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MPE TEST REPORT

Report No:STS1903216H01

Issued for

SAMSUNG ELECTRONICS CO., LTD.

19 Chapin Rd., Building D Pine Brook New Jersey United States

Product Name:	Power Bank
Brand Name:	SAMSUNG
Model Name:	EB-U1200
Series Model:	N/A
FCC ID:	A3LEBU12001
Test Standard:	FCC CFR 47 part 1, 1.1310

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**TEST RESULT CERTIFICATION**

Applicant's name: SAMSUNG ELECTRONICS CO., LTD.
Address: 19 Chapin Rd., Building D Pine Brook New Jersey United States
Manufacture's Name: SCUD (FUJIAN) ELECTRONICS CO., LTD.
Address: No.98, Jiangbin East Avenue, Mawei District, Fuzhou, Fujian, P.R. China

Product description

Product Name: Power Bank
Brand Name: **SAMSUNG**
Model Name: EB-U1200
Series Model: N/A
Standards: FCC CFR 47 part 1, 1.1310
Test Procedure: KDB 680106 D01 RF Exposure Wireless Charging App v03
And KDB Tracking Number 671578 ; TCB Workshop, October 2018, 5.2 RF Exposure Procedures

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of performance of tests...: 05 Mar. 2019 ~12 Mar. 2019
Date of Issue: 13 Mar. 2019
Test Result.....: **Pass**

Testing Engineer :

(Chris chen)

Technical Manager :

(Sunday Hu)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	13 Mar. 2019	STS1812089H01	ALL	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

KDB 680106 D01 RF Exposure Wireless Charging App v03

And KDB Tracking Number 671578 ; TCB Workshop, October 2018, 5.2 RF Exposure Procedures

FCC CFR 47			
Standard Section	Test Item	Judgment	Remark
FCC CFR 47 part1, 1.1310 KDB680106 D01v03	Electric Field Strength (E) (V/m)	PASS	
	Magnetic Field Strength (H) (A/m)	PASS	

1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.

Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

FCC test Firm Registration Number: 625569

A2LA Certificate No.: 4338.01;

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainly
1	All emissions,radiated 30-200MHz	$\pm 3.43\text{dB}$
2	All emissions,radiated 200MHz-1GHz	$\pm 3.57\text{dB}$
3	All emissions,radiated(<30M)(9KHz-30MHz)	$\pm 2.45\text{dB}$
4	Conducted Emission(150KHz-30MHz)	$\pm 2.70\text{dB}$

1.3 GENERAL DESCRIPTION OF EUT

Product Name	Power Bank
Trade Name	SAMSUNG
Model Name	EB-U1200
Series Model	N/A
Model Difference	N/A
Equipemnt Category	Non-ISM frequency
Operating frequency	110.5-205KHZ
Modulation Type	MPE
Adapter	Battery(rating): Rated Voltage: 3.85V Charge Limit: 4.35V Capacity: 10000mAh
Power Rating:	Input: 5V, 2A; 9V, 1.67A; 12V, 1.25A Output: USB: 5V, 2A; 9V, 1.67A; 12V, 1.25A Wireless: 9V1A OR 5V 1A
Hardware version number	Ver 1.6
Software version number	Rev 1.1

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	NOTE
1	SAMSUNG	EB-U1200	Coil	NA	Antenna

The EUT antenna is Coil Antenna. No antenna other than that furnished by the responsible party shall be used with the device.

- 5V, 2A; 9V, 1.67A; 12V, 1.25A modes all have been tested, only worse case 5V 2A is reported



1.4 EQUIPMENTS LIST FOR ALL TEST ITEMS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMF Meter	NARDA	ELT-400	N-0342	2018.10.22	2019.10.21
EMF probe	NARDA	B-Field Probe	M-0779	2018.10.22	2019.10.21
Broadband field meter NARDA NBM	550	Broadband field meter NARDA NBM	E-1275	2018.10.22	2019.10.21
Broadband field probe NARDA EF	0391	Broadband field probe NARDA EF	D-0894	2018.10.22	2019.10.21



2. MAXIMUM PERMISSIBLE EXPOSURE

2.1 MAXIMUM PERMISSIBLE EXPOSURE

Requirements

According to the item 5 of KDB 680106 D01 RF Exposure Wireless Charging App v03:

- (1) Power transfer frequency is less than 1 MHz.
Yes
- (2) Output power from each primary coil is less than or equal to 15 watts.
Yes
- (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
- (4) Client device is placed directly in contact with the transmitter.
Yes
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
No
- (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

Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limit of Maximum Permissible Exposure(MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	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				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	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).

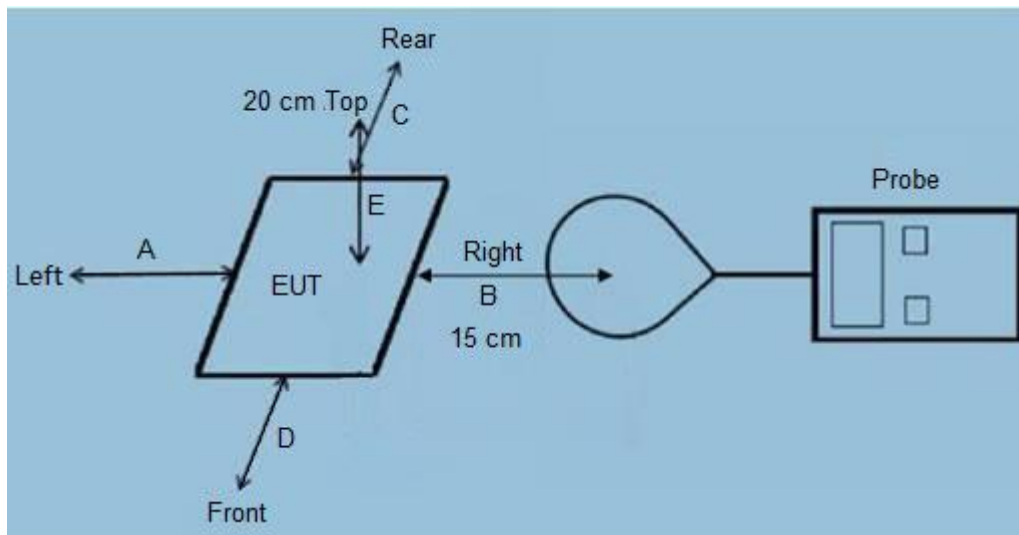
2.2 TEST PROCEDURE

- 1) The RF exposure test was performed in an echoic chamber;
- 2) The measurement probe was placed at test distance(15 cm from edges, 20 cm from top) Which is between the edge of the charger and the geometric center of probe, for test setup A;
- 3) In addition to what is described in KDB 680106 D01, please measure and provide magnetic and electrical field strength at a distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 1cm. Which is between the edge of the charger and the edge of of probe, for test setup B;
- 4) The highest emission level was recorded and compared with limit as soon as measurement of each points (A,B, C,D, E)were completed;
- 5) The EUT was measured according to the dictates of KDB680106D01v03; And KDB Tracking Number 671578 ; TCB Workshop, October 2018, 5.2 RF Exposure Procedures

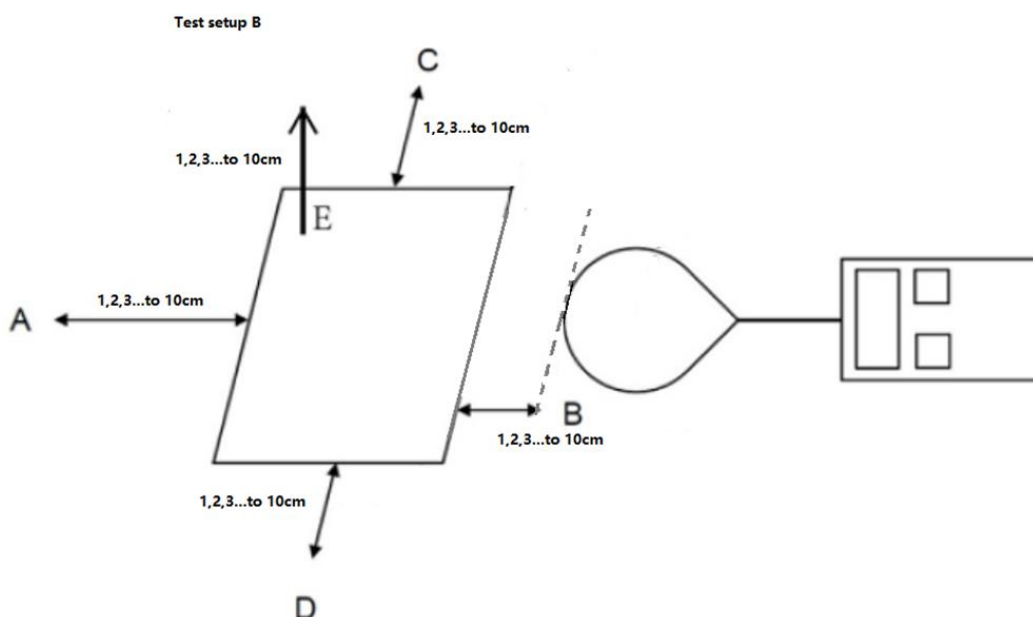
Remark : The EUT' s test position A, B,C, D and E is valid for the E and H field measurements.

2.3 TEST SETUP

A:



B:



2.4 MAXIMUM PERMISSIBLE EXPOSURE

Test Result for Test setup A:

E-Filed Strength at (15 cm from edges A,B,C,D, 20 cm from top E) surrounding the EUT (V/m)

Charging Load Worse case	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Limits (V/m)
<5%	3.181	3.197	3.189	3.184	3.171	614
50%	3.148	3.062	3.128	3.059	3.143	614
>90 %	3.101	3.107	2.962	3.003	3.099	614

H-Filed Strength at (15 cm from edges A,B,C,D, 20 cm from top E) surrounding the EUT (A/m)

Charging Load Worse case	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Limits (A/m)
<5%	0.304	0.246	0.320	0.246	0.311	1.63
50%	0.184	0.190	0.131	0.160	0.203	1.63
>90 %	0.132	0.045	0.190	0.165	0.194	1.63

Note: Both the mode with AC power and the internal battery operating mode have been tested. The worst case is the internal battery operating mode, only report the worst case.

Test Result for Test setup B:

E-Filed Strength at (distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 1cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (V/m)

Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Limits (V/m)
1	5.181	5.197	5.189	5.184	5.171	614
2	5.151	5.126	5.113	5.110	5.071	614
3	4.988	4.964	5.051	5.069	5.095	614
4	5.009	4.975	4.898	5.053	4.950	614
5	5.144	5.136	4.965	4.974	5.093	614
6	5.117	5.089	4.892	4.918	5.073	614
7	5.134	4.826	4.554	4.614	4.609	614
8	4.971	4.498	4.906	4.683	4.968	614
9	4.840	4.505	4.935	4.592	4.809	614
10	4.993	4.825	4.908	4.530	4.838	614

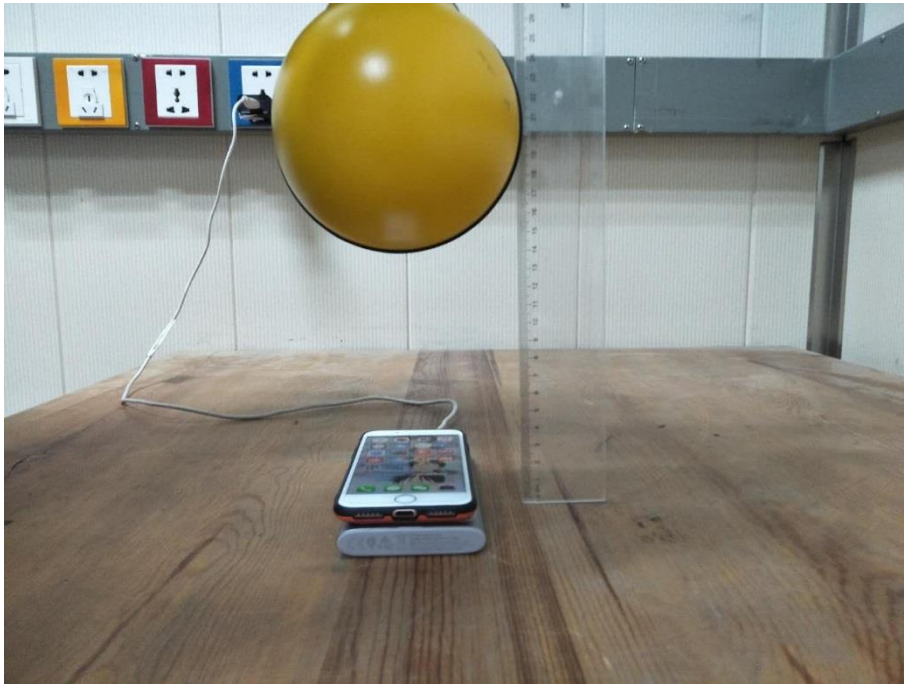
H-Filed Strength at (distance 10cm to 1cm at 1cm iteration, i.e. at a distance of 10cm, 9cm, 8cm, 1cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Limits (A/m)
1	1.504	1.446	1.520	1.446	1.511	1.63
2	1.388	1.388	1.338	1.391	1.382	1.63
3	1.390	1.394	1.325	1.335	1.248	1.63
4	1.361	1.319	1.383	1.158	1.323	1.63
5	1.044	1.388	1.303	1.101	1.407	1.63
6	1.335	1.207	1.140	1.073	0.954	1.63
7	1.289	1.367	1.249	1.239	0.841	1.63
8	1.242	1.155	1.122	1.020	1.029	1.63
9	1.152	1.148	1.066	1.267	0.871	1.63
10	0.749	0.662	0.743	1.013	1.144	1.63

Note:

- Both the mode with AC power and the internal battery operating mode have been tested. The worst case is the internal battery operating mode, only report the worst case.
- <5% ,50% ,>90% load all have been tested ,only worse case Max load <5% is reported.

MPE SETUP PHOTO



*****END OF THE REPORT*****