

## RF Exposure Report

**Report No.:** SA180430E08

**FCC ID:** SUZ-WB01

**Test Model:** WB01

**Received Date:** Apr. 30, 2018

**Test Date:** May 21, 2018

**Issued Date:** June 21, 2018

**Applicant:** Coretronic Corp.

**Address:** No. 11, Li Hsing Rd, Science-Based Industrial Park, Hsinchu, Taiwan.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
Designation Number:** 723255 / TW2022

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## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits For Maximum Permissible Exposure (MPE) .....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
2.4 Antenna Gain .....	6
2.5 Calculation Result .....	7

### Release Control Record

Issue No.	Description	Date Issued
SA180430E08	Original release.	June 21, 2018

## 1 Certificate of Conformity

**Product:** WiFi 11a/b/g/n/ac 2T2R and BT4.0 Module

**Brand:** Coretronic

**Test Model:** WB01

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Coretronic Corp.

**Test Date:** May 21, 2018

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Wendy Wu , **Date:** June 21, 2018  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** June 21, 2018  
May Chen / Manager

## 2 RF Exposure

### 2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
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 <sup>2</sup> )*	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

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20m away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

<b>For WLAN</b>					
Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connecter Type	Cable Length
1	3.61	2.4~2.4835	FPCB	i-pex(MHF)	230mm
	5.55	5.15~5.85			
2	6.47	2.4~2.4835	FPCB	i-pex(MHF)	230mm
	3.94	5.15~5.85			
<b>For Bluetooth</b>					
Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connecter Type	Cable Length
1	5.44	2.4~2.4835	FPCB	i-pex(MHF)	170mm

## 2.5 Calculation Result

### WLAN:

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	371.435	8.17	20	0.48486	1
5180-5240	131.287	7.79	20	0.15702	1
5745-5825	233.814	7.79	20	0.27964	1

Note:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.17\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.79$

### BT-EDR:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	6.714	5.44	20	0.00467	1

### BT-LE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	1.365	5.44	20	0.00095	1

### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + Bluetooth =  $0.48486 / 1 + 0.00467 / 1 = 0.48953$

WLAN 5GHz + Bluetooth =  $0.27964 / 1 + 0.00467 / 1 = 0.28431$

**Therefore the maximum calculations of above situations are less than the "1" limit.**

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