

RF Exposure Report

Report No.: SA150316C01

FCC ID: A8J-ECB1200

Test Model: ECB1200

Received Date: Mar. 16, 2015

Test Date: Mar. 18 ~ Apr. 21, 2015

Issued Date: May 07, 2015

Applicant: EnGenius Technologies

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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.	Description	Date Issued
SA150316C01	Original release.	May 07, 2015



1 Certificate of Conformity

Product: 2.4GHz b/g/n, 5GHz ac/a/n Indoor AP

Brand: EnGenius

Test Model: ECB1200

Sample Status: Engineering sample

Applicant: EnGenius Technologies


Test Date: Mar. 18 ~ Apr. 21, 2015

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

The above equipment 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 :  , **Date:** May 07, 2015
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Approved by :  , **Date:** May 07, 2015
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

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

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 26cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	28.94	8.13	26	0.600	1
5180-5240	26.89	7.61	26	0.332	1
5745-5825	26.08	8.32	26	0.324	1

NOTE:

2.4GHz: Directional gain = $5.12\text{dBi} + 10\log(2) = 8.13\text{dBi}$

5.0GHz: **For U-NII-1 Band:** Directional gain = $4.6\text{dBi} + 10\log(2) = 7.61\text{dBi}$

For U-NII-3 Band: Directional gain = $5.31\text{dBi} + 10\log(2) = 8.32\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots\text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN } 2.4\text{GHz} + \text{WLAN } 5\text{GHz} = 0.600 + 0.332 = 0.931$

Therefore the maximum calculations of above situations are less than the "1" limit.

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