

SHENZHEN DNS INDUSTRIES CO., LTD.

TEST REPORT

SCOPE OF WORK

SAR ASSESSMENT– WD-251A, WD-251, 20WMS005,
20WMS005-BLK, 20WMS005-BLU, 20WMS005-GRY,
20WMS005-XXX(X=A-Z)

REPORT NUMBER

191203009SZN-003

ISSUE DATE

21 December 2019

[REVISED DATE]

[-----]

PAGES

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DOCUMENT CONTROL NUMBER

RF Exposure
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Test Report

Applicant: SHENZHEN DNS INDUSTRIES CO., LTD. Number: 191203009SZN-003

23/F Building A, Shenzhen International Innovation
Center, No.1006 Shennan Road, Futian, Shenzhen,
China Date: 21 December 2019

Sample Description

Product : Wireless Power Bank
Model No. : WD-251A, WD-251, 20WMS005, 20WMS005-BLK, 20WMS005-BLU, 20WMS005-GRY, 20WMS005-XXX(X=A-Z)

Brand Name : DNS

Electrical Rating : Input (Micro USB): DC 5V 2A
Wireless Output: DC5V 1A (5W)
USB A*2: DC5V 2.1A
Output: 10.5W Total
Battery Capacity: 5000mAh, 18.5Wh/3.7V

Date Received : 03 December 2019

Date Test Conducted : 03 December 2019 to 21 December 2019

Test Requested : Test for compliance with CFR 47 part 1

Test Method : Environmental evaluation and exposure limit according to FCC
CFR 47 part 1, 1.1307(c) and (d), 1.1310

Test Result : Pass

Conclusion : When determining of test conclusion, measurement uncertainty of tests have been considered.

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Prepared and Checked By:

Approved By:

Steven Zhou

Engineer

Date: 21 December 2019

Kidd Yang

Technical Supervisor

Date: 21 December 2019

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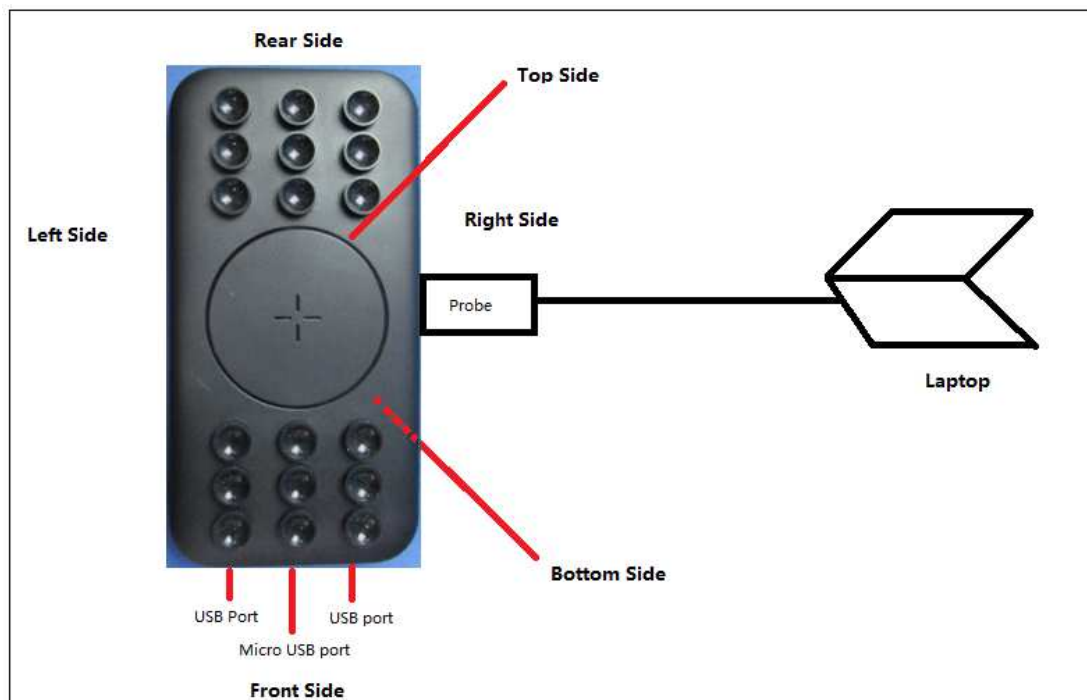
Intertek Testing Services Shenzhen Ltd. Longhua Branch

101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China.

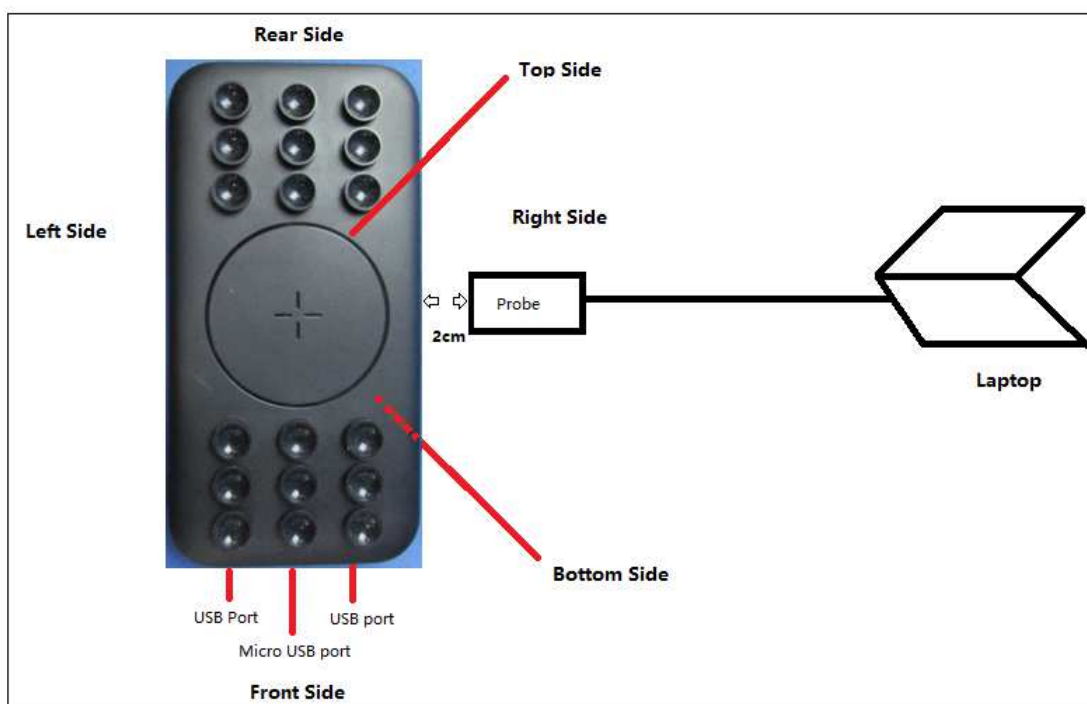
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751

Test Report

Test Setup Configuration

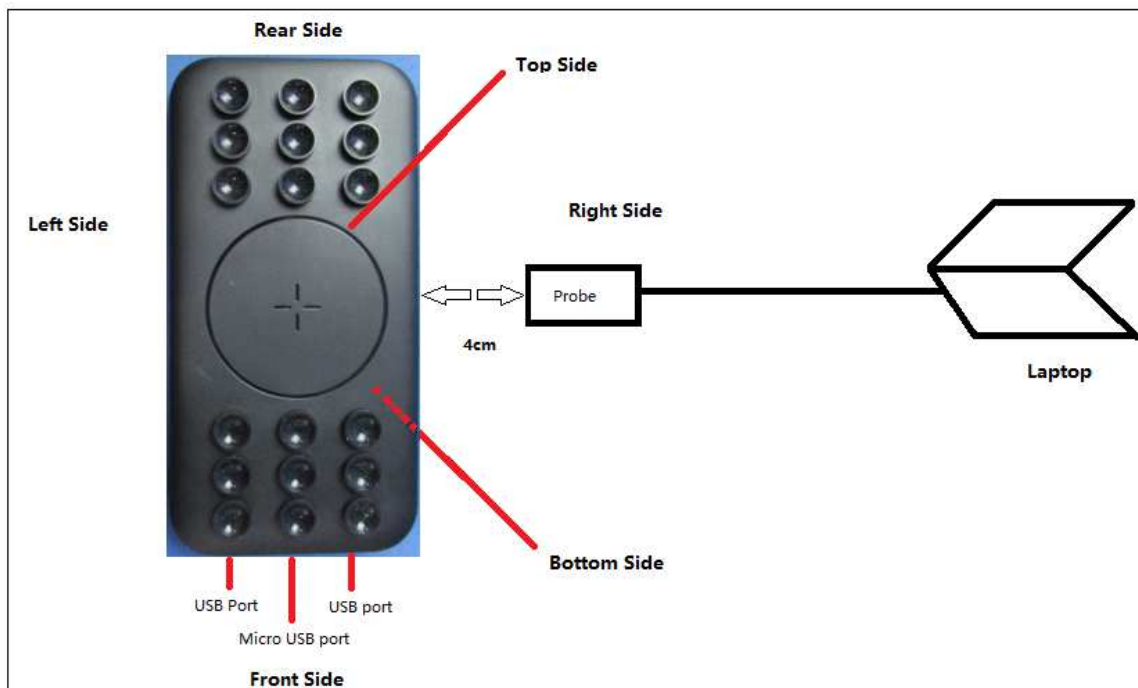


Test Distance: 0mm

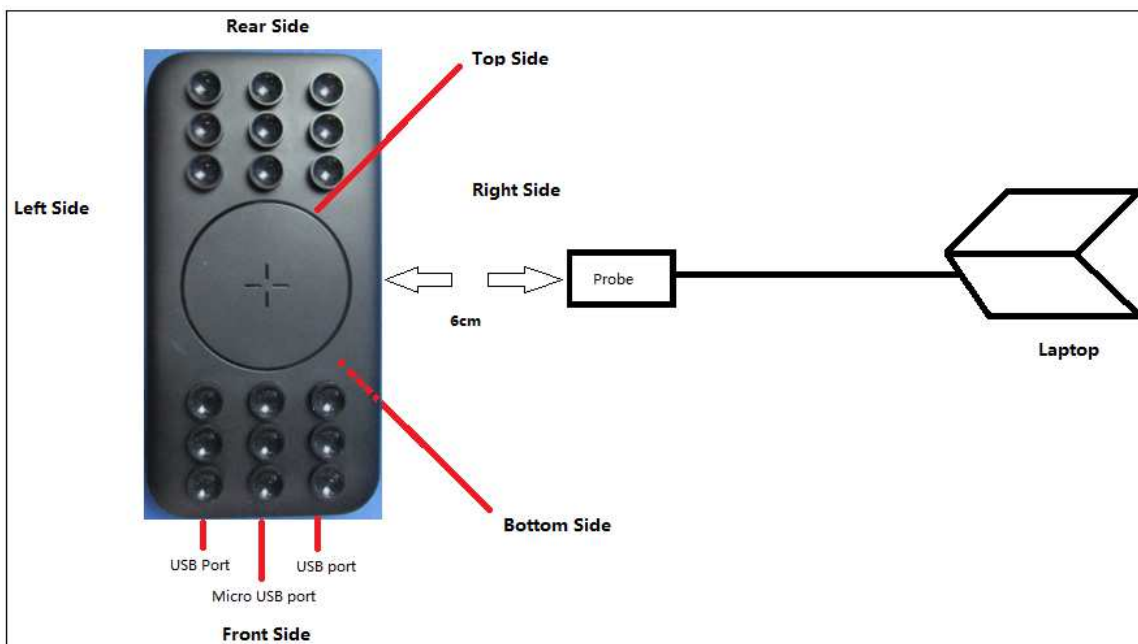


Test Distance: 2cm

TEST REPORT

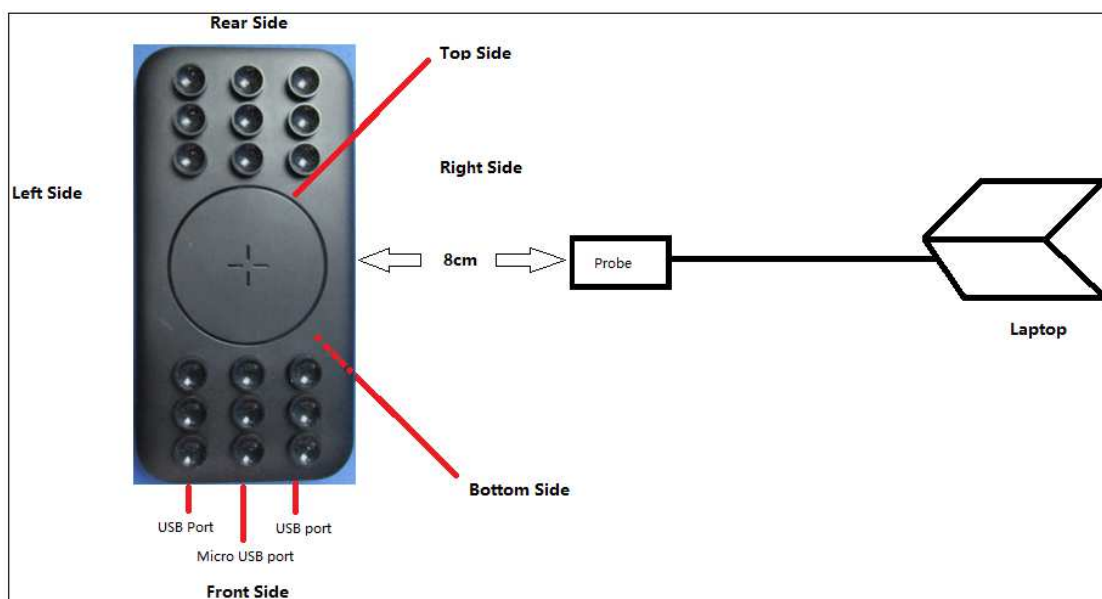


Test Distance: 4cm

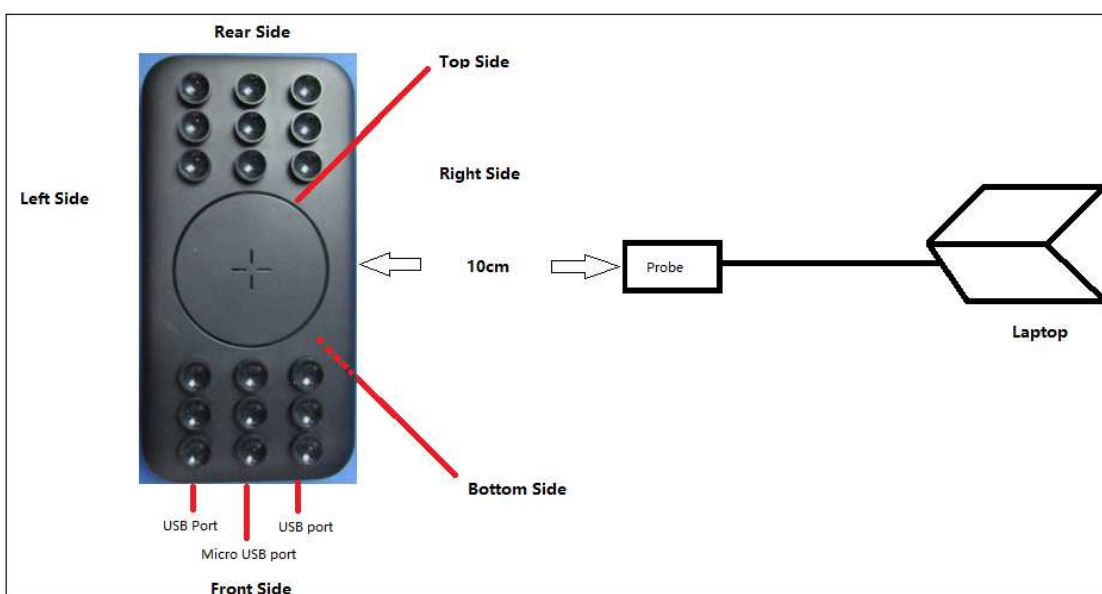


Test Distance: 6cm

TEST REPORT

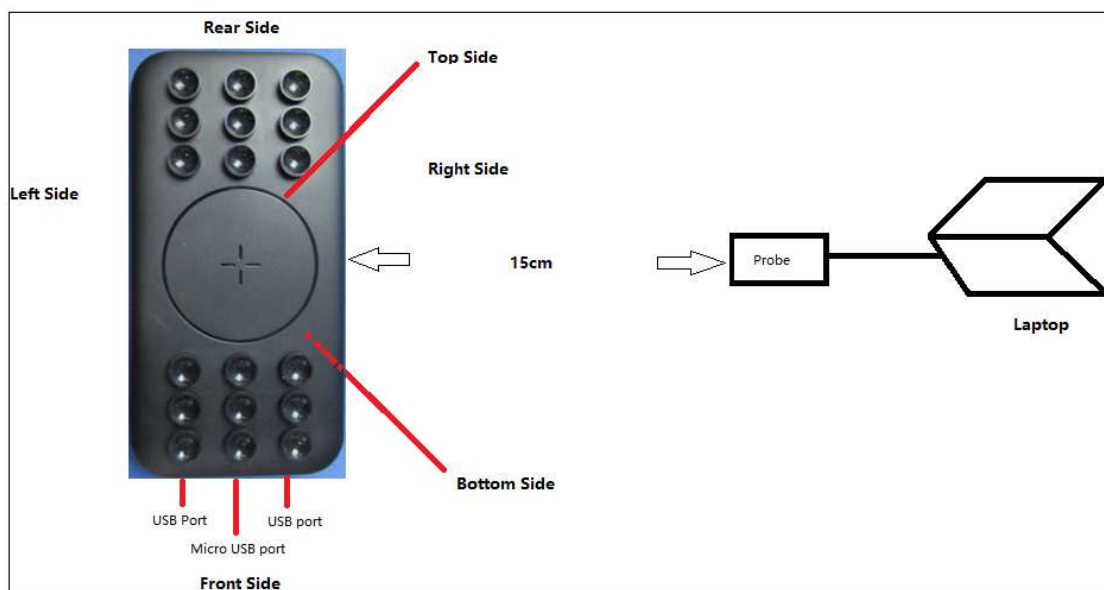


Test Distance: 8cm



Test Distance: 10cm

TEST REPORT



Test Distance: 15cm

Note

- The RF exposure test is performed in the shield room.
- The test distance is between the edge of the charger and the edge of the measurement probe.
- Test distance: 0cm, 2cm, 4cm, 6cm, 8cm, 10cm, 15cm.
- Test Position: Right, Left, Front, Rear, Top, Bottom.

Test Equipment List

Name of instrument	Model	Manufacturer	Cal. Date	Due Date
Exposure Level Tester	EHP-50F	Narda	01-Apr-19	01-Apr-20

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Reference Limit:

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

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation.

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100)*	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3 – 1.34	614	1.63	(100)*	30

Note: * = Plane wave equivalent power density

Test Result:

H-Field Strength at 0 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.179	0.259	0.618	1.371	0.279	0.184	1.63
0.110-0.205	50% Battery Level	0.165	0.271	0.653	1.296	0.189	0.179	1.63
0.110-0.205	99% Battery Level	0.155	0.269	0.584	1.206	0.194	0.168	1.63
0.110-0.205	Stand-by	0.136	0.239	0.359	1.129	0.109	0.142	1.63

H-Field Strength at 2 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.155	0.236	0.409	1.043	0.219	0.163	1.63
0.110-0.205	50% Battery Level	0.147	0.209	0.438	0.937	0.152	0.161	1.63
0.110-0.205	99% Battery Level	0.146	0.203	0.328	0.838	0.187	0.152	1.63
0.110-0.205	Stand-by	0.129	0.193	0.319	0.634	0.118	0.129	1.63

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H-Field Strength at 4 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.139	0.123	0.339	0.843	0.139	0.175	1.63
0.110-0.205	50% Battery Level	0.113	0.119	0.347	0.737	0.142	0.159	1.63
0.110-0.205	99% Battery Level	0.109	0.129	0.230	0.838	0.131	0.175	1.63
0.110-0.205	Stand-by	0.118	0.105	0.128	0.634	0.129	0.149	1.63

H-Field Strength at 6 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.129	0.128	0.135	0.429	0.138	0.143	1.63
0.110-0.205	50% Battery Level	0.128	0.124	0.138	0.332	0.135	0.136	1.63
0.110-0.205	99% Battery Level	0.121	0.135	0.128	0.445	0.137	0.128	1.63
0.110-0.205	Stand-by	0.131	0.138	0.119	0.225	0.128	0.119	1.63

H-Field Strength at 8 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.129	0.112	0.305	0.783	0.128	0.149	1.63
0.110-0.205	50% Battery Level	0.101	0.103	0.329	0.759	0.128	0.161	1.63
0.110-0.205	99% Battery Level	0.093	0.112	0.212	0.737	0.127	0.165	1.63
0.110-0.205	Stand-by	0.101	0.103	0.109	0.628	0.118	0.139	1.63

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H-Field Strength at 10 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.136	0.128	0.140	0.392	0.138	0.144	1.63
0.110-0.205	50% Battery Level	0.118	0.146	0.129	0.284	0.142	0.145	1.63
0.110-0.205	99% Battery Level	0.092	0.138	0.151	0.288	0.144	0.138	1.63
0.110-0.205	Stand-by	0.090	0.118	0.129	0.245	0.121	0.129	1.63

H-Field Strength at 15 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (A/m)	Probe Position Rear (A/m)	Probe Position Left (A/m)	Probe Position Right (A/m)	Probe Position Top (A/m)	Probe Position Bottom (A/m)	Limits (A/m)
0.110-0.205	1% Battery Level	0.139	0.118	0.131	0.234	0.124	0.138	1.63
0.110-0.205	50% Battery Level	0.129	0.136	0.139	0.242	0.138	0.141	1.63
0.110-0.205	99% Battery Level	0.118	0.133	0.145	0.263	0.161	0.163	1.63
0.110-0.205	Stand-by	0.089	0.107	0.094	0.229	0.091	0.104	1.63

E-Field Strength at 0 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.728	0.593	0.229	0.405	0.741	0.549	614
0.110-0.205	50% Battery Level	0.539	0.653	0.235	0.339	0.684	0.559	614
0.110-0.205	99% Battery Level	0.629	0.529	0.232	0.203	0.739	0.492	614
0.110-0.205	Stand-by	0.533	0.736	0.219	0.334	0.449	0.537	614

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E-Field Strength at 2 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.639	0.628	0.225	0.229	0.469	0.539	614
0.110-0.205	50% Battery Level	0.501	0.848	0.219	0.147	0.484	0.545	614
0.110-0.205	99% Battery Level	0.638	0.619	0.249	0.194	0.337	0.493	614
0.110-0.205	Stand-by	0.649	0.728	0.258	0.157	0.464	0.538	614

E-Field Strength at 4 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.530	0.894	0.235	0.393	0.674	0.727	614
0.110-0.205	50% Battery Level	0.694	0.793	0.239	0.283	0.872	0.693	614
0.110-0.205	99% Battery Level	0.694	0.537	0.253	0.395	0.693	0.585	614
0.110-0.205	Stand-by	0.593	0.639	0.202	0.268	0.394	0.496	614

E-Field Strength at 6 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.501	0.725	0.225	0.405	0.642	0.710	614
0.110-0.205	50% Battery Level	0.584	0.739	0.229	0.275	0.838	0.664	614
0.110-0.205	99% Battery Level	0.619	0.548	0.232	0.374	0.658	0.574	614
0.110-0.205	Stand-by	0.524	0.613	0.205	0.257	0.403	0.426	614

E-Field Strength at 8 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.481	0.710	0.219	0.424	0.601	0.692	614
0.110-0.205	50% Battery Level	0.525	0.692	0.219	0.262	0.729	0.624	614
0.110-0.205	99% Battery Level	0.529	0.519	0.228	0.359	0.612	0.562	614
0.110-0.205	Stand-by	0.501	0.609	0.219	0.248	0.392	0.401	614

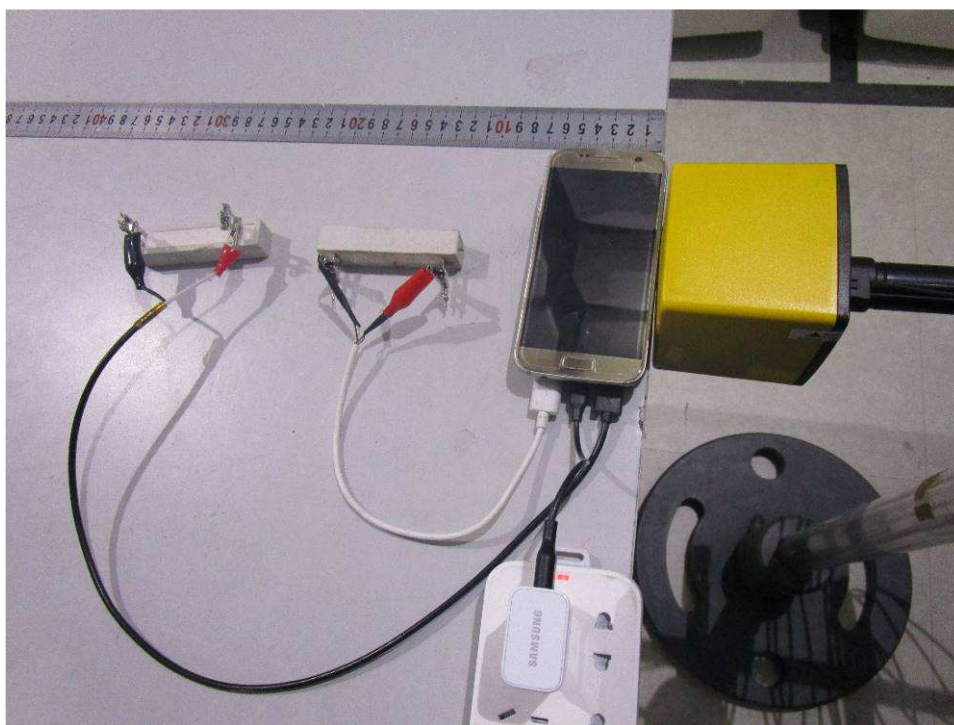
E-Field Strength at 10 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.461	0.516	0.291	0.367	0.595	0.529	614
0.110-0.205	50% Battery Level	0.349	0.493	0.284	0.314	0.239	0.557	614
0.110-0.205	99% Battery Level	0.308	0.597	0.268	0.353	0.158	0.429	614
0.110-0.205	Stand-by	0.294	0.392	0.213	0.238	0.381	0.398	614

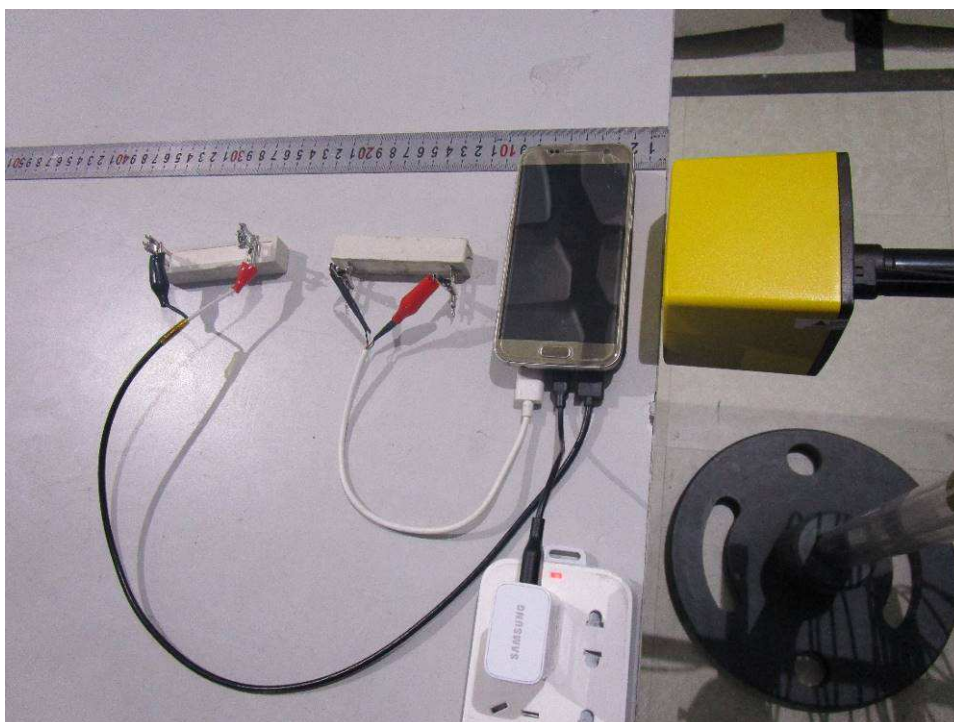
E-Field Strength at 15 cm surrounding the EUT

Frequency Range (MHz)	EUT Operation mode	Probe Position Front (V/m)	Probe Position Rear (V/m)	Probe Position Left (V/m)	Probe Position Right (V/m)	Probe Position Top (V/m)	Probe Position Bottom (V/m)	Limits (V/m)
0.110-0.205	1% Battery Level	0.213	0.423	0.223	0.294	0.344	0.394	614
0.110-0.205	50% Battery Level	0.305	0.391	0.252	0.205	0.153	0.382	614
0.110-0.205	99% Battery Level	0.283	0.464	0.235	0.257	0.194	0.391	614
0.110-0.205	Stand-by	0.236	0.313	0.167	0.192	0.283	0.294	614

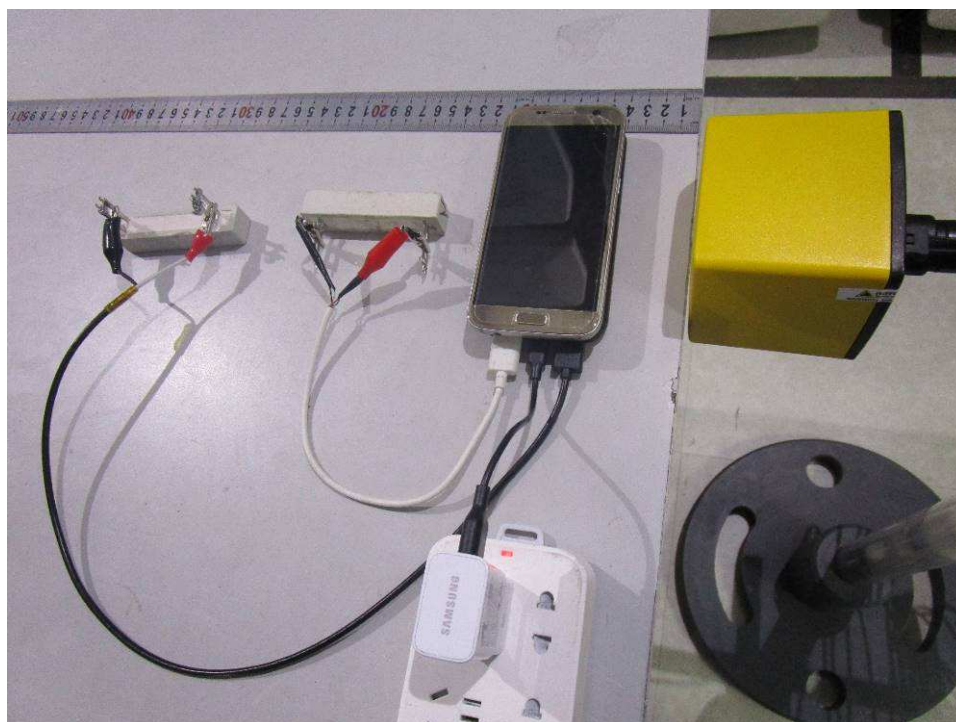
E-Field and H-Field Test Setup photos



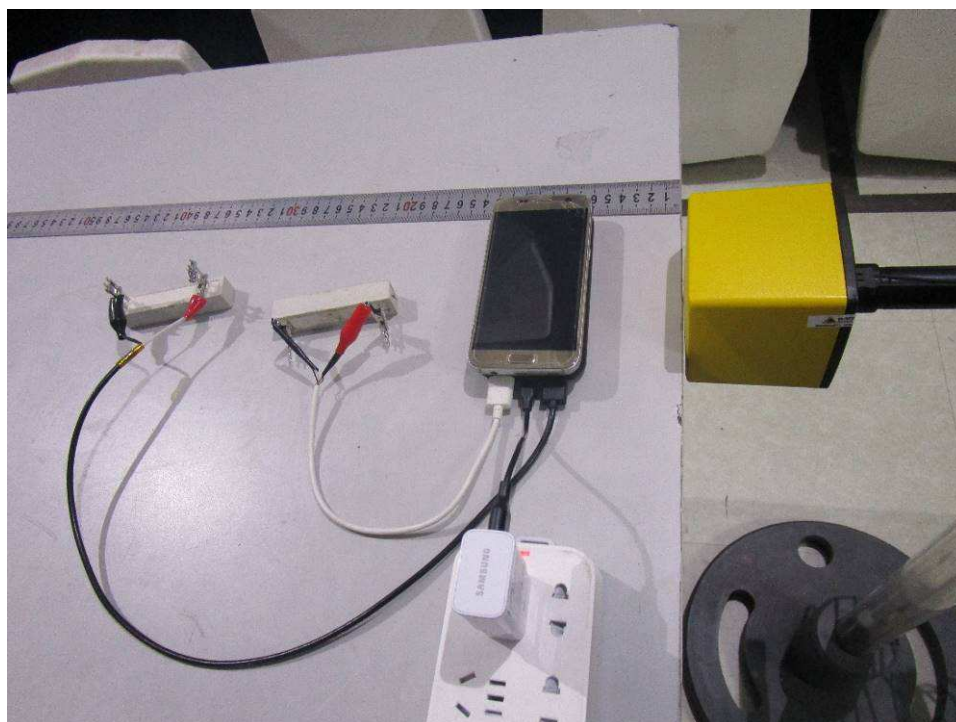
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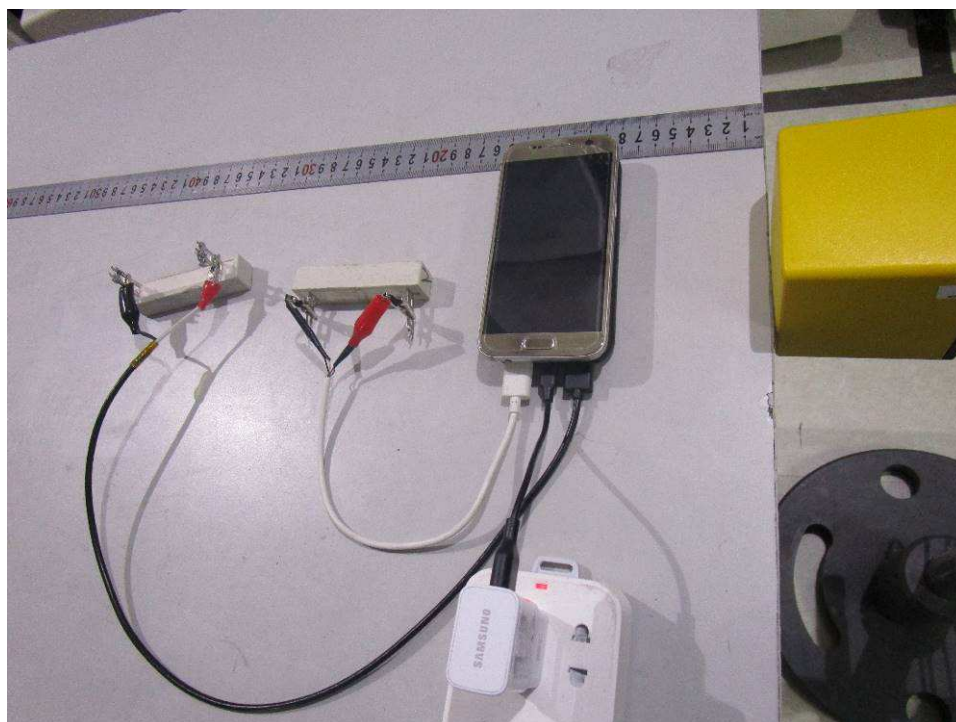
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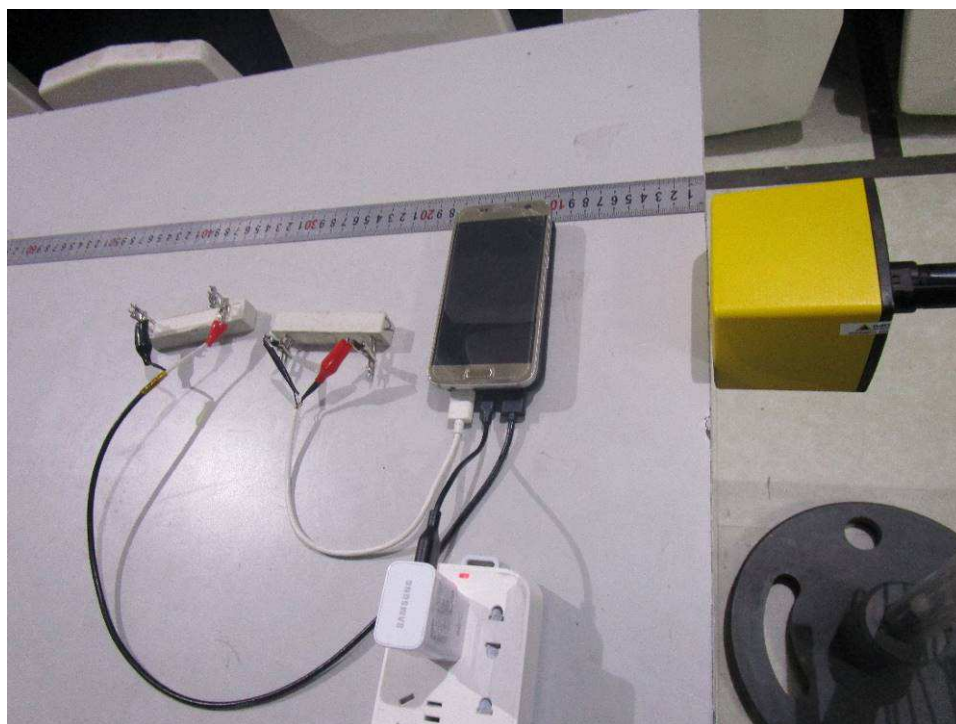
Test Distance: 4 cm



Test Distance: 6 cm

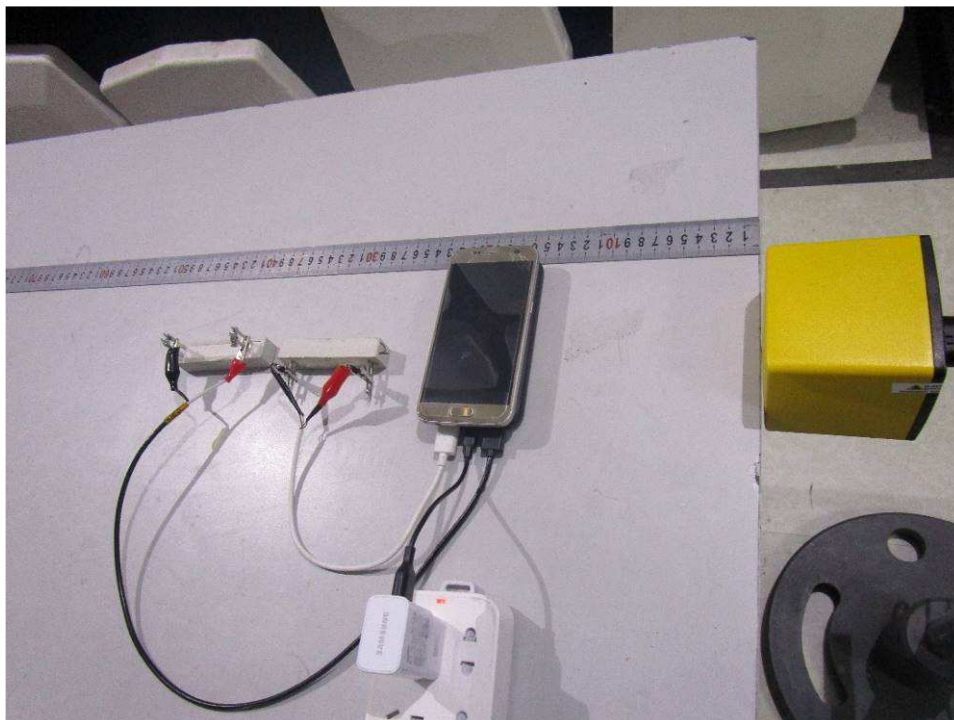


Test Distance: 8 cm



Test Distance: 10 cm

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Test Distance: 15 cm

***** End of Report*****