

# TEST REPORT

## OF

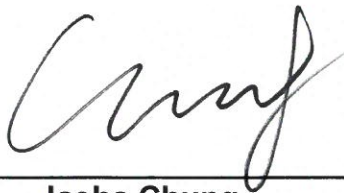
FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: 2AD5K-PTC100

Equipment Under Test : Wireless Charging Pad  
Model Name : PTC-100  
Applicant : PARTRON Co., Ltd.  
Manufacturer : PARTRON Co., Ltd.  
Date of Test(s) : 2015.08.11 ~ 2015.08.20  
Date of Issue : 2015.08.20

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Jaeha Chung

Date:

2015.08.20

Approved By:



Hyunchoe You

Date:

2015.08.20

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## 1. General information

### 1.1. Testing laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 435-837

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Phone No. : +82 31 688 0901

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### 1.2. Details of applicant

Applicant : PARTRON Co., Ltd.

Address : 22, Samsung 1-ro 2-gil, Hwaseong-Si, Gyeonggi-Do, Korea

Contact Person : Jeong, Hae-Young

Phone No. : + 82 31 201 7800

### 1.3. Description of EUT

<b>Kind of Product</b>	Wireless Charging Pad
<b>Model Name</b>	PTC-100
<b>Power Supply</b>	DC 5 V (AC 100 V ~ 240 V Travel Adaptor)
<b>Frequency Range</b>	115 kHz ~ 205 kHz
<b>Operating Conditions</b>	-20 °C ~ 60 °C
<b>Antenna Type</b>	Inductive loop coil antenna
<b>H/W Version</b>	Ver2.3
<b>S/W Version</b>	Ver P.1.0.6

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## 1.4. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal Date	Cal Interval	Cal Due.
E-Field Probe	ETS-LINDGREN	HI-6005	00047870	Mar. 11, 2015	Annual	Mar. 11, 2016
Magnetic Field Sensor	HIOKI	0850-B1	3471	Jul. 16, 2015	Annual	Jul. 16, 2016
Magnetic Field Hitester	HIOKI	FT3470-50	140430999	Jul. 16, 2015	Annual	Jul. 16, 2016
Anechoic Chamber	SY Corporation	L x W x H (9.6 m x 6.4 m x 6.6 m)	N/A	N.C.R.	N/A	N.C.R.

## 1.5. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL009018	2015.08.20	Initial

## 1.6. Worst case of test configurations

In order to check all kinds of possible configurations, EUT was evaluated with appropriate client and under each charging condition as below table.

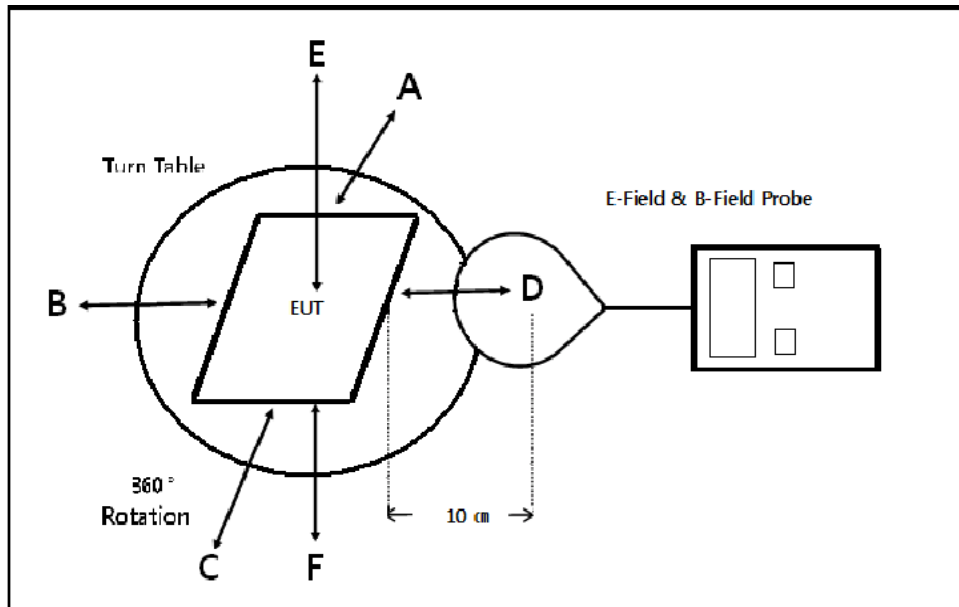
EUT configuration	Description
Charging Mode with client device (Galaxy Note 4 : SM-N910U FCC ID : A3LSMN910U)	Less than 1 % of battery
	Less than 50 % of battery
	100 % full charging of battery

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## 2. Test Result

### 2.1. Test Setup

#### 2.1.1. Distance 10 cm between the edge of EUT and center of Probe



### 2.2. Measurement procedure

- The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- The measurement probe was placed at test distance (10 cm) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.
- The EUT were measured according to the dictates of KDB 680106 D01v02.

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### 2.3. Equipment Approval Considerations.

The EUT does comply with item 5.2 of KDB 680106 D01v02.

a) Power transfer frequency is less than 1 MHz.

- The device operates in the frequency range from 115 kHz to 205 kHz.

b) Output power from each primary coil is less than 5 watts.

- DC 5 V (Travel adapter output) → Output power from each primary coil : 5 W (Max.)

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.

- The transfer system includes only single primary and secondary coils. Refer to a photo in the Internal photos.

d) Client device is inserted in or placed directly in contact with the transmitter.

- Client device is placed directly in contact with the transmitter.

e) The maximum coupling surface area of the transmit (charging) device:

- The EUT coupling surface area :  $7.2 \text{ cm(W)} \times 7.2 \text{ cm(D)} = 51.84 \text{ cm}^2$ ,  
 $51.84 \text{ cm}^2 < 60 \text{ cm}^2$ .

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.

- Refer to following test results.

The EUT field strength levels < 30 % of the MPE limit 1.63 A/m

0.318 A/m (Max.) < 0.489 A/m

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

§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 as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter

**TABLE 1 - LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
(A) Limits for Occupational /Control Exposures				
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 – 1 500			f/300	6
1 500 – 100 000			5	6
(B) Limits for General Population / Uncontrol Exposures				
<b><u>0.3 – 1.34</u></b>	<b><u>614</u></b>	<b><u>1.63</u></b>	*(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 – 1 500			f/1 500	30
1 500 – 100 000			1.0	30

f = frequency in MHz

\* = Plane wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

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## 2.5. E and H field strength

Ambient temperature : (23 ± 1) °C  
Relative humidity : 47 % R.H.

### 2.5.1. E-Field Strength at 10 cm from the edges surrounding the EUT

**Test Mode : Normal charging mode with client device**

Test condition: Charging mode (less than 1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
115 ~ 205	7.682	5.268	8.447	7.744	9.843	9.147	614.00

Test condition: Charging mode (less than 50 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
115 ~ 205	6.074	6.843	6.618	8.493	10.847	10.471	614.00

Test condition: Charging mode (100 % battery status of client device)

Frequency Range (kHz)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
115 ~ 205	8.723	8.372	7.243	3.449	10.443	9.334	614.00

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## 2.5.2. H-Field Strength at 10 cm from the edges surrounding the EUT

**Test Mode : Normal charging mode with client device**

Test condition: Charging mode (less than 1 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Limits (A/m)
115 ~ 205	0.044	0.056	0.061	0.044	0.053	0.113	1.63

Test condition: Charging mode (less than 50 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Limits (A/m)
115 ~ 205	0.113	0.100	0.055	0.080	0.053	0.318	1.63

Test condition: Charging mode (100 % battery status of client device)

Frequency Range (kHz)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Limits (A/m)
115 ~ 205	0.049	0.080	0.061	0.081	0.098	0.126	1.63

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