



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

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Report No.: SZEM180400354502  
Page: 1 of 17

## Human Exposure Report

**Application No.:** SZEM1804003545CR  
**Applicant/ Manufacturer:** Huizhou Artsun Industrial Company Limited  
**Address of Applicant/ Manufacturer:** No.2, Floor 14th, Unit one, Ruihe Commercial Square, No.1 Yandayi Road, Henan'an District, Huizhou, 516007, China  
**Factory:** HUIZHOU VOLANT ROC ELECTRONICS TECH CO., LTD  
**Address of Factory:** C BUILDING, QIANLI INDUSTRIAL AREA, SANDONG TOWN, HUIZHOU CITY, GUANGDONG PROVINCE, CHINA  
**Equipment Under Test (EUT):**  
**EUT Name:** GRAVITY PHONE HOLDER & WIRELESS CHARGER 2-IN-1 KIT  
**Model No.:** VCW-502K  
**FCC ID:** 2ALU4DX502A03  
**Trade Mark:** AUTO DRIVE  
**Standards:** 47 CFR PART 1, Subpart I, Section 1.1310  
**Date of Receipt:** 2018-05-21  
**Date of Test:** 2018-05-24 to 2018-05-25  
**Date of Issue:** 2018-06-01

<b>Test Result :</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.



Keny Xu  
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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**SGS-CSTC Standards Technical Services Co., Ltd.**  
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Report No.: SZEM180400354502

Page: 2 of 17

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2018-06-01		Original

Authorized for issue by:				
				
		Leo Lai /Project Engineer		
				
		Eric Fu /Reviewer		



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 3 of 17

## 2 Contents

	Page
1 COVER PAGE .....	1
2 CONTENTS .....	3
3 GENERAL INFORMATION .....	4
3.1 DETAILS OF E.U.T. ....	4
3.2 DESCRIPTION OF SUPPORT UNITS .....	4
3.3 TEST LOCATION .....	5
3.4 TEST FACILITY .....	5
3.5 DEVIATION FROM STANDARDS .....	5
3.6 ABNORMALITIES FROM STANDARD CONDITIONS .....	5
4 EQUIPMENTS USED DURING TEST .....	6
5 TEST RESULTS .....	7
5.1 RF EXPOSURE TEST .....	7
5.1.1 E.U.T. Operation .....	7
5.1.2 Measurement Data .....	8
6 PHOTOGRAPHS .....	14
6.1 TEST WITH MOBILE PHONE WITH 5, 7, 9, 11, 13, 15CM MEASUREMENT DISTANCE .....	14



### 3 General Information

#### 3.1 Details of E.U.T.

Rated input: Input: 5V/2A, 9V/1.67A  
Baseline Power Profile: 5W  
Operation frequency: 110-148kHz  
Antenna Type: Loop Antenna  
Modulation type: Load modulation

#### 3.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Huawei	HW-059200CHQ	N/A
Dummy load	E-Charging	N/A	N/A
Mobile phone	Samsung	G950F	N/A



### 3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.  
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

### 3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

### 3.5 Deviation from Standards

None.

### 3.6 Abnormalities from Standard Conditions

None.



## 4 Equipments Used during Test

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Due date (yyyy-mm-dd)
1	Electric Field Meter	Schaffner	EMC20	EMC068	2019-03-21



## 5 Test Results

### 5.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310

Measurement Distance: 5cm, 7cm, 9cm, 11cm, 13cm, 15cm

Limit:

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 Exposures</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
300-1500	/	/	f/300	6
1500-100,000	/	/	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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz  
\*=Plane-wave equivalent power density  
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules.  
The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

#### 5.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C

Humidity: 52 % RH

Atmospheric Pressure: 1015 mbar

EUT Operation:

This device has been tested with the dummy load with 10%, 50% and 100% of the rating Current and the device has been tested with mobile phone at the battery <20%, 40~60%(intermediate charge) and >80% status.



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 8 of 17

## 5.1.2 Measurement Data

Output Voltage include DC 9V and DC 5V

Both voltages were tested during the testing and found that the data of DC 9V is the worse than the data of DC 5V, and the worst one data was show on the report.

### Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	5	5.29	9.72	11.19	307
110	Side 2	5	14.90	10.69	9.36	307
110	Side 3	5	11.46	15.22	15.50	307
110	Side 4	5	8.10	13.07	11.60	307
110	Top	5	21.84	22.52	28.01	307
110	Bottom	5	20.21	14.39	15.95	307

### Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	5	0.0686	0.0673	0.0686	0.815
110	Side 2	5	0.0732	0.0698	0.0845	0.815
110	Side 3	5	0.0808	0.0525	0.0793	0.815
110	Side 4	5	0.0737	0.0540	0.0642	0.815
110	Top	5	0.1086	0.1169	0.1113	0.815
110	Bottom	5	0.0814	0.0934	0.0962	0.815

### Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	7	3.56	5.43	6.31	307
110	Side 2	7	3.20	6.17	5.50	307
110	Side 3	7	6.57	8.80	3.96	307
110	Side 4	7	5.29	2.40	6.23	307
110	Top	7	11.84	12.68	15.66	307
110	Bottom	7	10.90	7.87	9.37	307

### Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	7	0.0446	0.0421	0.0442	0.815
110	Side 2	7	0.0458	0.0439	0.0518	0.815
110	Side 3	7	0.0486	0.0346	0.0501	0.815
110	Side 4	7	0.0456	0.0342	0.0412	0.815
110	Top	7	0.0649	0.0722	0.0672	0.815
110	Bottom	7	0.0528	0.0564	0.0639	0.815





# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 9 of 17

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	9	2.85	3.31	3.42	307
110	Side 2	9	2.40	4.28	3.44	307
110	Side 3	9	4.27	5.47	2.32	307
110	Side 4	9	3.64	1.81	3.50	307
110	Top	9	6.40	6.83	8.47	307
110	Bottom	9	6.11	4.24	5.96	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	9	0.0298	0.0252	0.0287	0.815
110	Side 2	9	0.0275	0.0294	0.0313	0.815
110	Side 3	9	0.0324	0.0226	0.0330	0.815
110	Side 4	9	0.0272	0.0208	0.0269	0.815
110	Top	9	0.0392	0.0438	0.0433	0.815
110	Bottom	9	0.0326	0.0339	0.0402	0.815

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	11	1.76	2.03	2.35	307
110	Side 2	11	1.95	3.00	2.79	307
110	Side 3	11	2.68	2.96	1.95	307
110	Side 4	11	2.45	1.79	2.06	307
110	Top	11	3.93	4.07	4.49	307
110	Bottom	11	3.67	2.90	3.18	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	11	0.0177	0.0150	0.0188	0.815
110	Side 2	11	0.0166	0.0181	0.0205	0.815
110	Side 3	11	0.0203	0.0143	0.0196	0.815
110	Side 4	11	0.0179	0.0133	0.0180	0.815
110	Top	11	0.0235	0.0272	0.0271	0.815
110	Bottom	11	0.0200	0.0208	0.0240	0.815



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 10 of 17

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	13	1.93	2.00	1.93	307
110	Side 2	13	1.82	1.78	1.82	307
110	Side 3	13	2.03	1.96	2.03	307
110	Side 4	13	1.82	1.86	1.82	307
110	Top	13	2.43	2.50	2.53	307
110	Bottom	13	2.28	2.28	2.28	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	13	0.0079	0.0068	0.0084	0.815
110	Side 2	13	0.0079	0.0084	0.0094	0.815
110	Side 3	13	0.0089	0.0068	0.0089	0.815
110	Side 4	13	0.0079	0.0063	0.0084	0.815
110	Top	13	0.0110	0.0121	0.0126	0.815
110	Bottom	13	0.0089	0.0094	0.0110	0.815

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			10% Current	50% Current	100% Current	
110	Side 1	15	1.02	1.06	1.02	307
110	Side 2	15	0.96	0.94	0.96	307
110	Side 3	15	1.08	1.04	1.08	307
110	Side 4	15	0.96	0.98	0.96	307
110	Top	15	1.28	1.32	1.34	307
110	Bottom	15	1.21	1.21	1.21	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			10% Current	50% Current	100% Current	
110	Side 1	15	0.0034	0.0030	0.0037	0.815
110	Side 2	15	0.0034	0.0037	0.0041	0.815
110	Side 3	15	0.0039	0.0030	0.0039	0.815
110	Side 4	15	0.0034	0.0027	0.0037	0.815
110	Top	15	0.0048	0.0053	0.0055	0.815
110	Bottom	15	0.0039	0.0041	0.0048	0.815



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 11 of 17

Tested with mobile phone at the battery <20%, 40~60%(intermediate charge) and >80% status.

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	5	20.74	23.68	20.02	307
110	Side 2	5	9.42	18.13	13.83	307
110	Side 3	5	11.37	13.81	16.21	307
110	Side 4	5	12.24	17.66	9.79	307
110	Top	5	13.63	20.04	29.46	307
110	Bottom	5	17.87	16.88	13.44	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	5	0.1018	0.1024	0.0771	0.815
110	Side 2	5	0.0752	0.0836	0.0623	0.815
110	Side 3	5	0.0680	0.0643	0.0772	0.815
110	Side 4	5	0.0616	0.0723	0.0551	0.815
110	Top	5	0.1334	0.1313	0.1181	0.815
110	Bottom	5	0.0872	0.1174	0.1112	0.815

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	7	11.42	13.53	11.49	307
110	Side 2	7	5.54	9.68	8.57	307
110	Side 3	7	7.42	7.44	9.34	307
110	Side 4	7	7.07	9.52	6.23	307
110	Top	7	7.26	11.31	14.16	307
110	Bottom	7	9.62	9.65	7.16	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	7	0.0667	0.0668	0.0483	0.815
110	Side 2	7	0.0492	0.0530	0.0383	0.815
110	Side 3	7	0.0416	0.0426	0.0495	0.815
110	Side 4	7	0.0385	0.0459	0.0370	0.815
110	Top	7	0.0803	0.0789	0.0709	0.815
110	Bottom	7	0.0520	0.0768	0.0694	0.815



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502

Page: 12 of 17

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	9	6.35	7.53	7.10	307
110	Side 2	9	2.97	6.16	2.11	307
110	Side 3	9	1.08	4.66	5.53	307
110	Side 4	9	4.47	5.82	4.02	307
110	Top	9	4.02	6.20	7.58	307
110	Bottom	9	5.37	5.13	4.84	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	9	0.0426	0.0406	0.0313	0.815
110	Side 2	9	0.0319	0.0314	0.0228	0.815
110	Side 3	9	0.0269	0.0254	0.0329	0.815
110	Side 4	9	0.0246	0.0282	0.0227	0.815
110	Top	9	0.0498	0.0526	0.0432	0.815
110	Bottom	9	0.0349	0.0457	0.0416	0.815

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	11	3.59	4.39	4.05	307
110	Side 2	11	1.87	3.45	1.50	307
110	Side 3	11	1.45	2.90	3.50	307
110	Side 4	11	2.71	3.62	2.19	307
110	Top	11	2.14	3.86	4.19	307
110	Bottom	11	2.91	3.75	2.67	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	11	0.0256	0.0249	0.0198	0.815
110	Side 2	11	0.0213	0.0205	0.0144	0.815
110	Side 3	11	0.0179	0.0161	0.0206	0.815
110	Side 4	11	0.0155	0.0177	0.0144	0.815
110	Top	11	0.0319	0.0350	0.0289	0.815
110	Bottom	11	0.0215	0.0298	0.0264	0.815



# SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180400354502  
Page: 13 of 17

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	13	2.64	2.68	2.39	307
110	Side 2	13	1.93	1.89	1.64	307
110	Side 3	13	1.82	2.00	1.86	307
110	Side 4	13	2.03	2.11	1.89	307
110	Top	13	2.18	2.89	2.46	307
110	Bottom	13	1.93	2.57	2.32	307

## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	13	0.0121	0.0115	0.0089	0.815
110	Side 2	13	0.0094	0.0094	0.0063	0.815
110	Side 3	13	0.0084	0.0073	0.0094	0.815
110	Side 4	13	0.0073	0.0079	0.0068	0.815
110	Top	13	0.0141	0.0157	0.0136	0.815
110	Bottom	13	0.0094	0.0131	0.0126	0.815

## Electric Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(V/m)			50%Limit(V/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	15	1.40	1.42	1.27	307
110	Side 2	15	1.02	1.00	0.87	307
110	Side 3	15	0.96	1.06	0.98	307
110	Side 4	15	1.08	1.11	1.00	307
110	Top	15	1.15	1.53	1.30	307
110	Bottom	15	1.02	1.36	1.23	307

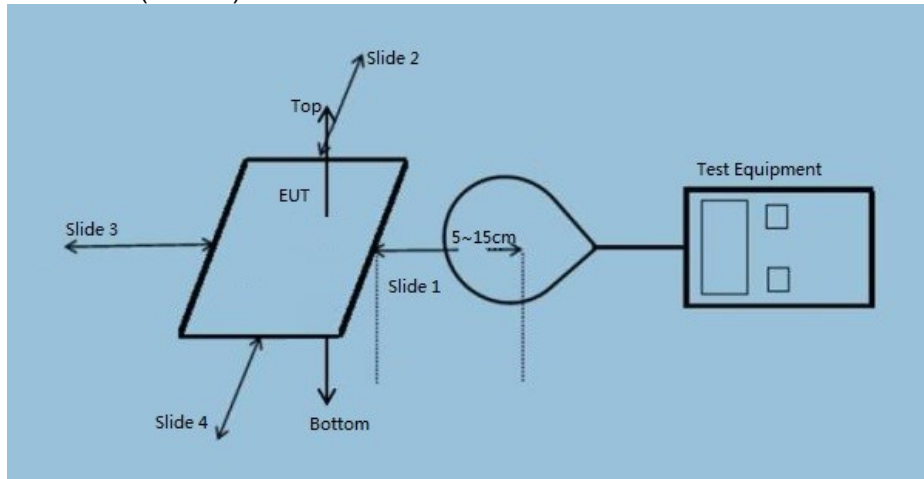
## Magnetic Field Emissions

Operation frequency (kHz)	Test Position	Test Distance(cm)	Probe Measure Result(A/m)			50%Limit(A/m)
			<20% of battery	intermediate charge	>80% of battery	
110	Side 1	15	0.0053	0.0050	0.0039	0.815
110	Side 2	15	0.0041	0.0041	0.0027	0.815
110	Side 3	15	0.0037	0.0032	0.0041	0.815
110	Side 4	15	0.0032	0.0034	0.0030	0.815
110	Top	15	0.0062	0.0069	0.0060	0.815
110	Bottom	15	0.0041	0.0057	0.0055	0.815

## 6 Photographs

### 6.1 Test with mobile phone with 5, 7, 9, 11, 13, 15cm measurement distance

Test Block (6 sides)



Side Top test distance at 5cm

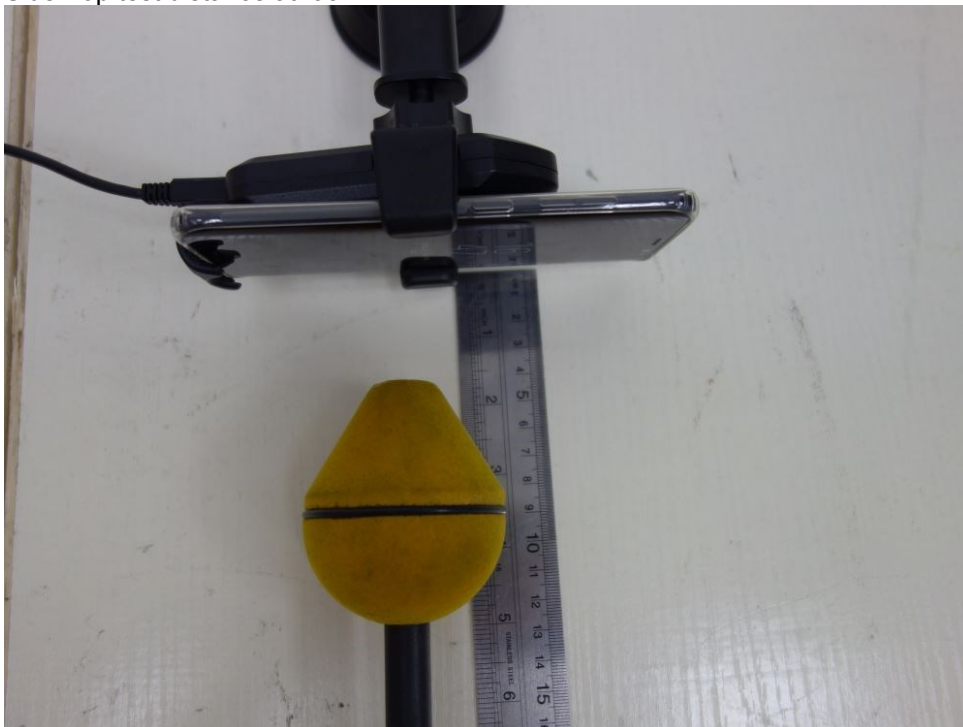




Side Top test distance at 7cm



Side Top test distance at 9cm





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Report No.: SZEM180400354502  
Page: 16 of 17

Side Top test distance at 11cm



Side Top test distance at 13cm







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Report No.: SZEM180400354502  
Page: 17 of 17

Side Top test distance at 15cm



- End of the Report -