

TEST REPORT

Reference No...... : WTS16S1267535-3E
FCC ID..... : 2AEHND100
Applicant..... : Azpen Shenzhen MingTel Digital Technology CO., LTD.
Address..... : 2nd F, 9th Building, DeTai Industrial Park, Longhua District, Shenzhen, China
Manufacturer..... : Shenzhen Mingtel Digital Technology CO.,Ltd
Address..... : 2nd F, 9th Building, DeTai Industrial Park, Longhua District, Shenzhen, China
Product Name..... : DOCKALL
Model No...... : D100, D200, D300
Brand Name..... :  azpen
Standards..... : FCC CFR47 Part1.1307
Date of Receipt sample..... : Dec. 08, 2016
Date of Test..... : Dec. 09, 2016 – Feb. 05, 2017
Date of Issue..... : Mar. 30, 2017
Test Result..... : **Pass**
Note..... : This report is for Wireless Charging RF Exposure function.

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS16S1267535-3E	Dec. 08, 2016	Dec. 09, 2016 – Feb. 05, 2017	Mar. 02, 2017	original	N/A	Replaced
WTS16S1267535-3E	Dec. 08, 2016	Dec. 09, 2016 – Feb. 05, 2017	Mar. 30, 2017	revision1	Revised Wireless Charging Lowest Frequency	Valid

4 General Information

4.1 General Description of E.U.T.

Product Name:	DOCKALL
Model No.:	D100, D200, D300
Model Description:	Only the model name and appearance are different. The D100 is the test sample.
Operation Frequency:	Bluetooth 2402MHz ~ 2480MHz, 79 channels in total Wireless Charging 116.25~205KHz
Type of Modulation:	Bluetooth GFSK, Pi/4DQPSK, 8DPSK Wireless Charging ASK
The lowest Radio Frequency:	116.25 KHz
Antenna installation:	Bluetooth PCB printed antenna Wireless Charging Coil antenna
Antenna Gain:	Bluetooth 0dBi

4.2 Details of E.U.T.

Technical Data:	Input: 12.0V --- 2.0A Powered by Power Supply Power Supply by ShenZhen Xinspower Technology Co., Ltd (Input: AC 100-240V, 50/60Hz, 0.8A; Model: A241-1202000U) Output current: 3A Max.
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4.3 Test Facility

The test facility has a test site registered with the following organizations:

- IC – Registration No.: 7760A-1**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A-1, October 15, 2015.

- FCC Test Site 1#– Registration No.: 880581**

Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

- FCC Test Site 2#– Registration No.: 328995**

Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

RF EXPOSURE						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Van der Hoofden Test Head	SCHWARZBECK	VDHH9502	9502-103	Apr. 13, 2016	Apr. 12, 2017
2	EMI Test Receiver	R&S	ESCI	101528	Apr. 13, 2016	Apr. 12, 2017

5.2 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

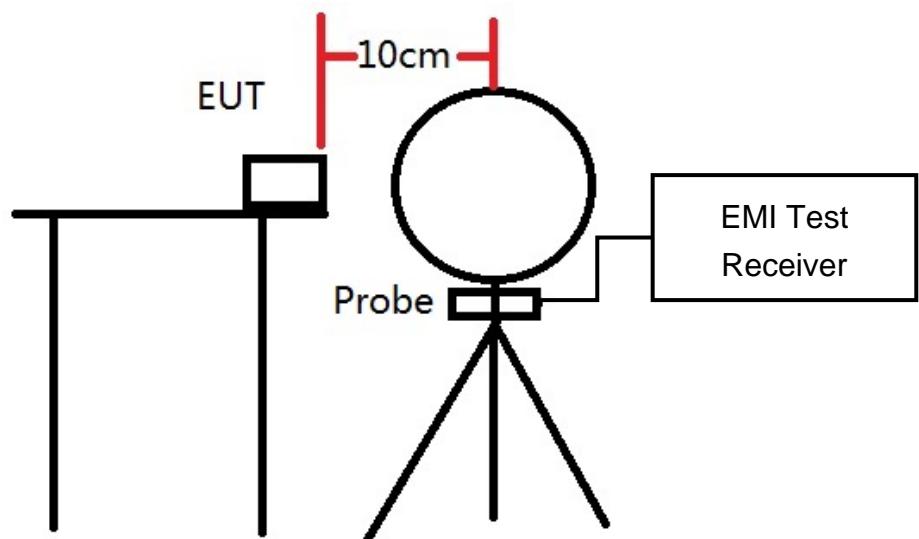
6 RF Exposure

Test Requirement:

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

According KDB680106 D01v02: RF Exposure Wireless Charging Apps v02 and FCC CFR 47 Part 2.1091(d)(4)

6.1 Test Setup



These testing were performed at test configuration as above diagram.

EUT was placed on a table, and the measure probe was placed at a measurement distance of 10cm from the EUT to the center of the probe.

The EUT was put in different directions (Left, Right, Front, Rear, Top and Bottom) to obtain the maximum reading.

6.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

6.3 Test Data

E-Field

Test Side	Separation Distance(cm)	E-Field Measured(V/m)	E-Field Limit(V/m)
Left	10	5.26	614
Right	10	5.37	614
Front	10	5.43	614
Rear	10	5.38	614
Top	10	6.29	614
Bottom	10	6.45	614
Margin Limit (%)		1.05%	

H-Field

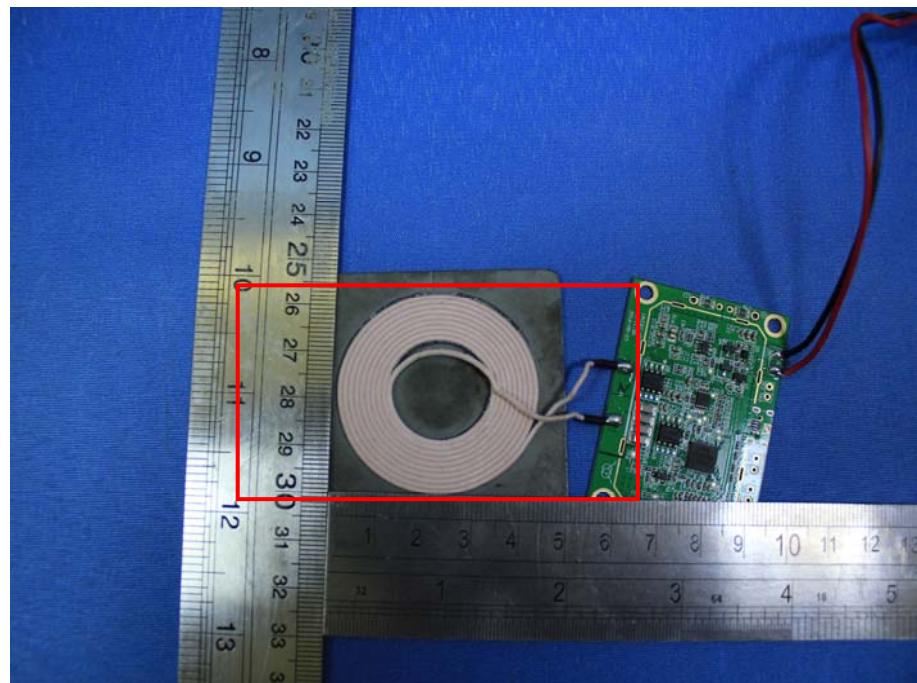
Test Side	Separation Distance(cm)	H-Field Measured(A/m)	H-Field Limit(A/m)
Left	10	0.15	1.63
Right	10	0.12	1.63
Front	10	0.13	1.63
Rear	10	0.17	1.63
Top	10	0.36	1.63
Bottom	10	0.25	1.63
Margin Limit (%)		22.09%	

Remark: The device meets the mobile RF exposure limit at a 10cm separation distance as specified in §2.1091 of the FCC Rules. The maximum leakage fields at 10 cm surrounding the device from transmitting coil is demonstrated to be less than 30% of the MPE limit.

Please refer to above E and H field Strength test results.

6.4 EUT coupling surface area

The inductive area is below (Coupling area: ϕ 43 mm, The located at top of the equipment):



6.5 Equipment Approval Considerations

This device does comply with section 5.2) of KDB 680106 D01 v02

Inductive wireless power transfer applications that meet all of the following requirements:

a) Power transfer frequency is less than 1 MHz

Re: This device power transfer frequency range from 116.25~205 KHz is less than 1MHz.

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

Re: The maximum field strength of fundamental is 73.85dBuV/m @3m; Calculate the EIRP from the radiated field strength in the far field using Equation: $EIRP = E_{Meas} + 20\log(d_{Meas}) - 104.7$ reference to ANSI IEC C63.10: 2013 Section 9.5 Equation (22)

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBuV/m

d_{Meas} is the measurement distance, in m

So the Output power from primary coil is $-21.35\text{dBm} = 0.0073\text{mW}$ 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

Re: The transfer system includes only single primary and secondary coils.

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

Re: Client device is placed directly in contact with the transmitter.

e) The maximum coupling surface area of the transmit (charging) device is between 60 cm² and 400 cm².

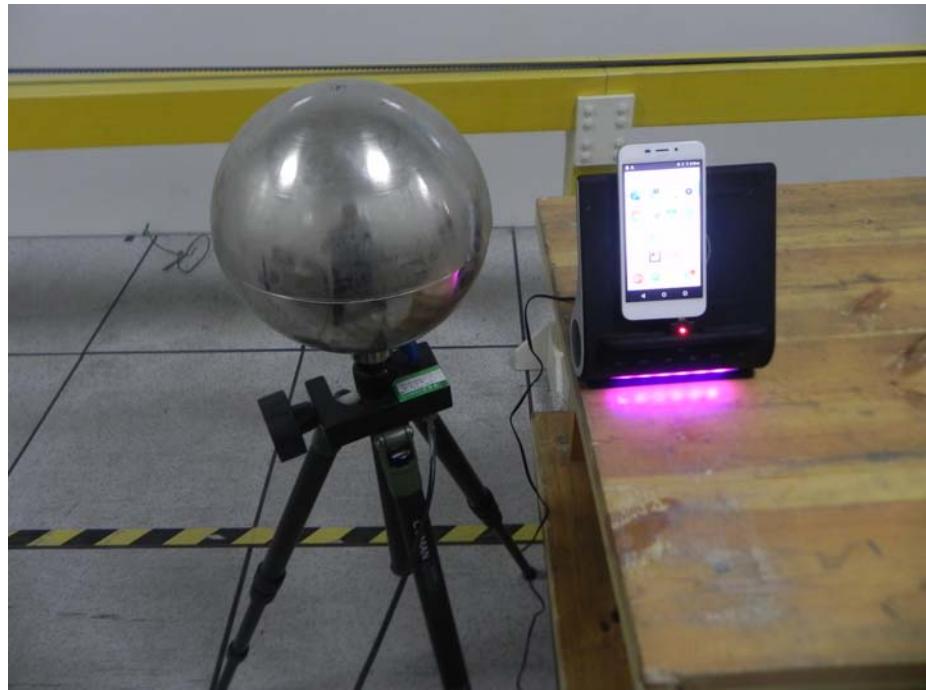
Re: The maximum coupling surface area of the transmit (charging) device is 6.75 cm² <60 cm².

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.

Re: The maximum 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.

7 Photograph –RF Exposure Test Setup

Left Side



Right Side



Front Side



Rear Side



Top Side



Bottom Side



=====End of Report=====