



# RF EXPOSURE REPORT

**REPORT NO.:** SA120302C25D R1

**MODEL NO.:** RNWD-N9003PCE

**FCC ID:** W6RRNWD-N9003PCE

**RECEIVED:** Mar. 20, 2012

**TESTED:** Mar. 20, 2012

**ISSUED:** Oct. 19, 2012

**APPLICANT:** Rosewill Inc.

**ADDRESS:** 17708 Rowland Street, City of Industry,  
CA91748, USA

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

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R.O.C.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120302C25D	Original release	Oct. 16, 2012
SA120302C25D R1	Modified the FCC ID.	Oct. 19, 2012

## 1. CERTIFICATION

**PRODUCT:** Dual Band Wireless PCIE Adapter  
**BRAND NAME:** Rosewill  
**MODEL NO.:** RNWD-N9003PCE  
**TEST SAMPLE:** PROTOTYPE  
**APPLICANT:** Rosewill Inc.  
**TESTED:** Mar. 20, 2012  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
FCC OET Bulletin 65, Supplement C (01-01)  
IEEE C95.1

The above equipment (Model: RNWD-N9003PCE) 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 :** Phoenix Huang , **DATE:** Oct. 19, 2012  
( Phoenix Huang, Specialist )

**APPROVED BY :** May Chen , **DATE:** Oct. 19, 2012  
( May Chen, Deputy Manager )

## 2. RF EXPOSURE LIMIT

### 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 3. 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

### 4. 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**.

### 5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Transmitter Circuit	Antenna Type	Peak Gain (dBi)	Connector Type
Chain (0)	Omni	2	SMA Reverse
Chain (1)	Omni	2	SMA Reverse
Chain (2)	Omni	2	SMA Reverse

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247(2.4GHz):

### 802.11b:

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	231.149	6.77	20	0.219	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)  
Effective Legacy Gain (dBi)=6.77

### 802.11g:

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	688.102	6.77	20	0.651	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)  
Effective Legacy Gain (dBi)=6.77

### 802.11n (HT20):

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	527.839	2.00	20	0.166	1.00

### 802.11n (HT40):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2422-2452	219.005	2.00	20	0.069	1.00

**For 15.247(5GHz):**

**802.11a:**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 ~ 5825	155.431	6.77	20	0.147	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)  
Effective Legacy Gain (dBi)=6.77

**802.11n (HT20):**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 ~ 5825	156.926	2.00	20	0.049	1.00

**802.11n (HT40):**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 ~ 5795	169.013	2.00	20	0.053	1.00

**For 15.407(5GHz):**  
**802.11a:**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 ~ 5320	13.87	6.77	20	0.013	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)  
Effective Legacy Gain (dBi)=6.77

**802.11n (HT20):**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 ~ 5320	13.241	2.00	20	0.004	1.00

**802.11n (HT40):**

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 ~ 5310	15.303	2.00	20	0.005	1.00

**--- END ---**