RF Exposure Report

Report No.:	SA150921C13
FCC ID:	A8J-EMR3000
Test Model:	EMR3000
Received Date:	Sep. 10, 2015
Test Date:	Oct. 08, ~ Oct. 17, 2015
Issued Date:	Oct. 21, 2015
Applicant:	EnGenius Technologies
Address:	1580 Scenic Avenue, Costa Mesa, CA92626
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
SA150921C13	Original release.	Oct. 21, 2015

1 Certificate of Conformity

Product:	Mesh Router
Brand:	EnGenius
Test Model:	EMR3000
Sample Status:	Engineering sample
Applicant:	EnGenius Technologies
Test Date:	Oct. 08, ~ Oct. 17, 2015
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 (October 23, 2015) 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 : Celine Chou , **Date:** Oct. 21, 2015

Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Oct. 21, 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/cm^2

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 23cm 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	27.36	7.01	23	0.411	1
5180-5240	27.65	8.01	23	0.554	1
5745-5825	24.87	8.01	23	0.292	1

Note:
2.4GHz: Directional gain = 4dBi + 10log(2) = 7.01dBi
5GHz: Directional gain = 5dBi + 10log(2) = 8.01dBi

Conclusion:
The formula of calculated the MPE is:
CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.411 + 0.554 = 0.965
Therefore all the maximum calculations of above situations are less than the “1” limit.

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