

RF Exposure Report

Report No.: SA180903E08

FCC ID: YZKECWO5212L

Test Model: ECWO5212-L

Received Date: Sep. 03, 2018

Test Date: Oct. 06, 2018

Issued Date: Nov. 08, 2018

Applicant: Edgecore Networks Corporation

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**FCC Registration /
Designation Number:** 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA180903E08	Original release.	Nov. 08, 2018

1 Certificate of Conformity

Product: 11ac dual band IP68 Access Point with external antenna

Brand: Edgecore

Test Model: ECWO5212-L

Sample Status: ENGINEERING SAMPLE

Applicant: Edgecore Networks Corporation

Test Date: Oct. 06, 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 EMC characteristics under the conditions specified in this report.

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Date:

Nov. 08, 2018

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Approved by :

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Date:

Nov. 08, 2018

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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 ²)	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 ²)*	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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

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 24cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	Chain No.	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
Internal Antenna	2.4G Chain0	4.5	2.4~2.4835	Print PCB	NA	-
	2.4G Chain1	5.4	2.4~2.4835	Print PCB	NA	-
External Antenna	5G Chain0	5.58	5.15~5.85	Dipole	R-SMA	260
	5G Chain1	5.58	5.15~5.85	Dipole	R-SMA	100

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2412	491.547	7.97	24	0.42553	1
WLAN 5GHz (UNII-1)	5200	520.72	8.59	24	0.51996	1
WLAN 5GHz (UNII-3)	5795	396.962	8.59	24	0.39638	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.97\text{dBi}$

5GHz: Directional gain = $5.58\text{dBi} + 10\log(2) = 8.59\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.42553 / 1 + 0.51996 / 1 = 0.94549$

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

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