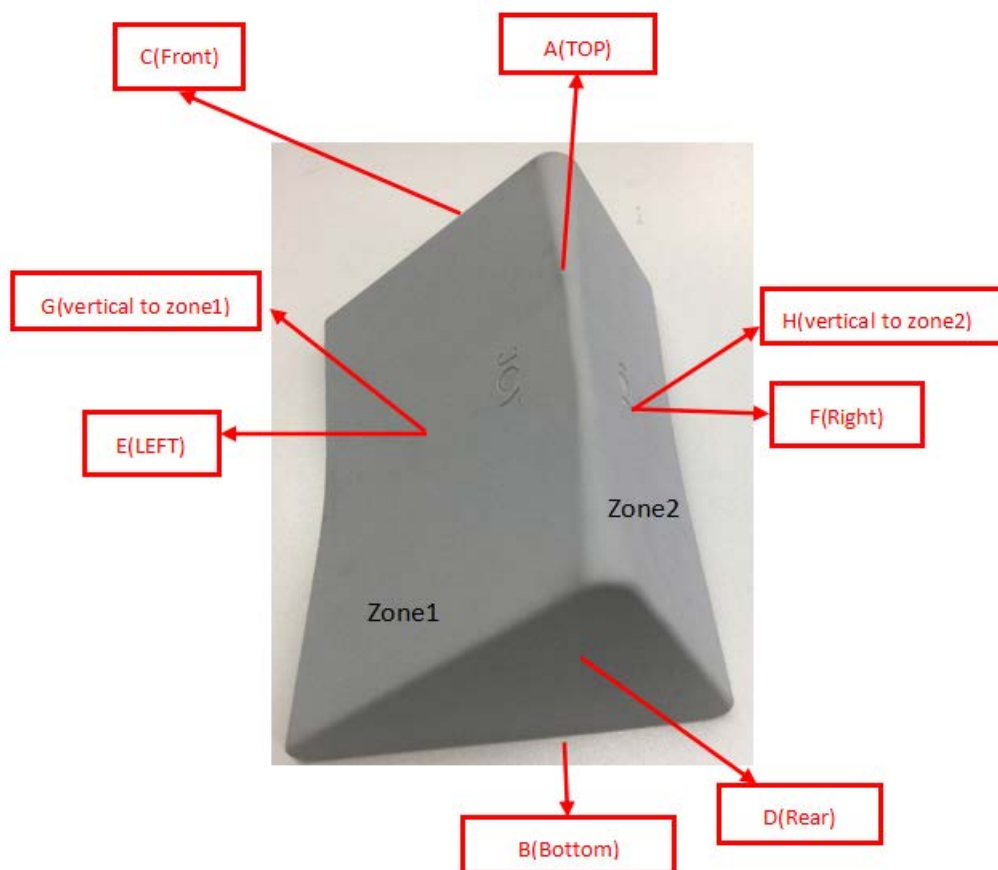
- The EUT coupling surface area :



Zone1



Zone2



Test Position

5.5.1 Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

Zone1 results:

E-Filed Strength at 10 cm from the edges surrounding the EUT (V/m)

Frequency Range (KHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Test Position G	Test Position H	Reference Limit (V/m)	Limits Test (V/m)
111~145	1.29	1.66	1.33	1.42	1.41	1.36	1.75	1.64	184.2	614

H-Filed Strength at 10 cm from the edges surrounding the EUT (A/m)

Frequency Range (KHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Test Position G	Test Position H	Reference Limit (A/m)	Limits Test (A/m)
111~145	0.19	0.15	0.17	0.18	0.15	0.16	0.16	0.17	0.489	1.63

Zone2 results:

E-Filed Strength at 10 cm from the edges surrounding the EUT (V/m)

Frequency Range (KHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Test Position G	Test Position H	Reference Limit (V/m)	Limits Test (V/m)
111~145	1.23	1.64	1.38	1.46	1.41	1.38	1.71	1.69	184.2	614

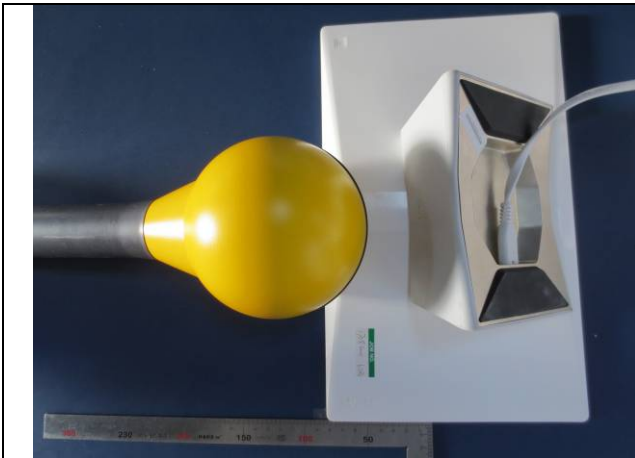
H-Filed Strength at 10 cm from the edges surrounding the EUT (A/m)

Frequency Range (KHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Test Position G	Test Position H	Reference Limit (A/m)	Limits Test (A/m)
111~145	0.12	0.12	0.13	0.14	0.14	0.16	0.15	0.14	0.489	1.63

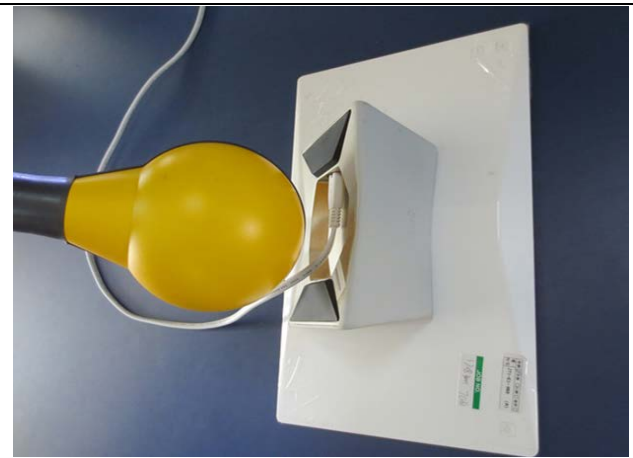
## **6 TEST EQUIPMENTS**

Name	Model	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Broadband field meter	SRM-3006	NARDA	L-0112	2017.3.14	2018.3.13
Magnetic field meter	ELT-400	NARDA	K-1309	2017.3.14	2018.3.13

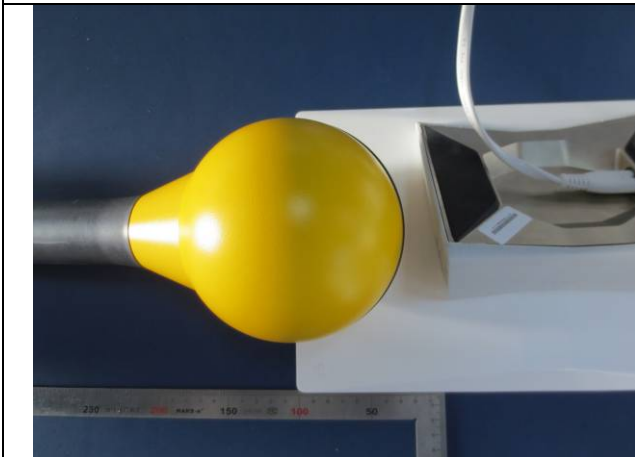
**APPENDIX -- TEST SETUP PHOTOGRAPH**



Zone1 A



Zone1 B



Zone1 C



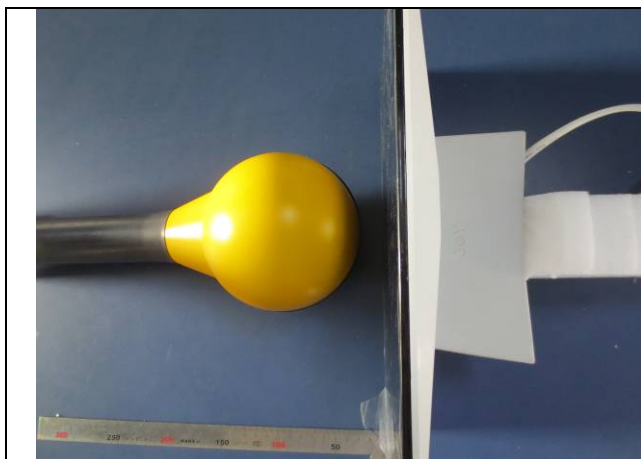
Zone1 D



Zone1 E



Zone1 F

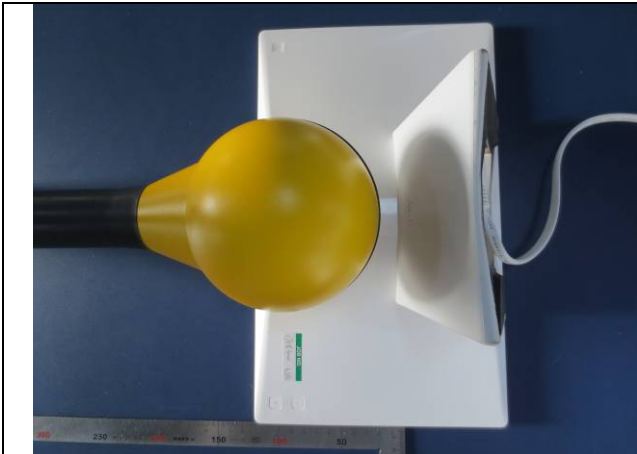


Zone2 G

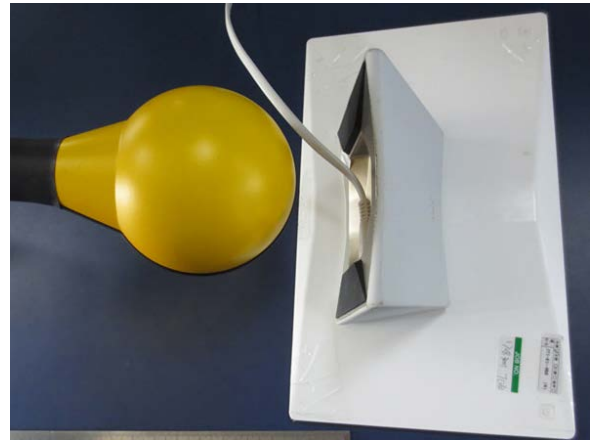


Zone2 H





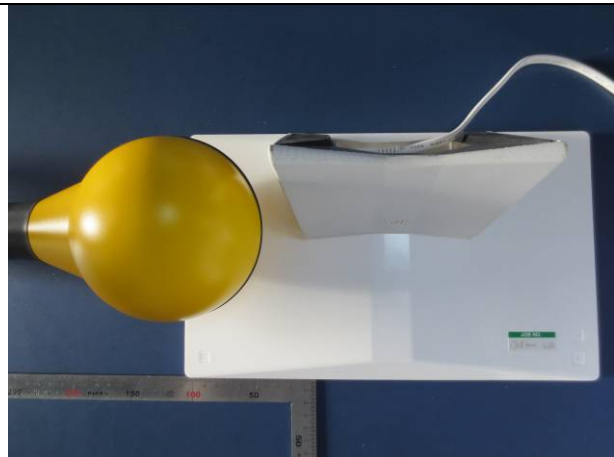
Zone2 A



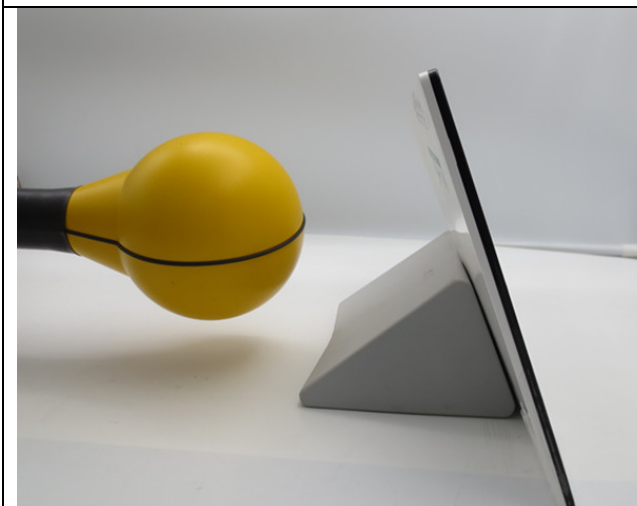
Zone2 B



Zone2 C



Zone2 D



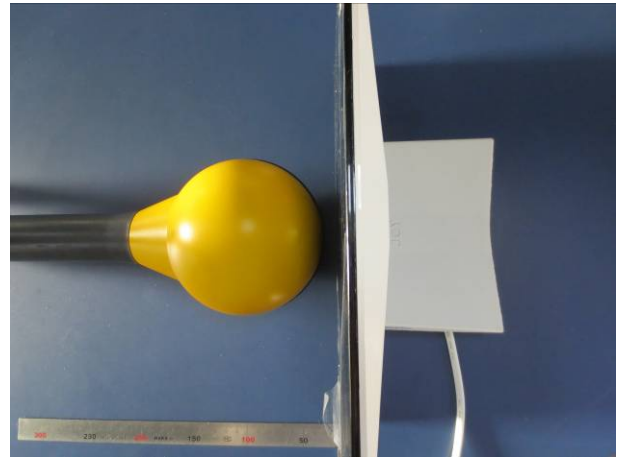
Zone2 E



Zone2 F



Zone2 G



Zone2 H

Photo of MPE Measurement

---End of Test Report---