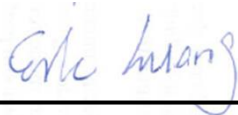


RF Exposure Evaluation Report

APPLICANT : JORJIN TECHNOLOGIES INC.
EQUIPMENT : Wireless module
BRAND NAME : Jorjin
MODEL NAME : WG7831DELFB
MARKETING NAME : WG7831-D0
FCC ID : WS2-WG7831DELFB
STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Deputy Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA520334	Rev. 01	Initial issue of report	Mar. 18, 2015

1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	JORJIN TECHNOLOGIES INC.
Address	17F, No.239, Sec.1, Datong Rd., Xizhi Dist., New Taipei City 22161, Taiwan

Manufacturer	
Company Name	Inventec Appliances (Pudong) Corporation
Address	No. 789, Pu Xing Road, Shanghai, China P.R.C., 201114.

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Wireless module
Brand Name	Jorjin
Model Name	WG7831DELF
Marketing Name	WG7831-D0
FCC ID	WS2-WG7831DELF
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	• 802.11b/g/n HT20/HT40 • Bluetooth v2.1+EDR · Bluetooth v4.0-LE
Antenna Type	WLAN: Chip Antenna Bluetooth: Chip Antenna
EUT Stage	Production Unit

3. Maximum RF average output power among production units

Band / Mode	Average Power (dBm)	
	v2.1+EDR	v4.0+LE
Bluetooth	12.0	8.0

Band / Frequency (MHz)	IEEE 802.11 Average Power (dBm)			
	11b	11g	HT20	HT40
2.4GHz Band	2412	13.0	15.5	15.5
	2422			11.5
	2437	13.0	15.5	15.5
	2452			11.5
	2462	13.0	13.0	13.0



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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				
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

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:

$$S = \frac{PG}{4\pi R^2}$$

Where:

- S = Power Density
- P = Output Power at Antenna Terminals
- G = Gain of Transmit Antenna (linear gain)
- R = Distance from Transmitting Antenna

5. Radio Frequency Radiation Exposure Evaluation

5.1. Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
2.4GHz WLAN	2412.0	-2.46	15.50	13.040	0.020	20.137	0.004	1.000
Bluetooth	2402.0	-2.46	12.00	9.540	0.009	8.995	0.002	1.000

Note:

1. For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.
2. The WLAN and Bluetooth cannot transmit simultaneous on this device.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.