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# RF EXPOSURE REPORT

**REPORT NO.:** SA120720C10  
**MODEL NO.:** PCE3300AN  
**FCC ID:** U2M-PCE3300AN  
**RECEIVED:** Jul. 16, 2012  
**TESTED:** Aug. 20 ~ Sep. 11, 2012  
**ISSUED:** Sep. 16, 2012

**APPLICANT:** Senao Networks, Inc.

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

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120720C10	Original release	Sep. 16, 2012



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## 1. CERTIFICATION

**PRODUCT:** 802.11a/b/g/n PCIe module  
**MODEL NO.:** PCE3300AN  
**BRAND:** Senao  
**APPLICANT:** Senao Networks, Inc.  
**TESTED:** Aug. 20 ~ Sep. 11, 2012  
**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: PCE3300AN) 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.

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Ivy Lin / Specialist

APPROVED BY : Ken Liu , DATE : Sep. 16, 2012  
Ken Liu / 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE CALCULATION FORMULA

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

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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412-2462	802.11b	23.83	9.8	20	0.459	1
	802.11g	21.27	9.8	20	0.255	1
	802.11n (20MHz)	21.15	9.8	20	0.248	1
	802.11n (40MHz)	16.49	9.8	20	0.085	1
5180-5240	802.11a (1TX)	14.21	6	20	0.021	1
	802.11a (3TX)	9.21	10.8	20	0.020	1
	802.11n (20MHz)	9.44	10.8	20	0.021	1
	802.11n (40MHz)	12.14	10.8	20	0.039	1
5745-5825	802.11a (1TX)	18.36	6	20	0.054	1
	802.11a (3TX)	21.57	10.8	20	0.343	1
	802.11n (20MHz)	21.39	10.8	20	0.329	1
	802.11n (40MHz)	20.93	10.8	20	0.296	1

### NOTE:

**For 2.4GHz Band:** Directional gain = 5dBi + 10log(3) = 9.8dBi

**For 5.0GHz Band:** Directional gain = 6dBi + 10log(3) = 10.8dBi

### CONCLUSION:

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.459 + 0.343 = 0.802

Therefore, the maximum calculation of this situation is 0.802, which is less than the "1" limit.