

RF Exposure Report

Report No.: SA181106C33

FCC ID: A8J-EWS357AP

Test Model: EWS357AP

Series Model: ECW220

Received Date: Nov. 06, 2018

Test Date: Nov. 30, 2018 ~ Jan. 23, 2019

Issued Date: Jan. 30, 2019

Applicant: EnGenius Technologies

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

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
SA181106C33	Original release	Jan. 30, 2019

1 Certificate of Conformity

Product: 802.11AX Indoor Ceiling Mount Access Point

Brand: EnGenius

Test Model: EWS357AP

Series Model: ECW220

Sample Status: Engineering sample

Applicant: EnGenius Technologies

Test Date: Nov. 30, 2018 ~ Jan. 23, 2019

Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.1-1992

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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Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Jan. 30, 2019
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

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode					
2412-2462	23.21	6.51	20	0.187	1
5180-5240	22.16	7.61	20	0.189	1
5745-5825	22.91	7.61	20	0.224	1
Beamforming Mode					
2412-2462	18.39	6.51	20	0.061	1
5180-5240	18.79	7.61	20	0.087	1
5745-5825	19.40	7.61	20	0.100	1

Note:

2.4G: Directional gain = 3.50dBi + 10log(2) = 6.51dBi

5G: Directional gain = 4.60dBi + 10log(2) = 7.61dBi

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 = 0.187 / 1 + 0.224 / 1 = 0.411

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

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