

# **RF Exposure Report**

Report No.: SA160719C17B

FCC ID: A8J-EWS550AP

Model: EWS550AP

Received Date: Jul. 19, 2016

Test Date: Jul. 20 ~ Oct. 06, 2016

**Issued Date:** Dec. 20, 2016

**Applicant:** EnGenius Technologies

Address: 1580 Scenic Avenue, Costa Mesa, CA92626

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

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R.O.C.

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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Reference No.: 160719C17, 161216C03



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# **Release Control Record**

Issue No.	Description	Date Issued
SA160719C17B	Original release	Dec. 20, 2016

Report No.: SA160719C17B Reference No.: 160719C17, 161216C03



## 1 Certificate of Conformity

Product: Wireless AC1300 Managed Wall Plate Access Point

Brand: EnGenius

Model: EWS550AP

Sample Status: Engineering sample

Applicant: EnGenius Technologies

Test Date: Jul. 20 ~ Oct. 06, 2016

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03 (January 17, 2014)

**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: Dec. 20, 2016

Pettie Chen / Senior Specialist

**Approved by:** , **Date:** Dec. 20, 2016

Ken Liu / Senior Manager

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### 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					
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<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**.

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#### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm²)		
WLAN 2.4GHz: CDD mode							
2412-2462	23.44	7.01	20	0.221	1		
WLAN 2.4GHz: Beamforming mode							
2412-2462	21.48	7.01	20	0.141	1		
WLAN 5GHz: CDD mode							
5180-5240	23.05	8.87	20	0.310	1		
5745-5825	22.92	8.87	20	0.300	1		
WLAN 5GHz: Beamforming mode							
5180-5240	22.86	8.87	20	0.296	1		
5745-5825	23.12	8.87	20	0.315	1		
BT LE							
2402-2480	2.95	3.51	20	0.001	1		
Zigbee							
2405-2480	3.25	3.51	20	0.001	1		

Note:

2.4GHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2] = 7.01dBi$  5GHz Band: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2] = 8.87 dBi$ 

Frequency Band	Max Power (dBm)			Total Power	Power Limit
	WLAN	BT LE	Zigbee	(dBm)	(dBm)
2.4GHz	23.44	2.95	-	23.48	30
2.4GHz	23.44	-	3.25	23.48	30

#### **Conclusion:**

The WLAN 2.4G & WLAN 5G & BT LE & Zigbee 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

1. WALN 2.4GHz + WALN 5GHz + BT LE

= 0.221 + 0.315 + 0.001 = 0.537

2. WALN 2.4GHz + WALN 5GHz + Zigbee

= 0.221 + 0.315 + 0.001 = 0.537

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

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