



# RF EXPOSURE REPORT

**REPORT NO.:** SA140414C09

**MODEL NO.:** DDW36C

**FCC ID:** XCNDWW36C

**RECEIVED:** Apr. 14, 2014

**ISSUED:** Aug. 01, 2014

**APPLICANT:** Ubee Interactive Corp.

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**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140414C09	Original release.	Aug. 01, 2014

## 1. CERTIFICATION

**PRODUCT:** Wireless Cable Modem  
**MODEL:** DDW36C  
**BRAND:** Ubee Interactive  
**APPLICANT:** Ubee Interactive Corp.  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**STANDARDS:** **FCC Part 2 (Section 2.1091)**  
**FCC OET Bulletin 65, Supplement C (01-01)**  
**IEEE C95.1**

The above equipment (Model: DDW36C) 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 :**  , **DATE :** Aug. 01, 2014  
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**APPROVED BY :**  , **DATE :** Aug. 01, 2014  
Ken Liu / Senior 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)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 38cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### For Non-Beamforming Mode:

FREQUENCY BAND (MHz)	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412-2462	29.72	10.01	38	0.518	1
5180-5240	25.02	9.37	38	0.151	1
5745-5825	29.64	9.48	38	0.450	1

#### NOTE:

2.4GHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 10.01 \text{ dBi}$

5180-5240MHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 9.37 \text{ dBi}$

5745-5825MHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 9.48 \text{ dBi}$

#### CONCLUSION:

Both of the 2.4 and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

1.  $WLAN 2.4G + WLAN 5.0G = 0.518 + 0.450 = 0.968$

Therefore, the maximum calculation of this situation is 0.968, which is less than the "1" limit.

**For Beamforming Mode:**

FREQUENCY BAND (MHz)	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412-2462	27.74	10.01	38	0.328	1
5180-5240	25.62	9.37	38	0.174	1
5745-5825	26.51	9.48	38	0.219	1

**NOTE:**

2.4GHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 10.01 \text{dBi}$

5180-5240MHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 9.37 \text{dBi}$

5745-5825MHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 9.48 \text{dBi}$

**CONCLUSION:**

Both of the 2.4 and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$$2. \text{ WLAN } 2.4\text{G} + \text{ WLAN } 5.0\text{G} = 0.328 + 0.219 = 0.547$$

Therefore, the maximum calculation of this situation is 0.547, which is less than the "1" limit.