

## RF Exposure Report

**Report No.:** SABDYS-WTW-P20100844

**FCC ID:** A8J-EWS357APV3A

**Test Model:** EWS357AP v3

**Series Model:** ECW220 v2

**Received Date:** Nov. 01, 2020

**Test Date:** Nov. 04 ~ Nov. 14, 2020

**Issued Date:** Nov. 16, 2020

**Applicant:** EnGenius Technologies

**Address:** 1580 Scenic Avenue, Costa Mesa, CA92626

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

**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

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



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### Release Control Record

Issue No.	Description	Date Issued
SABDYS-WTW-P20100844	Original release	Nov. 16, 2020

## 1 Certificate of Conformity

**Product:** 11ax Indoor Managed AP, 11ax Cloud Managed AP

**Brand:** EnGenius

**Test Model:** EWS357AP v3

**Series Model:** ECW220 v2

**Sample Status:** Engineering sample

**Applicant:** EnGenius Technologies

**Test Date:** Nov. 04 ~ Nov. 14, 2020

**Standards:** FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

**References Test KDB 447498 D01 General RF Exposure Guidance v06  
Guidance:**

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.

**Prepared by :** Pettie Chen, **Date:** Nov. 16, 2020

Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen, **Date:** Nov. 16, 2020

Bruce Chen / Senior 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 <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

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

where

Pd = power density in mW/cm<sup>2</sup>

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 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 AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
CDD Mode					
2412-2462	24.24	6.44	20	0.233	1
5180-5240	25.13	7.23	20	0.343	1
5745-5825	24.44	7.28	20	0.296	1
Beamforming Mode					
2412-2462	19.80	6.44	20	0.084	1
5180-5240	22.12	7.23	20	0.171	1
5745-5825	21.43	7.28	20	0.148	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2412-2462MHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.44 \text{ dBi}$ .

5180-5240MHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 7.23 \text{ dBi}$ .

5745-5825MHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 7.28 \text{ dBi}$ .

#### Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$$2.4G + 5G = 0.233 / 1 + 0.343 / 1 = 0.576$$

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

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