RF EXPOSURE REPORT

REPORT NO.:	SA110721C33
MODEL NO.:	FAP-221B, CAP2100AG, CAP4200AG
FCC ID:	U2M-CAP4100AG
RECEIVED:	Jul. 21, 2011
TESTED:	Oct. 27 ~ Dec. 30, 2011
ISSUED:	Jan. 06, 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.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	NA	Jan. 06, 2012

1. CERTIFICATION

PRODUCT:	FORTIAP-221B
MODEL:	FAP-221B, CAP2100AG, CAP4200AG
BRAND:	Fortinet, Senao
APPLICANT:	Senao Networks, Inc.
TESTED:	Oct. 27 ~ Nov. 29, 2011
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: FAP-221B) 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 : Andrea Hsia / Specialist , DATE : Jan. 06, 2012

APPROVED BY : Gary Chang / Technical Manager , DATE : Jan. 06, 2012

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^2)	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

Pd = (Pout*G) / (4*pi*r2)

where

Pd = power density in mW/cm2

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 21cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FOR RF IC: AR9382

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2412-2462	802.11b	19.6	6	21	0.066	1
	802.11g	28.3	6	21	0.486	1
	802.11n (20MHz)	28.2	3	21	0.238	1
	802.11n (40MHz)	27.6	3	21	0.207	1

FOR RF IC: AR9344

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2412-2462	802.11b	24.2	6	21	0.189	1
	802.11g	29.6	6	21	0.655	1
	802.11n (20MHz)	29.6	3	21	0.328	1
	802.11n (40MHz)	28.6	3	21	0.261	1
5180-5240	802.11a	13.4	7	21	0.020	1
	802.11n (20MHz)	13.6	4	21	0.010	1
	802.11n (40MHz)	15.4	4	21	0.016	1
5745-5825	802.11a	27.0	7	21	0.453	1
	802.11n (20MHz)	26.8	4	21	0.217	1
	802.11n (40MHz)	26.8	4	21	0.217	1

NOTE:
802.11b & 802.11g: Directional gain =3dBi + 10log(2)=6dBi
802.11a: Directional gain =4dBi + 10log(2)=7dBi

CONCULSION:

Only 2.4 and 5GHz can transmit simultaneously, 2.4 and 2.4GHz does not. 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 = 0.486 + 0.453 = 0.939

Therefore, the maximum calculation of this situation is 0.939, which is less than the “1” limit.