

RF Exposure Report

Report No.: SA181025C10

FCC ID: A8J-EMR5000

Test Model: EMR5000

Received Date: Mar. 21, 2018

Test Date: Oct. 16 ~ Nov. 13, 2018

Issued Date: Nov. 16, 2018

Applicant: EnGenius Technologies

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA181025C10	Original release.	Nov. 16, 2018

1 Certificate of Conformity

Product: AC2200 Tri-Band Mesh Router

Brand: EnGenius

Test Model: EMR5000

Sample Status: Engineering sample

Applicant: EnGenius Technologies

Test Date: Oct. 16 ~ Nov. 13, 2018

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

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 RF characteristics under the conditions specified in this report.

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Approved by : Bruce Chen , **Date:** Nov. 16, 2018
Bruce Chen / Project Engineer

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 20cm away from the body of the user. So, this device is classified as Mobile Device.

3 Calculation Result of Maximum Conducted Power

Radio	Frequency Band (MHz)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
1	WLAN 2412~2462	CDD	22.84	7.04	20	0.194	1
		Beamforming	19.43	7.04	20	0.088	1
2	WLAN 5745~5825	CDD	21.37	8.65	20	0.200	1
		Beamforming	18.36	8.65	20	0.100	1
3	WLAN 5180~5240	CDD	22.15	8.17	20	0.214	1
		Beamforming	19.14	8.17	20	0.051	1

Note:

2412~2462MHz Max. Directional Gain = 4.03dBi + 10log(2) = 7.04dBi

5180~5240MHz Max. Directional Gain = 5.16dBi + 10log(2) = 8.17dBi

5745~5825MHz Max. Directional Gain = 5.64dBi + 10log(2) = 8.65dBi

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Radio 1 + Radio 2 + Radio 3 = 0.194 + 0.200 + 0.214 = 0.608 < 1

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