



SPORTON International Inc.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

Project No: CB10604025

Maximum Permissible Exposure Report

Applicant's company	XAVI Technologies Corporation
Applicant Address	22F., No. 69, Sec. 2, Guangfu Rd., Sanchong Dist., New Taipei City 24158, Taiwan
FCC ID	RYU-W224Z0
Manufacturer's company	XAVI Technologies Corporation
Manufacturer Address	22F., No. 69, Sec. 2, Guangfu Rd., Sanchong Dist., New Taipei City 24158, Taiwan

Product Name	Wireless module
Brand Name	XAVi
Model Name	W224Z0YYYY(Y=0~9, a~z, A~Z, blank, "-" or "+", for marketing purpose.)
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
Received Date	Nov. 05, 2015
Final Test Date	Dec. 31, 2015
Submission Type	Original Equipment



Cliff Chang

SPORTON INTERNATIONAL INC.



Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA5N0423-02	Rev. 01	Initial issue of report	May 03, 2017
FA5N0423-02	Rev. 02	1. Updating the CLOSE-UP of photos 2. Updating the external of photos	May 05, 2017

1. GENERAL DESCRIPTION

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2. Table for Multiple Listing

The difference for each model is shown as below:

Model Name	Description
W224Z0YYYYY	(Y=0~9, a~z, A~Z, blank, "-" or "+", for marketing purpose.)

Note: W224Z0 was selected as representative model for the test and its data was recorded in this report.

1.3. Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit of Maximum Permissible Exposure

(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

2.2. MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

2.3. Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Antenna Type : Printed Antenna

Conducted Power for IEEE 802.11g: 25.17 dBm

Distance (cm)	Test Freq. (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	The maximum combined Average Output Power		Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
				(dBm)	(mW)			
20	2437	4.32	2.7040	25.1679	328.6914	0.176904	1	Complies