

RF EXPOSURE REPORT

REPORT NO.: SA131230C23
MODEL NO.: EAP900H, EWS320AP
FCC ID: A8J-EAP900H
RECEIVED: Nov. 26, 2013
TESTED: Nov. 27, 2013 ~ Jan. 16, 2014
ISSUED: Jan. 24, 2014

APPLICANT: EnGenius Technologies

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA131230C23	Original release	Jan. 24, 2014

1. CERTIFICATION

PRODUCT: Dual Band N900 Access Point
MODEL NO.: EAP900H, EWS320AP
BRAND: EnGenius
APPLICANT: EnGenius Technologies
TESTED: Nov. 27, 2013 ~ Jan. 16, 2014
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: EAP900H) 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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Celine Chou / Specialist

APPROVED BY : Ken Liu , **DATE :** Jan. 24, 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 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 33cm 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 ²)	LIMIT (mW/cm ²)
2412-2462	802.11b	28.33	8.77	33	0.375	1
	802.11g	26.80	8.77	33	0.263	1
	802.11n (20MHz)	28.02	4	33	0.116	1
	802.11n (40MHz)	23.57	4	33	0.042	1
5180-5240	802.11a	13.81	9.27	33	0.015	1
	802.11n (20MHz)	16.94	5	33	0.011	1
	802.11n (40MHz)	16.87	5	33	0.011	1
5745-5825	802.11a	29.93	9.27	33	0.608	1
	802.11n (20MHz)	29.96	5	33	0.229	1
	802.11n (40MHz)	29.97	5	33	0.229	1

NOTE:

2.4GHz

1. 802.11b/g: Directional gain = 4dBi + 10log(3) = 8.77dBi
2. 802.11n: Directional gain = 4dBi + 10log(3/3) = 4dBi

5GHz

1. 802.11a: Directional gain = 5dBi + 10log(3) = 9.27dBi
2. 802.11n (20MHz): 5dBi + 10log(3/3) = 5dBi

CONCLUSION:

Both of the WLAN 2.4G & WLAN 5G 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

$$\text{WLAN 2.4G} + \text{WLAN 5.0G} = 0.375 + 0.608 = 0.983$$

Therefore, the maximum calculation of this situation is 0.983, which is less than the "1" limit.