Radio Exposure Evaluation Report

FCC ID	:	**SSA-JW2212**
Equipment	:	**Industrial Dual 802.1 n 2.4G/5G 2T2R MIMO Wireless AP**
Brand Name	:	**Korenix**
Model Name	:	**JetWave 2212-EU, JetWave 2212S-EU, JetWave 2212X-EU**
Applicant	:	**Korenix Technology Co., Ltd.** **14F, No.213, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 23143, Taiwan (R.O.C.)**
Manufacturer	:	**Korenix Technology Co., Ltd.** **14F, No.213, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 23143, Taiwan (R.O.C.)**
Standard	:	**47 CFR Part 2.1091**

The product was received on May 22, 2018, and testing was started from Aug. 28, 2018 and completed on Sep. 07, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of United States government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

HISTORY OF THIS TEST REPORT 3
1 GENERAL DESCRIPTION 4
1.1 EUT General Information 4
1.2 Table for Multiple Listing 4
1.3 Testing Location 4
2 MAXIMUM PERMISSIBLE EXPOSURE 5
2.1 Limit of Maximum Permissible Exposure 5
2.2 MPE Calculation Method 5
2.3 Calculated Result and Limit 6
Photographs of EUT V01

History of this test report

Report No.	Version	Description	Issued Date
FA852105	01	Initial issue of report	Oct. 09, 2018

Reviewed by: Sam Tsai

Report Producer: Ann Hou

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)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
Korenix	JetWave 2212-EU	Full I/O, Full function
	JetWave 2212S-EU	Remove 2 Switches
	JetWave 2212X-EU	Remove 2 Switches and serial port

Note : JetWave 2212S-EU configuration was pretested and found to be the worst case and measured during the test.

1.3 Testing Location

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

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/ cm²)	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^2)*	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/ cm²)	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^2)*	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 (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = 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

WLAN 2.4G

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm2)	S Limit (mW/cm2)
2.4G;G1D	2.00	25.06	27.06	0.50	27.56	0.57016	20	0.11343	1.00000
2.4G;D1D	2.00	24.80	26.80	0.50	27.30	0.53703	20	0.10684	1.00000

WLAN 5G

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm2)	S Limit (mW/cm2)
5.2G;D1D	3.00	23.08	26.08	0.50	26.58	0.45499	20	0.09052	1.00000
5.8G;D1D	3.00	24.46	27.46	0.50	27.96	0.62517	20	0.12437	1.00000

Co-TX WLAN 2.4G+ WLAN 5G

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm2)	S Limit (mW/cm2)	Ratio (S/Limit)
2.4G;G1D	2.00	25.06	27.06	0.50	27.56	0.57016	20	0.11343	1.00000	0.11343
5.8G;D1D	3.00	24.46	27.46	0.50	27.96	0.62517	20	0.12437	1.00000	0.12437
-	-	-	-	-	-	-	-	-	Sum Ratio	0.2378
-	-	-	-	-	-	-	-	-	Ratio Limit	1

———THE END———