



# RF EXPOSURE REPORT

**REPORT NO.:** SA120312C40

**MODEL NO.:** WLAN AP 8120-O

(Refer to item 2.1 for the more details)

**FCC ID:** U2M-AP8120-O

**RECEIVED:** Jan. 31, 2012

**TESTED:** Jan. 31 ~ Mar. 13, 2012

**ISSUED:** Mar. 15, 2012

**APPLICANT:** Senao Networks, Inc.

**ADDRESS:** 3F, No. 529, Chung Cheng Rd., Hsintien, Taipei,  
Taiwan, R.O.C.

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

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New  
Taipei City, Taiwan ( R.O.C )

**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
SA120312C40	Original release	Mar. 15, 2012



## 1. CERTIFICATION

**PRODUCT:** Wireless Access Point  
**MODEL:** WLAN AP 8120-O (Refer to item 2.1 for the more details)  
**BRAND:** AVAYA (Refer to item 2.1 for the more details)  
**APPLICANT:** Senao Networks, Inc.  
**TESTED:** Jan. 31 ~ Mar. 13, 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 have been evaluated 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 : Mar. 15, 2012  
Pettie Chen / Specialist

APPROVED BY :  , DATE : Mar. 15, 2012  
Gary Chang / Technical 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 25cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

MODULATION MODE	FREQUENCY BAND (MHz)	MAX CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
802.11b	2412-2462	22.50	8	25	0.143	1
802.11g	2412-2462	27.64	8	25	0.467	1
802.11n (20MHz)	2412-2462	29.74	5	25	0.379	1
802.11n (40MHz)	2422-2452	26.73	5	25	0.190	1
802.11a	5180-5240	10.36	10	25	0.0138	1
802.11n (20MHz)	5180-5240	13.79	7	25	0.0153	1
802.11n (40MHz)	5180-5240	15.46	7	25	0.0224	1
802.11a	5745-5825	25.67	10	25	0.470	1
802.11n (20MHz)	5745-5825	26.64	7	25	0.294	1
802.11n (40MHz)	5745-5825	27.24	7	25	0.338	1

**NOTE:**

802.11b/g: Directional gain = 5dBi + 10log(2) = 8dBi

802.11a: Directional gain = 7dBi + 10log(2) = 10dBi

**CONCLUSION:**

Both of the WLAN 2.4G & 5.0G 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

WLAN 2.4G + WLAN 5.0G = 0.467 + 0.470 = 0.937

**Therefore, the maximum calculation of this situation is 0.937, which is less than the "1" limit.**