

## RF Exposure Report

**Report No.:** SA171201E01A

**FCC ID:** HED-C4WW2MAC1200

**Test Model:** C4W-W2M-AC1200

**Series Model:** C4W-W2M-AC1200-XX

**Received Date:** Dec. 01, 2017

**Test Date:** Dec. 04 to 06, 2017

**Issued Date:** Dec. 12, 2017

**Applicant:** Accton Technology Corporation

**Address:** No.1, Creation Rd. III, Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.

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

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### Release Control Record

Issue No.	Description	Date Issued
SA171201E01A	Original release.	Dec. 12, 2017

## 1 Certificate of Conformity

**Product:** Volare Sensor 2

**Brand:** CLOUD4WI

**Test Model:** C4W-W2M-AC1200

**Series Model:** C4W-W2M-AC1200-XX

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Accton Technology Corporation

**Test Date:** Dec. 04 to 06, 2017

**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 :**

*Mary Ko*

**Date:**

Dec. 12, 2017

Mary Ko / Specialist

**Approved by :**

*May Chen*

**Date:**

Dec. 12, 2017

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 20cm away from the body of the user.

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

### 2.4 Antenna Gain

Antenna No.	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type
WiFi Ant 1	3.9	2.4-2.4835	PCB	i-pex(MHF)
	3.9	5.15-5.85		
WiFi Ant 2	4.1	2.4-2.4835	PCB	i-pex(MHF)
	3.8	5.15-5.85		
BT	2.4	2.4-2.4835	PCB	i-pex(MHF)

## 2.5 Calculation Result

### For 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	966.427	7.01	20	0.96582	1
5180-5240	157.782	6.86	20	0.15233	1
5745-5825	111.126	6.86	20	0.10729	1

#### NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.01\text{dBi}$

5.GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.86\text{dBi}$

### For 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	20.559	2.4	20	0.00711	1

### For 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	3.656	2.4	20	0.00126	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 =  $0.96582 / 1 + 0.00711 / 1 = 0.97293$

WLAN 5GHz + Bluetooth =  $0.15233 / 1 + 0.00711 / 1 = 0.15944$

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

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