



# RF Exposure Evaluation Report

APPLICANT : Clarinox Technologies

EQUIPMENT : Koala Connect

BRAND NAME : Koala Connect

MODEL NAME : KM-153103

FCC ID : 2AN5P1531

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 / Manager

Approved by: Jones Tsai / Manager



**SPORTON INTERNATIONAL INC.**  
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## Revision History



## 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	Clarinox Technologies
Address	28/296 Bay Rd, Cheltenham, VIC 3192, Australia

Manufacturer	
Company Name	Jorjin Technologies. Inc.
Address	17F., No.239, Sec. 1, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)



## 2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
<b>EUT Type</b>	Koala Connect
<b>Brand Name</b>	Koala Connect
<b>Model Name</b>	KM-153103
<b>FCC ID</b>	2AN5P1531
<b>Wireless Technology and Frequency Range</b>	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
<b>Mode</b>	802.11a/b/g/n HT20/HT40 Bluetooth BR/EDR/LE
<b>EUT Stage</b>	Identical Prototype

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 3. Maximum RF average output power among production units

Mode	Average Power (dBm)		
	GFSK	8DPSK	LE
Bluetooth	12	7	6

Band / Frequency (MHz)		IEEE 802.11 Average Power (dBm)			
		11b	11g	HT20	HT40
2.4GHz Band	2412	16.5	12	12	
	2422				10
	2437	16.5	16.5	16.5	13
	2452				10
	2462	16.5	12	12	



#### 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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. Standalone 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	-1.40	16.50	15.100	0.032	32.359	0.006	1.000
Bluetooth	2402.0	-1.40	12.00	10.600	0.011	11.482	0.002	1.000

**Note:** For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

### **Conclusion:**

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