Shenzhen Asia Test Technology Co., Ltd.
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FCC RF Test Report

Product Type	:	WiFi/Zigbee Gateway
Report No	:	ATT-2015SZ0229145F-3
Applicant	:	Sensing TeK Co., Ltd.
Address	:	4F-1,No.62,Chen Gung 5 st., ChuBei City, Hsinchu county Taiwan 302
Trade Name	:	N/A
Model Number	:	GWZ2100
List Model	:	N/A
Test Specification	:	FCC Per 47 CFR 2.1091(b)
Receive Date	:	15 Feb,2015
Test Period	:	16 Feb ,2015 to 11 Mar , 2015
Issue Date	:	12 Mar , 2015

Issue by

Shenzhen Asia Test Technology Co.,Ltd.

7 / F, Xinwei Building, Gushu Village, Xixiang Town, Baoan District, Shenzhen, China.

Verification of Compliance

Issued Date: 12/03/2015

Product Type	:	WiFi/Zigbee Gateway
Applicant	:	Sensing TeK Co., Ltd.
Address	:	4F-1,No.62,Chen Gung 5 st., ChuBei City, Hsinchu county Taiwan 302
Manufacturer	:	Sensing TeK Co., Ltd.
Address	:	4F-1,No.62,Chen Gung 5 st., ChuBei City, Hsinchu county Taiwan 302
Trade Name	:	N/A
Model Number	:	GWZ2100
List Mode		N/A
FCC ID	:	WMXGWZ2100
EUT Rated Voltage	:	DC 12.0V From Adapter By AC 120V
Adapter :	:	Model:AU1121206u Input:AC 100-240V 50/60Hz 0.5A Output :DC 12V 1A
Applicable Standard	:	FCC Per 47 CFR 2.1091(b)
Test Result	:	Complied
Performing Lab.	:	Shenzhen Asia Test Technology Co.,Ltd. 7 / F, Xinwei Building, Gushu Village, Xixiang Town, Baoan District, Shenzhen, China

The EUT described above is tested by Shenzhen Asia Test Technology Co.,Ltd. EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Asia Test Technology Co.,Ltd. EMC Laboratory assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with FCC Rules Part 15.207, 15.209 and 15.247.
The test results of this report relate only to the tested sample identified in this report.

Approved By	:	Seal-Chen	Reviewed By	:	
(Testing Engineer)		(Seal Chen)	(Manager)		(Jackie Deng)

1.Method of measurement

1.1 Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.
KDB447498 v05r02: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

1.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(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 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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 – 100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density

1.3 MPE Calculation Method

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$
Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to an isotropic radiator
R=distance to the center of radiation of the antenna

TEST RESULTS

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. as well as the gain of the used antenna is 3.00dBi, the RF power density can be obtained

Wifi

Test Frequency (MHz)	Minimum Separation Distance (cm)	Max Output Power (dBm)	Output Power (mW)	Antenna Gain (Numeric)	Power Density (mW/cm^2)	Power Density Limit FCC (mW/cm^2)	Test Results
2412.00	20.00	18.35	68.3912	1.9953	0.0271	1	PASS
2437.00	20.00	18.73	74.6449	1.9953	0.0296	1	PASS
2462.00	20.00	18. 68	73.7904	1.9953	0.0293	1	PASS

ZigBee

Test Frequency (MHz)	Minimum Separation Distance (cm)	Max Output Power (dBm)	Output Power (mW)	Antenna Gain (Numeric)	Power Density (mW/cm^2)	Power Density Limit FCC (mW/cm^2)	Test Results
2405.00	20.00	-1.345	0.7337	1.9953	0.0003	1	PASS
2400.00	20.00	-0.933	0.8067	1.9953	0.0003	1	PASS
2480.00	20.00	0.064	1.0148	1.9953	0.0004	1	PASS

Simultaneous transmission

According to KDB447498 v05r02, Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is $\leqslant$ 1.0.

Minimum Separation Distance (cm)	MAX Wifi Power Density (mW/cm^2)	MAX Zigbee Power Density (mW/cm^2)	SumPower Density (mW/cm^2)	MPE Limit	Test Results
20.00	0.0296	0.0004	0.03	1	PASS

END