





TEST REPORT

1. Applicant	
Name	: Shinan Information Communication
Address	: 7-3, Dangsang-ro 148beon-gil, Gunpo-si, Gyeonggi-do, Korea
FCC ID	: 2AG84DOTWACBTX15001
2. Products	
Name	: Wireless air charging battery pad
Model No.	: DOTWACBTX15001
Variant Model No.	: N/A
Manufacturer	Shinan Information Communication
Address	: 7-3, Dangsang-ro 148beon-gil, Gunpo-si, Gyeonggi-do, Korea
3. Test Standard	: KDB 680106 D01v02.
4. Test Result	: PASS
5. Dates of Test	: January 07, 2015 to January 20, 2015
6. Date of Issue	: January 22, 2015
7. Test Laboratory	: Standard Engineering Co. Ltd. FCC Designation Number : 624439

Tested by	Approved by
	
SoonHo, Kim / Test Engineer	SeongSeok, Seo / Compliance Engineer

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2. General Information

2.1. Client Information

Applicant	:	Shinan Information Communication
Address of Applicant	:	7-3, Dangsan-ro 148beon-gil, Gunpo-si, Gyeonggi-do, Korea
Manufacturer	:	Shinan Information Communication
Address of Manufacturer	:	7-3, Dangsan-ro 148beon-gil, Gunpo-si, Gyeonggi-do, Korea

2.2. General information description

Equipment under test	: Wireless air charging battery pad
Model name	: DOTWACBTX15001
Serial number	: N/A
Frequency Range	: 110 KHz to 205 KHz
Antenna type	: Internal type(Coil antenna)
Power source	: 5V DC

2.3. Test frequency

Frequency (KHz)	:	Frequency Range
	:	110 KHz to 205 KHz

2.4. Description of Support Units

The EUT has been tested with simulate receiver, resistor and adapter provided by applicant.

Adapter details Model : A1205
Input : AC 100-240 50/60 Hz 0.15A
Output : DC 5V 1.0A

2.5. Abnormalities from Standard Conditions

None.

2.6. Deviation from Standards

None.

2.7. Test Location

377-11, Sinjang-ri, Eumam-myeon, Seosan-si, ChoongNam 356-844, South Korea
(FCC Designation Number : 624439)

This test site is in compliance with ISO/IEC 17025 for general requirements for the competence of testing and calibration laboratories.



3. Equipment Used during Test

No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (MM-DD-YY)	Next Cal. Date (MM-DD-YY)
1	EMI Test Receiver	LIG	ER-265	L1009B016	03/04/2015	03/04/2016
2	EMI Test Receiver	Rhode & Schwarz	ESIB7	3311	02/11/2015	02/11/2016
2	Bi-log Antenna	Schwarzbeck	VULB9163	164	09/15/2014	09/15/2016
5	Loop Antenna	EMCO	6502	9206-2769	02/13/2014	02/13/2016
6	Spectrum Analyzer	Agilent	E4440A	US45303130	02/04/2015	02/04/2016
15	Power Meter	Agilent	E4418B	MY405111655	02/04/2015	02/04/2016
16	Power Sensor	HP	8485A	2347A02746	02/04/2015	02/04/2016
20	Signal Generator	HP	83630A	3420A00728	02/04/2015	02/04/2016
23	Pre Amplifier	Agilent	8449B	3008A02105	02/04/2015	02/04/2016
25	Signal Generator	Rhode & Schwarz	SML03	102330	01/23/2015	02/04/2016
26	POWER DIVIDER	Agilent	11636B	50309	02/04/2015	02/04/2016
27	Power Sensor	Agilent	8482B	3318A05111	02/04/2015	02/04/2016
29	DC Power Supply	HP	6032A	US35420383	02/04/2015	02/04/2016
32	Bandreject Filter	K&L Microwave	50140	555	02/04/2015	02/04/2016
33	Horn Antenna	SCHWARZBECK	BBHA9120A	346	01/27/2014	01/27/2016
34	Horn Antenna	A.H. SYSTEMS	SAS-572	269	08/07/2015	08/07/2017
35	DC Power Supply	Provice	PWS-5005D	205050	02/04/2015	02/04/2016
36	LISN	Rhode & Schwarz	ESH2-Z5	100164	01/27/2015	01/27/2016
38	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100137	11/13/2015	11/13/2016
39	Multimeter	Fluke	70	63551015	11/13/2015	11/13/2016
40	Electric Field Probe	WANDEL & GOLTERMANN	EMR-20	AR-0041	12/08/2015	12/08/2016

4. Environmental evaluation and exposure limit according to FCC CFR 47 Part 1.1307(b), 1.1310

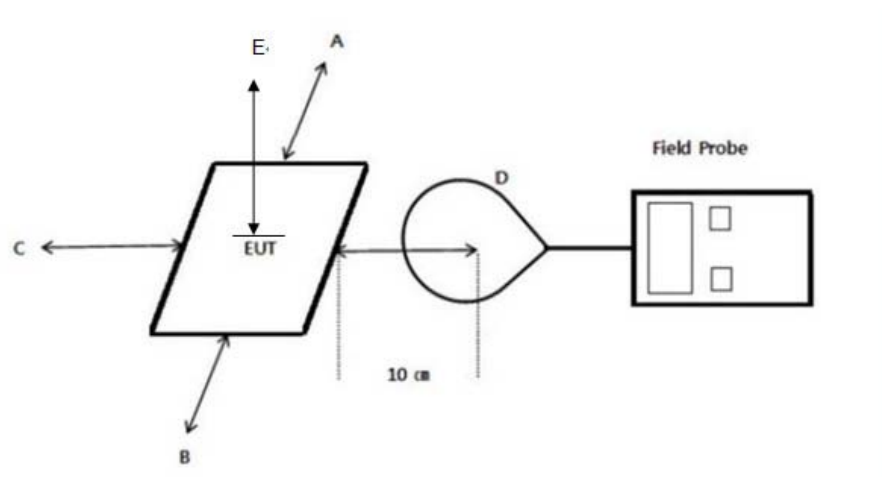
4.1. Limits for Maximum Permissible Exposure (MPE)

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 / Control Exposures				
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

4.2. Test mode

Mode	Description
Charging mode With load	Using Max load
	Using Mid load
	Using Min load
Standby mode	No load

4.3. Test mode



1. The test was performed on 360 degree turn table in anechoic chamber.
2. The probe was placed at distance 10 cm which is between the edge of the charger and the geometric centre of the probe.
3. The highest emission level was recorded and compared with limit as soon as measurement of each point; A, B, C, D, E were completed.
4. The EUT was measured according to the KDB 680106 D01v02.

4.4. Test results

4.4.1 E-Field Strength at 10 cm from each edges the EUT (Pad type)

Test Mode	Frequency Range (KHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	Limits (V/m)
Charging mode With load (Max)	110 KHz to 205 KHz	9.29	2.51	6.15	3.75	10.78	614
Charging mode With load (Mid)	110 KHz to 205 KHz	8.54	2.48	5.17	3.13	9.45	614
Charging mode With load (Min)	110 KHz to 205 KHz	5.63	2.34	3.49	2.74	7.63	614
Standby mode (Not charging)	110 KHz to 205 KHz	4.95	2.29	1.65	2.18	5.61	614

4.4.2 H-Field Strength at 10 cm from each edges the EUT (Pad type)

Test Mode	Frequency Range (KHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	Limits (A/m)
Charging mode With load (Max)	110 KHz to 205 KHz	0.327	0.068	0.448	0.104	0.110	1.63
Charging mode With load (Mid)	110 KHz to 205 KHz	0.249	0.067	0.319	0.085	0.091	1.63
Charging mode With load (Min)	110 KHz to 205 KHz	0.186	0.065	0.264	0.079	0.082	1.63
Standby mode (Not charging)	110 KHz to 205 KHz	0.141	0.064	0.047	0.061	0.073	1.63

5. Equipment Approval Considerations.

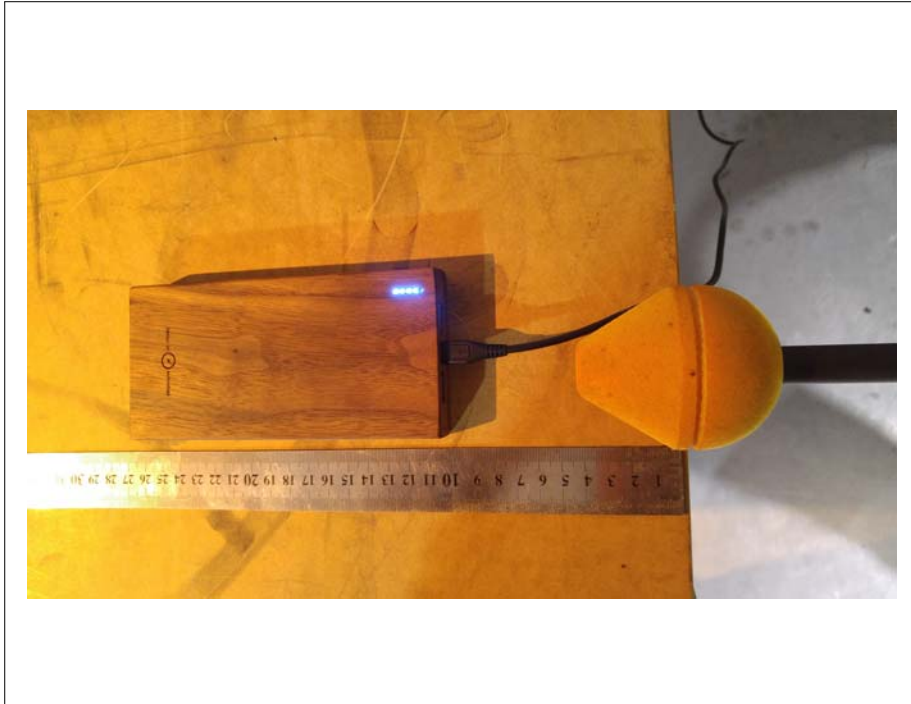
The EUT does comply with item 5.2 of KDB 680106 D01v02.

- a) Power transfer frequency is less than 1 MHz.
 - The device operates in the frequency range from 110 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 must be less than 5 watts.
- 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 DUT(Device Under Test) are consist of one charging coil use. So the DUT can detect and allow coupling only between TX and RX Coil.
- 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 : $15.5 \text{ cm(W)} \times 7.4 \text{ cm(D)} = 114.7 \text{ cm}^2$,
 $60 \text{ cm}^2 < 114.7 \text{ cm}^2 < 400 \text{ cm}^2$
- 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
0.448 A/m (Max.) < 0.489 A/m

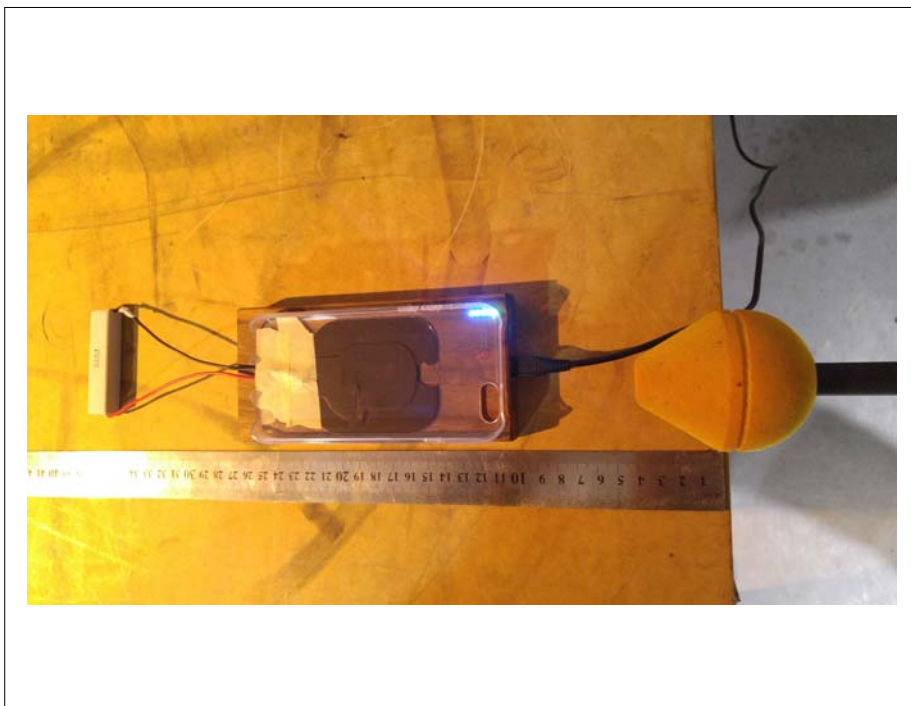
APPENDIX

1. EUT photo

Standby Mode, Position A,B,C and D



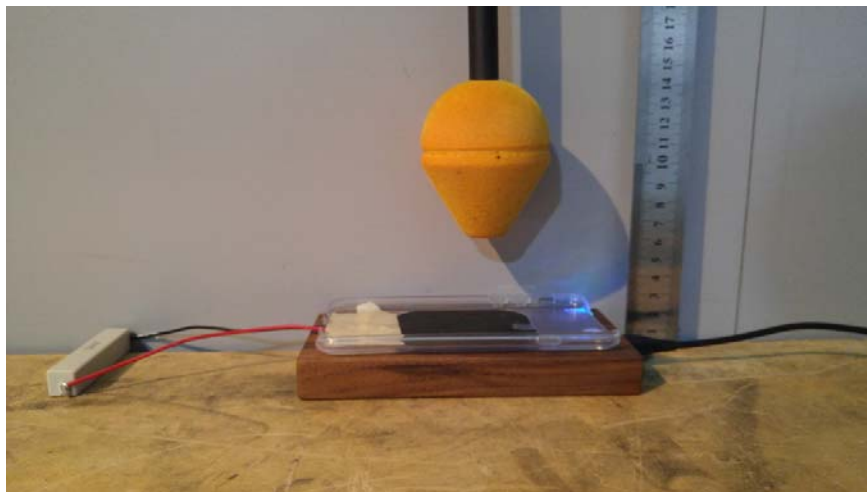
Charging Mode with load, Position A,B,C and D



Standby Mode, position E



Charging Mode with load, position E



--End of Report--