

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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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location : E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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

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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 |
| 2.4 Antenna Gain | 5 |
| 2.5 Calculation Result of Maximum Conducted Power..... | 6 |

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

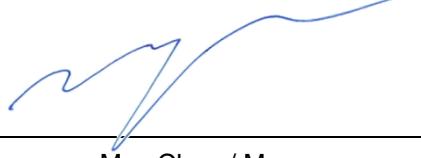
Standards: FCC Part 2 (Section 2.1091)

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.

Prepared by : 
Mary Ko / Specialist , Date: Nov. 08, 2018

Approved by : 
May Chen / Manager , Date: Nov. 08, 2018

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

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

where

Pd = power density in mW/cm²

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 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:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + 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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