

RF Exposure Report

Report No.: SA180607C03

FCC ID: A8J-ECM355AP

Test Model: ECM355AP

Received Date: Jun. 07, 2018

Test Date: Jul. 02 ~ Jul. 16, 2018

Issued Date: Jul. 25, 2018

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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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SA180607C03	Original release	Jul. 25, 2018

1 Certificate of Conformity

Product: AC1300 Indoor ceiling mount Managed Access Point

Brand: EnGenius[®]

Test Model: ECM355AP

Sample Status: Engineering sample

Applicant: EnGenius Technologies

Test Date: Jul. 02 ~ Jul. 16, 2018

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.

Prepared by : Celine Chou , **Date:** Jul. 25, 2018
Celine Chou / Specialist

Approved by : Bruce Chen , **Date:** Jul. 25, 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

Function	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	CDD Mode					
	2412-2462	22.79	6.99	20	0.189	1
	5180-5240	23.85	8.85	20	0.370	1
	5745-5825	24.25	8.85	20	0.406	1
	Beamforming Mode					
	2412-2462	18.87	6.99	20	0.077	1
	5180-5240	20.01	8.85	20	0.153	1
	5745-5825	21.24	8.85	20	0.203	1
BT LE 4.0	2402-2480	4.99	3.47	20	0.001	1
BT LE 5.0	2402-2480	4.77	3.47	20	0.001	1

Note:

1. 2.4G Directional gain = 3.98dBi + 10log(2) = 6.99dBi
2. 5G Directional gain = 5.84dBi + 10log(2) = 8.85dBi

Frequency Band	Max Power (dBm)		Total Power (dBm)	Power Limit (dBm)
	WLAN	BT LE		
2.4GHz	22.79	4.99	22.86	30.00

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz + BT LE 4.0 = 0.189 + 0.406 + 0.001 = 0.596 < 1

WLAN 2.4GHz + WLAN 5GHz + BT LE 5.0 = 0.189 + 0.406 + 0.001 = 0.596 < 1

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