

RF EXPOSURE REPORT

OF

Applicant: GadgeTek Inc.
7F.-5,NO.369,FUXING N.RD.,SONGSHAN DIST.,TAIPEI CITY
10541,TAIWAN

Product Name: Smart Cross

Brand Name: GTI

Model No.: GWD901

Model Difference: N/A

Report Number: T190313W07-MF

FCC ID 2AT5G-GWD901

FCC Rule Part Part 2.1091

Issue Date: Aug. 08, 2019

Date of Test: May 08, 2019 ~ Aug. 01, 2019

Date of EUT Received: May 08, 2019

Issued by Compliance Certification Services Inc.Wugu Lab.
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Note: The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards. The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).

Henry Chiang

Tested By:

Henry Chiang / Engineer

Kevin Tsai

Approved By:

Kevin Tsai / Deputy Manager



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Revision History

Report Number	Revision	Description	Effected Page	Issue Date	Revised By
T190313W07-MF	Rev.00	Initial creation of document	All	Aug. 08, 2019	Elle Chang

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1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Standard Applicable

According to §1.1307(b)(1) and , systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to §1.1310 and §2.1093 RF exposure is calculated.

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

FCC KDB 680106 D01 RF Exposure Wireless Charging App v03

1.2 Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(E) (V/m)	Magnetic Field Strength(H) (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational / Controlled Exposure				
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
1500-15000	/	/	5	6
Frequency Range (MHz)	Electric Field Strength(E) (V/m)	Magnetic Field Strength(H) (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
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
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density

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1.3 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model /Type No.	Series No.	Data Cable	Power Cord
1.	NA	---	---	---	---	---

1.4 The Worst Charging Condition:

Ancillary Equipment	Charging Condition	Verdict
Load	Full Loading	PASS
Load	99% Loading	PASS
Load	90% Loading	PASS
Load	50% Loading	PASS
Load	10% Loading	PASS
Load	1% Loading	PASS
Note: For Wireless Power Consortium Qi specification, a lower operating frequency or high duty cycle result in the transfer of a higher amount of power and charging current.		

1.5 Measurement Procedure:

- For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 10 cm, 15 cm and 20 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 10 cm, 15 cm and 20 cm measured from the center of the probe(s) to the edge of the device. 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.

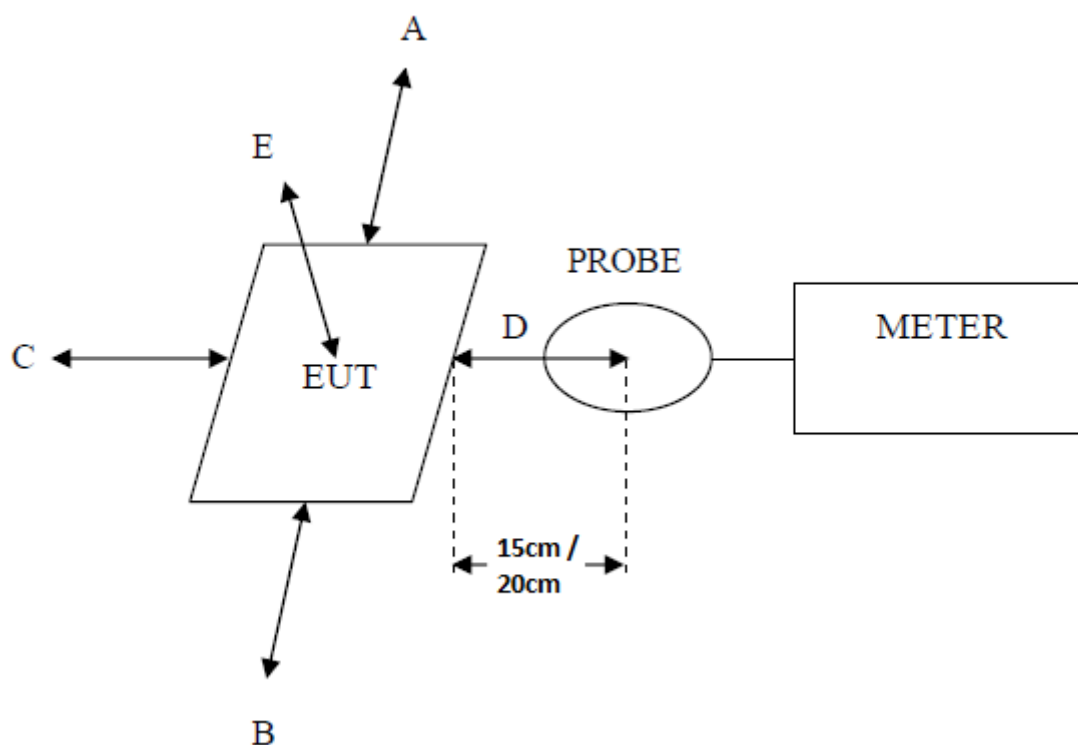
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1.6 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
BROADBAND FIELD METER	NARDA	NBM-520	D-0924	2018/10/26	2019/10/26

1.7 Test Set-up:

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1.8 Maximum Permissible Exposure (MPE) Evaluation:**Ambient temperature: 22.7°C Relative humidity: 66% Test Date: 07/25/2019****Full Loading**

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.33	0.0074
Back	10 cm	0.33	0.0034
Left	10 cm	0.36	0.007
Right	10 cm	0.28	0.01
Top	10 cm	0.11	0.0074
Bottom	10 cm	0.35	0.006
Limit		614	0.815

99% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.27	0.0088
Back	10 cm	0.22	0.004
Left	10 cm	0.26	0.0046
Right	10 cm	0.4	0.0096
Top	10 cm	0.2	0.0058
Bottom	10 cm	0.2	0.0062
Limit		614	0.815

90% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.35	0.0056
Back	10 cm	0.19	0.004
Left	10 cm	0.32	0.0038
Right	10 cm	0.36	0.0074
Top	10 cm	0.19	0.007
Bottom	10 cm	0.31	0.0034
Limit		614	0.815

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50% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.24	0.0054
Back	10 cm	0.27	0.0062
Left	10 cm	0.26	0.0048
Right	10 cm	0.34	0.0082
Top	10 cm	0.21	0.0068
Bottom	10 cm	0.27	0.0066
Limit		614	0.815

10% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.35	0.0076
Back	10 cm	0.37	0.007
Left	10 cm	0.18	0.0064
Right	10 cm	0.34	0.0098
Top	10 cm	0.22	0.0044
Bottom	10 cm	0.23	0.004
Limit		614	0.815

1% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	10 cm	0.35	0.0074
Back	10 cm	0.27	0.0042
Left	10 cm	0.35	0.0056
Right	10 cm	0.39	0.0074
Top	10 cm	0.11	0.0076
Bottom	10 cm	0.34	0.0062
Limit		614	0.815

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Full Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.33	0.003
Back	15 cm	0.26	0.0018
Left	15 cm	0.24	0.0048
Right	15 cm	0.22	0.0088
Top	15 cm	0.07	0.0032
Bottom	15 cm	0.3	0.0012
Limit		614	0.815

99% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.25	0.0066
Back	15 cm	0.2	0.0037
Left	15 cm	0.22	0.0032
Right	15 cm	0.28	0.0066
Top	15 cm	0.17	0.004
Bottom	15 cm	0.14	0.0028
Limit		614	0.815

90% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.15	0.0032
Back	15 cm	0.17	0.0036
Left	15 cm	0.32	0.0016
Right	15 cm	0.29	0.007
Top	15 cm	0.12	0.0052
Bottom	15 cm	0.2	0.0012
Limit		614	0.815

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50% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.18	0.0051
Back	15 cm	0.25	0.0044
Left	15 cm	0.24	0.0036
Right	15 cm	0.34	0.0052
Top	15 cm	0.14	0.0038
Bottom	15 cm	0.26	0.002
Limit		614	0.815

10% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.16	0.0058
Back	15 cm	0.3	0.0028
Left	15 cm	0.14	0.0024
Right	15 cm	0.24	0.0072
Top	15 cm	0.1	0.0042
Bottom	15 cm	0.21	0.0018
Limit		614	0.815

1% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	15 cm	0.19	0.0038
Back	15 cm	0.24	0.0026
Left	15 cm	0.28	0.001
Right	15 cm	0.29	0.006
Top	15 cm	0.09	0.0044
Bottom	15 cm	0.19	0.004
Limit		614	0.815

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Full Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.1	0.0024
Back	20 cm	0.24	0.0017
Left	20 cm	0.09	0.0006
Right	20 cm	0.21	0.0066
Top	20 cm	0.02	0.002
Bottom	20 cm	0.28	0.001
Limit		614	0.815

99% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.14	0.0044
Back	20 cm	0.19	0.001
Left	20 cm	0.13	0.0026
Right	20 cm	0.21	0.0042
Top	20 cm	0.11	0.0038
Bottom	20 cm	0.12	0.001
Limit		614	0.815

90% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.1	0.0021
Back	20 cm	0.12	0.0006
Left	20 cm	0.16	0.0012
Right	20 cm	0.23	0.0062
Top	20 cm	0.05	0.0016
Bottom	20 cm	0.15	0.0008
Limit		614	0.815

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50% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.13	0.0026
Back	20 cm	0.12	0.0024
Left	20 cm	0.16	0.0015
Right	20 cm	0.14	0.0034
Top	20 cm	0.1	0.0034
Bottom	20 cm	0.22	0.001
Limit		614	0.815

10% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.12	0.0048
Back	20 cm	0.13	0.0016
Left	20 cm	0.11	0.001
Right	20 cm	0.19	0.0034
Top	20 cm	0.07	0.0028
Bottom	20 cm	0.11	0.0009
Limit		614	0.815

1% Loading

Maximum Permissible Exposure			
Probe from EUT Side	Test Distance	V/m	A/m
Front	20 cm	0.18	0.0018
Back	20 cm	0.23	0.0024
Left	20 cm	0.21	0.0007
Right	20 cm	0.26	0.0052
Top	20 cm	0.09	0.0026
Bottom	20 cm	0.19	0.0014
Limit		614	0.815

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