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MPE TEST REPORT

Report No:STS1807101W02

Issued for

Dongguan Aohai Technology Co.,Ltd.

Zhenlong East Road No.6, Jiaoyitang, Tangxia
Town, Dongguan,Guangdong,523723,China

Product Name:	Qi Wireless Charging Pad
Brand Name:	INSIGNIA
Model Name:	NS-MWPC10CU
Series Model:	N/A
FCC ID:	2AP4XNS-MWPC10CU
Test Standard:	FCC CFR 47 part 1, 1.1310

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**TEST RESULT CERTIFICATION**

Applicant's name: Dongguan Aohai Technology Co.,Ltd.
Address.....: Zhenlong East Road No.6, Jiaoyitang, Tangxia
Town, Dongguan,Guangdong,523723,China
Manufacture's Name: Dongguan Aohai Technology Co.,Ltd.
Address.....: Zhenlong East Road No.6, Jiaoyitang, Tangxia
Town, Dongguan,Guangdong,523723,China

Product description

Product Name: Qi Wireless Charging Pad
Brand Name: INSIGNIA
Model Name.....: NS-MWPC10CU
Series Model: N/A

Standards : FCC CFR 47 part 1, 1.1310

Test Procedure : 680106 D01 RF Exposure Wireless Charging Apps v03

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: 12 Jul. 2018 ~ 15 Jul. 2018

Date of Issue : 16 July 2018

Test Result : **Pass**

Testing Engineer :

(Chris chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	16 Jul. 2018	STS1807101W02	ALL	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC KDB 680106 D01 RF Exposure Wireless Charging Apps v03

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

CNAS Registration No.: L7649; FCC Registration No.: 625569

IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded 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	Uncertainty
1	All emissions,radiated(<30M)(9KHz-30MHz)	$\pm 2.45\text{dB}$
2	Temperature	$\pm 0.5^\circ\text{C}$
3	Humidity	$\pm 2\%$



1.3 GENERAL DESCRIPTION OF EUT

Product Name	Qi Wireless Charging Pad
Trade Name	INSIGNIA
Model Name	NS-MWPC10CU
Series Model	N/A
Model Difference	N/A
Channel List	127KHz
Equipemnt Category	Non-ISM frequency
Operating frequency	111KHz-205KHz
Modulation Type	ASK
Power Ratings	Input: DC 5V/2A, DC 9V/2A, DC 12V/1.5A Ouput: 10W max
AC/DC Adapter	Model: A138A-120150U-US2 Input: AC 100-240V~50/60Hz, 0.5A output: DC 5V/2.5A, DC 9V/2A, DC 12V/1.5A (Provided by the applicant)
Hardware version number	N/A
Software version number	N/A

Note:

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

Ant	Brand	Model Name	Antenna Type	Connector	NOTE
1	N/A	NS-MWPC10CU	Coil	N/A	Antenna

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



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	2017.10.23	2018.10.22



2. MAXIMUM PERMISSIBLE EXPOSURE

2.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

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

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	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

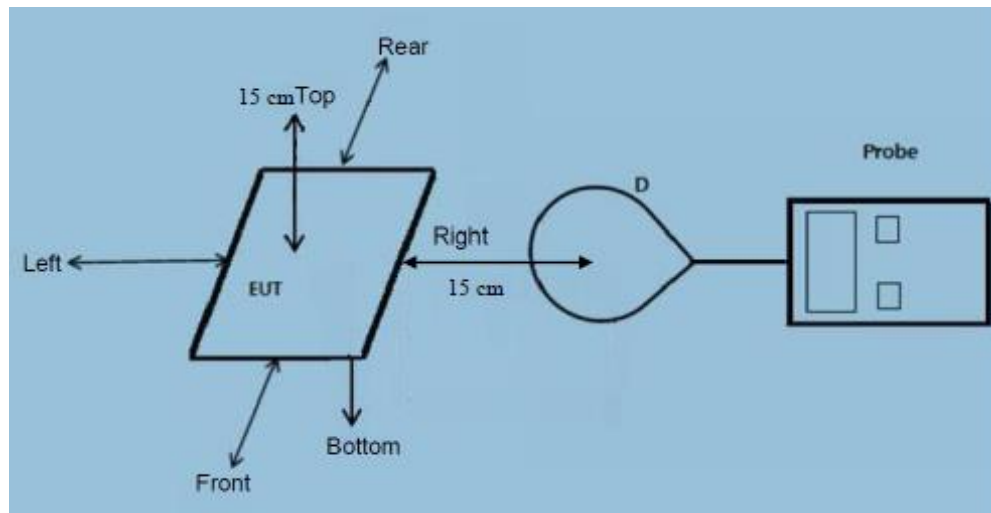
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: 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.

2.2 TEST PROCEDURE

- a. For devices designed for typical desktop applications, such as wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device.

2.3 TEST SETUP



2.4 Test results

The EUT does comply with item 5 KDB680106 D01 v03.

- (1) Power transfer frequency is less than 1 MHz.
(Conform)
- (2) Output power from each primary coil is less than or equal to 15 watts.
(Conform)
- (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.
(Conform)
- (4) Client device is placed directly in contact with the transmitter.
(Conform)
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
(Intended for desk top use)
- (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.
(Not applicable)



2.5 MAXIMUM PERMISSIBLE EXPOSURE

E-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Calculated Value (A/m)	Calculated Value (V/m)	Limits Test (V/m)	Result
< 1% Battery	Front	15	0.112	0.473	614	PASS
< 1% Battery	Rear	15	0.129	0.427		PASS
< 1% Battery	Left	15	0.126	0.450		PASS
< 1% Battery	Right	15	0.117	0.423		PASS
< 1% Battery	Top	15	0.140	0.482		PASS
H-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Measured Value(uT)	Calculated Value (A/m)	Limits Test (A/m)	Result
< 1% Battery	Front	15	0.140	0.112	1.63	PASS
< 1% Battery	Rear	15	0.161	0.129		PASS
< 1% Battery	Left	15	0.158	0.126		PASS
< 1% Battery	Right	15	0.146	0.117		PASS
< 1% Battery	Top	15	0.175	0.140		PASS

Note: The aggregate H-filed strengths at 15cm surrounding the device and 15cm above the top surface.

$A/m = uT/1.25$



E-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Calculated Value (A/m)	Calculated Value (V/m)	Limits Test (V/m)	Result
50% Battery	Front	15	0.114	0.446	614	PASS
50% Battery	Rear	15	0.123	0.426		PASS
50% Battery	Left	15	0.126	0.407		PASS
50% Battery	Right	15	0.130	0.408		PASS
50% Battery	Top	15	0.114	0.439		PASS
H-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Measured Value(uT)	Calculated Value (A/m)	Limits Test (A/m)	Result
50% Battery	Front	15	0.143	0.114	1.63	PASS
50% Battery	Rear	15	0.154	0.123		PASS
50% Battery	Left	15	0.158	0.126		PASS
50% Battery	Right	15	0.163	0.130		PASS
50% Battery	Top	15	0.143	0.114		PASS

Note: The aggregate H-filed strengths at 15cm surrounding the device and 15cm above the top surface.

$A/m = uT/1.25$



E-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Calculated Value (A/m)	Calculated Value (V/m)	Limits Test (V/m)	Result
>99% Battery	Front	15	0.118	0.447	614	PASS
>99% Battery	Rear	15	0.117	0.442		PASS
>99% Battery	Left	15	0.114	0.427		PASS
>99% Battery	Right	15	0.108	0.461		PASS
>99% Battery	Top	15	0.110	0.473		PASS
H-Filed Strength						
Charging	Probe from EUT Side	Test Distance (cm)	Measured Value(uT)	Calculated Value (A/m)	Limits Test (A/m)	Result
>99% Battery	Front	15	0.148	0.118	1.63	PASS
>99% Battery	Rear	15	0.146	0.117		PASS
>99% Battery	Left	15	0.143	0.114		PASS
>99% Battery	Right	15	0.135	0.108		PASS
>99% Battery	Top	15	0.138	0.110		PASS

Note: The aggregate H-filed strengths at 15cm surrounding the device and 15cm above the top surface.

$A/m = uT/1.25$

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