TEST REPORT

Report No.:	BCTC2012712033-2E
Applicant:	Binatone Electronics International Ltd.
Product Name:	Portable Bluetooth Music Speaker
Model/Type Ref.:	SONIC SUB 500
Tested Date:	2020-12-01 to 2020-12-11
Issued Date:	2020-12-11

Shenzhen BCTC Testing Co., Ltd.

FCC ID:VLJ-SP025

Product Name:	Portable Bluetooth Music Speaker
Trademark:	motorola
Model/Type Ref.:	SONIC SUB 500 SP025
Prepared For:	Binatone Electronics International Ltd.
Address:	25/F, Guangdong Investment Tower, 148 Connaught Road, Central, Sheung Wan, Hong Kong, China
Manufacturer:	Binatone Electronics International Ltd.
Address:	25/F, Guangdong Investment Tower, 148 Connaught Road, Central, Sheung Wan, Hong Kong, China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2020-12-01
Sample tested Date:	2020-12-01 to 2020-12-11
Issue Date:	2020-12-11
Report No.:	BCTC2012712033-2E
Test Standards	FCC CFR 47 part1, 1.1307(b), 1.1310
Test Results	PASS

Tested by:

Kelsey Tan

Kelsey Tan/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp.This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full.The tested sample(s) and the sample information are provided by the client.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2012712033-2E	2020-12-11	Original	Valid

2. PRODUCT INFORMATION

2.1 Product Information

Model/Type Ref.:	SONIC SUB 500 SP025
Model differences:	All the model are the same circuit and RF module, except model names.
Product Description:	Bluetooth Music Speaker with Wireless Charger
Operation Frequency:	115kHz-205kHz
Antenna installation:	Inductive loop coil antenna
Ratings:	USB:DC 5V Battery:DC 3.7V Wireless:10W MAX
Hardware Version:	N/A
Software Version:	N/A

2.2 Support Equipment

Device Type	Brand	Model	Series No.	Data Cable	Remark
Portable Bluetooth Music Speaker	motorola	SP025	N/A	N/A	EUT
Mobile phone	iphone	iphone8P	N/A	N/A	Auxiliary

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2.3 Test Mode

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Test Modes 1	Charging
Test Modes 2	Wireless 5W
Test Modes 3	Wireless 7.5W
Test Modes 4	Wireless 10W

3. TEST FACILITY AND TEST INSTRUMENT USED

3.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

3.2 Test Instrument Used

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Exposure Level Tester	Narda	ELT-400	N-0231	Jul. 15, 2020	Jul. 14, 2021
Magnetic field probe 100cm2	Narda	B-Field Probe 100cm2	M0675	Jul. 15, 2020	Jul. 14, 2021
843 Chamber	ETS	843	84301	Aug. 27, 2020	Aug. 26, 2023

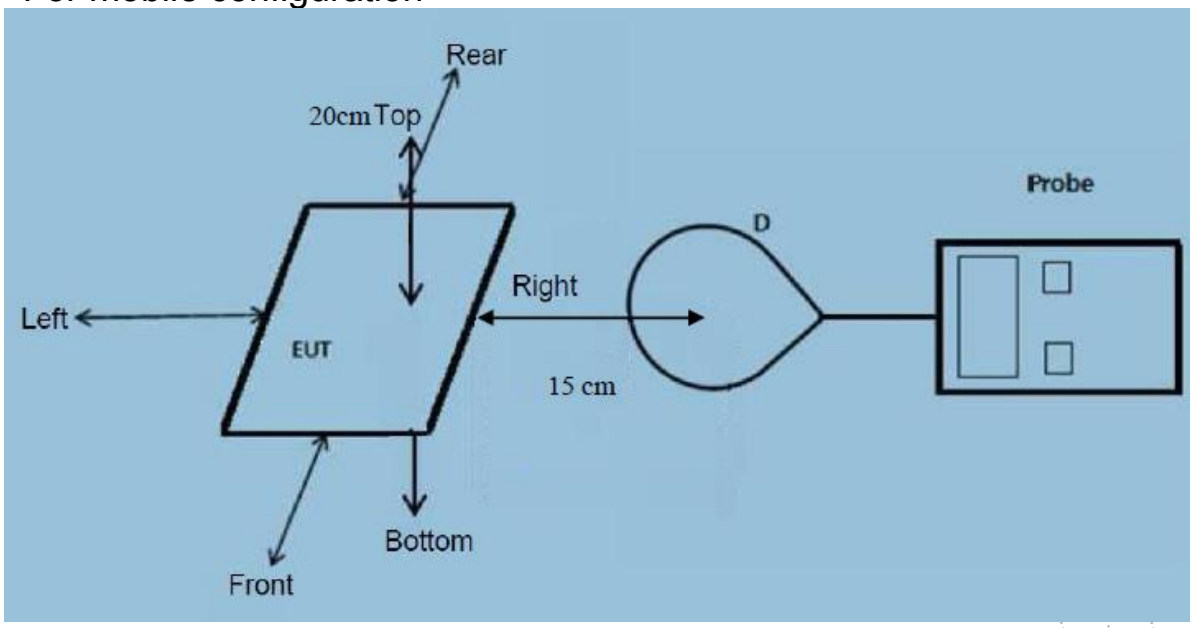
4. METHOD OF MEASUREMENT

4.1 Applicable Standard

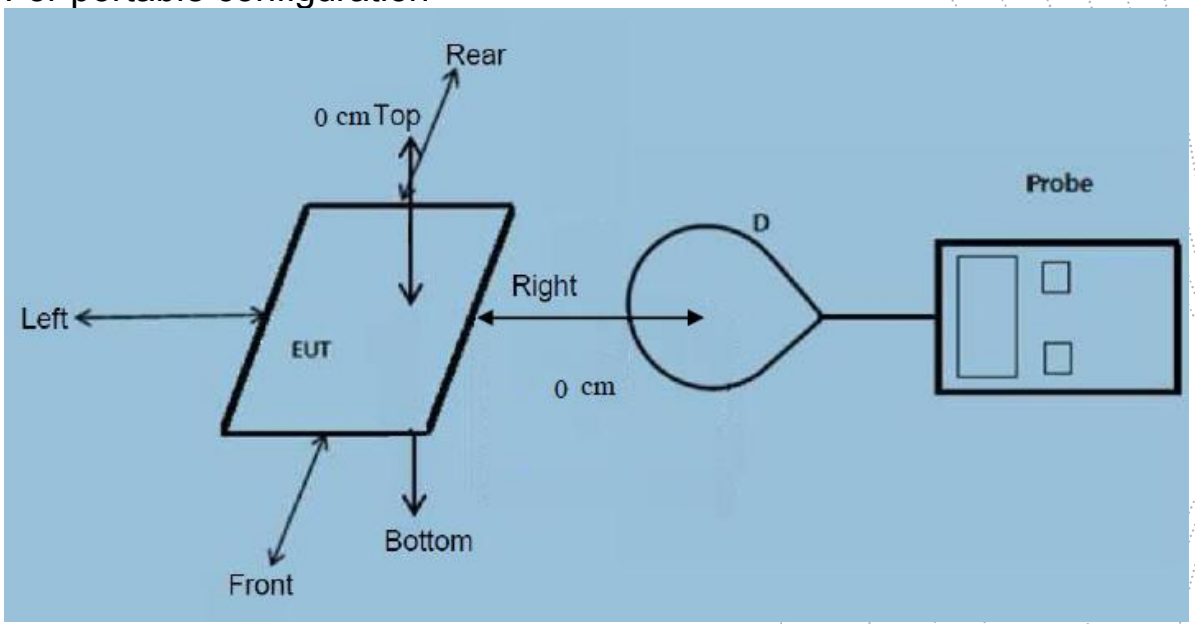
According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03: RF Exposure Wireless Charging Apps v02.

4.2 Block Diagram Of Test Setup

For mobile configuration



For portable configuration



4.3 Limit

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |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
1500-100,000			5	6

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/ cm²)	Averaging Time |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
1500-100,000			1	30

4.4 Test procedure

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.

b) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric centre of probe.

c) The turn table was rotated 360d degree to search of highest strength.

d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.

e) The EUT were measured according to the dictates of KDB 680106D01v03.

4.5 Equipment Approval Considerations

The EUT does comply with item 5(b) of KDB 680106 D01v03

1) Power transfer frequency is less than 1MHz
Yes, the device operate in the frequency range from 115-205KHz

2) Output power from each primary coil is less than or equal to 10 watts.

Yes, the maximum output power of the primary coil is 10W.

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 onlybetween individual pair of coils.

Yes, the transfer system includes only single primary and secondary coils.

4) Client device is inserted in or 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, the EUT is a Portable Bluetooth Music Speaker.

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 10% x MPE limit.

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4.6 E and H field Strength

(The worst data is test mode 4)
E-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.61	0.72	0.75	0.62	0.61	61.4	614
50%	0.115-0.205	0.69	0.66	0.61	0.59	0.56	61.4	614
99%	0.115-0.205	0.52	0.68	0.66	0.56	0.62	61.4	614

H-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.066	0.101	0.072	0.065	0.099	0.163	1.63
50%	0.115-0.205	0.051	0.059	0.075	0.088	0.081	0.163	1.63
99%	0.115-0.205	0.037	0.061	0.056	0.061	0.055	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 0 cm surrounding the EUT and 0cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.96	0.74	0.58	0.43	0.73	61.4	614
50%	0.115-0.205	0.89	0.85	0.61	0.64	0.67	61.4	614
99%	0.115-0.205	0.51	0.75	0.40	0.79	0.99	61.4	614

H-Field Strength at 0 cm surrounding the EUT and 0cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.092	0.102	0.093	0.080	0.092	0.163	1.63
50%	0.115-0.205	0.096	0.104	0.082	0.094	0.081	0.163	1.63
99%	0.115-0.205	0.098	0.077	0.076	0.076	0.085	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 2 cm surrounding the EUT and 2cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.92	0.70	0.53	0.40	0.70	61.4	614
50%	0.115-0.205	0.82	0.83	0.56	0.60	0.65	61.4	614
99%	0.115-0.205	0.50	0.69	0.39	0.75	0.96	61.4	614

H-Field Strength at 2 cm surrounding the EUT and 2cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.090	0.101	0.090	0.076	0.091	0.163	1.63
50%	0.115-0.205	0.093	0.102	0.078	0.092	0.076	0.163	1.63
99%	0.115-0.205	0.097	0.073	0.075	0.075	0.084	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 4 cm surrounding the EUT and 4cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.89	0.67	0.51	0.38	0.68	61.4	614
50%	0.115-0.205	0.80	0.82	0.55	0.57	0.62	61.4	614
99%	0.115-0.205	0.46	0.68	0.37	0.73	0.95	61.4	614

H-Field Strength at 4 cm surrounding the EUT and 4cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.087	0.100	0.089	0.074	0.090	0.163	1.63
50%	0.115-0.205	0.090	0.099	0.074	0.091	0.075	0.163	1.63
99%	0.115-0.205	0.096	0.072	0.072	0.074	0.083	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 6 cm surrounding the EUT and 6cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.89	0.67	0.51	0.38	0.68	61.4	614
50%	0.115-0.205	0.80	0.82	0.55	0.57	0.62	61.4	614
99%	0.115-0.205	0.46	0.68	0.37	0.73	0.95	61.4	614

H-Field Strength at 6 cm surrounding the EUT and 6cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.086	0.096	0.086	0.072	0.087	0.163	1.63
50%	0.115-0.205	0.088	0.097	0.070	0.088	0.071	0.163	1.63
99%	0.115-0.205	0.094	0.071	0.071	0.073	0.080	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 8 cm surrounding the EUT and 8cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.88	0.65	0.50	0.33	0.67	61.4	614
50%	0.115-0.205	0.80	0.81	0.52	0.52	0.61	61.4	614
99%	0.115-0.205	0.45	0.66	0.35	0.71	0.94	61.4	614

H-Field Strength at 8 cm surrounding the EUT and 8cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.085	0.093	0.085	0.070	0.085	0.163	1.63
50%	0.115-0.205	0.086	0.095	0.069	0.087	0.070	0.163	1.63
99%	0.115-0.205	0.091	0.070	0.070	0.072	0.078	0.163	1.63

(The worst data is test mode 4)
E-Field Strength at 10 cm surrounding the EUT and 10cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.205	0.86	0.63	0.49	0.32	0.66	61.4	614
50%	0.115-0.205	0.78	0.80	0.51	0.51	0.60	61.4	614
99%	0.115-0.205	0.42	0.64	0.33	0.70	0.93	61.4	614

H-Field Strength at 10 cm surrounding the EUT and 10cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	10% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.205	0.084	0.091	0.082	0.068	0.083	0.163	1.63
50%	0.115-0.205	0.082	0.093	0.066	0.085	0.068	0.163	1.63
99%	0.115-0.205	0.090	0.068	0.069	0.071	0.075	0.163	1.63

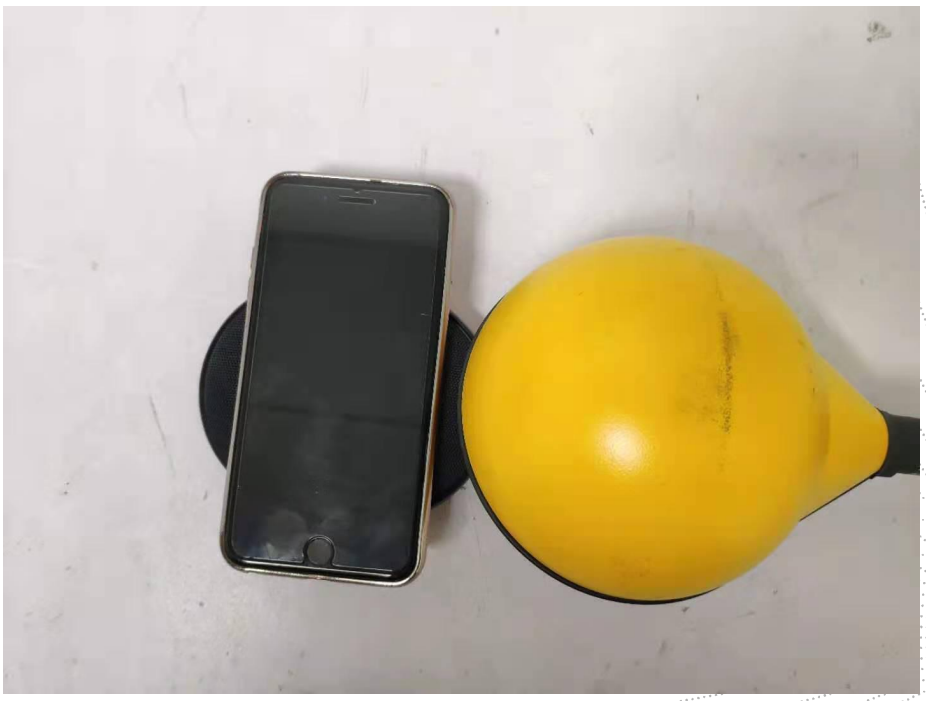
5. PHOTOGRAPHS OF TEST SET-UP

0cm

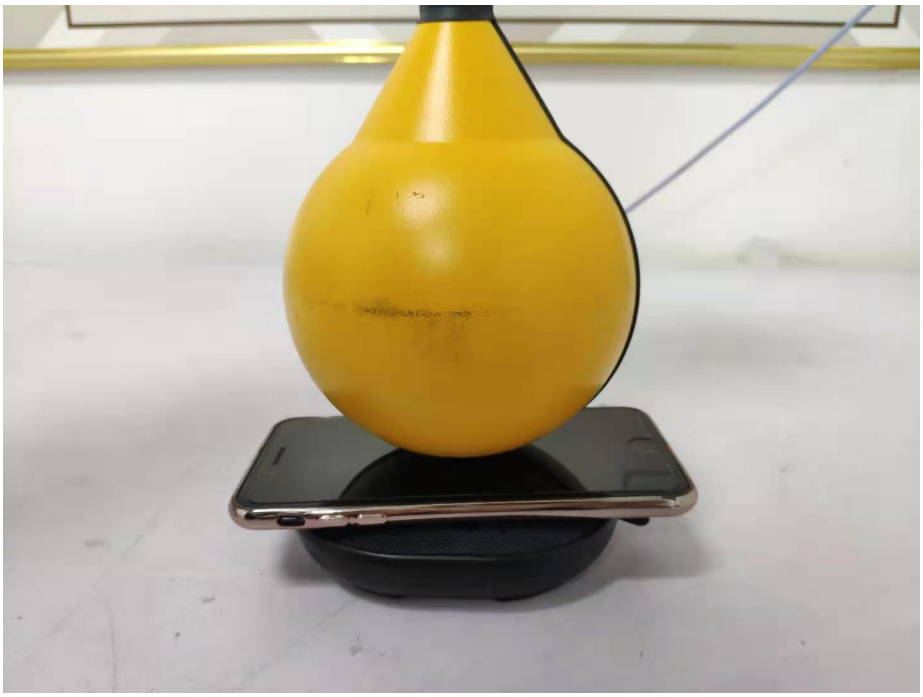
0cm

0cm

0cm



0cm



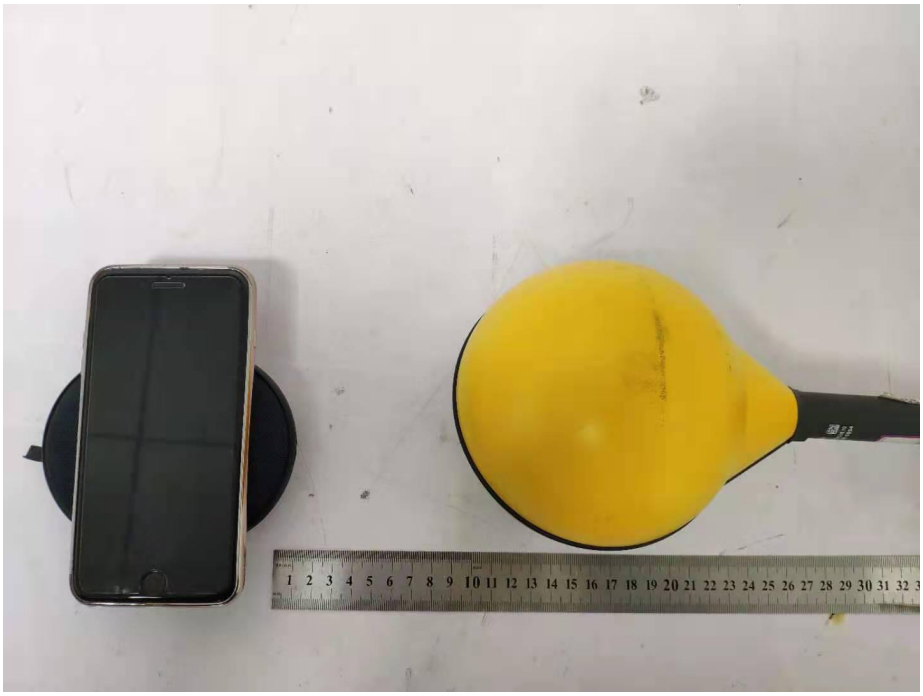
15cm

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

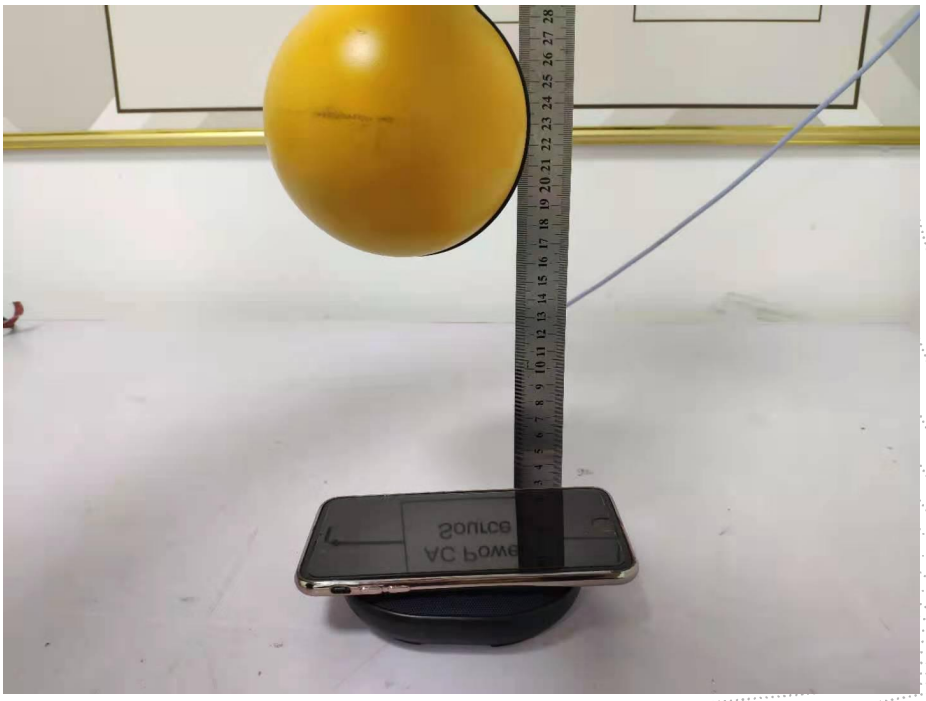
15cm

15cm

15cm



20cm



STATEMENT

1.The equipment lists are traceable to the national reference standards.

2.The test report can not be partially copied unless prior written approval is issued from our lab.

3.The test report is invalid without stamp of laboratory.

4.The test report is invalid without signature of person(s) testing and authorizing.

5.The test process and test result is only related to the Unit Under Test.

6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:
1-2F, East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Ba o'an District,Shenzhen,Guangdong,China

TEL：400-788-9558

P. C.: 518103

FAX：0755-33229357

Website：http://www.bctc-lab.com

E-Mail：bctc@bctc-lab.com.cn

※※※※※ **END** ※※※※※