

RF Exposure Report

Report No.: SA171215C04C

FCC ID: YZKECWO5211L

Test Model: ECWO5211-L

Received Date: Dec. 15, 2017

Test Date: Jan. 06 to 11, 2018

Issued Date: Apr. 11, 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 |
|--------------|-------------------|---------------|
| SA171215C04C | Original release. | Apr. 11, 2018 |

1 Certificate of Conformity

Product: CONCURRENT DUAL-BAND 11AC WAVE 2 AP

Brand: Edgecore

Test Model: ECWO5211-L

Sample Status: ENGINEERING SAMPLE

Applicant: Edgecore Networks Corporation

Test Date: Jan. 06 to 11, 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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Approved by : May Chen , **Date:** Apr. 11, 2018
May Chen / Manager

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 35cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

| 2.4GHz antenna spec. | | | | |
|-------------------------|------------------|-----------------|----------------|----------------|
| Antenna No. | Frequency (MHz) | Peak Gain (dBi) | Antenna Type | Connector Type |
| 1 | 2400 | 4.87 | Dipole antenna | N-type |
| | 2450 | 4.9 | | |
| | 2500 | 4.92 | | |
| 2 | 2400 | 4.87 | | |
| | 2450 | 4.9 | | |
| | 2500 | 4.92 | | |
| 5GHz antenna spec. | | | | |
| Antenna No. | Frequency (MHz) | Peak Gain (dBi) | Antenna Type | Connector Type |
| 1 | 5150 | 6.87 | Dipole antenna | N-type |
| | 5250 | 6.8 | | |
| | 5350 | 6.76 | | |
| | 5450 | 6.83 | | |
| | 5550 | 6.85 | | |
| | 5650 | 6.75 | | |
| | 5750 | 6.92 | | |
| | 5850 | 6.83 | | |
| 2 | 5150 | 6.87 | | |
| | 5250 | 6.8 | | |
| | 5350 | 6.76 | | |
| | 5450 | 6.83 | | |
| | 5550 | 6.85 | | |
| | 5650 | 6.75 | | |
| | 5750 | 6.92 | | |
| | 5850 | 6.83 | | |
| Bluetooth antenna spec. | | | | |
| Frequency (MHz) | Peak Gain (dBi) | Antenna Type | Connector Type | |
| 2400 | 3.71 | PIFA | None | |
| 2450 | 3.79 | | | |
| 2500 | 3.88 | | | |
| GPS antenna spec. | | | | |
| Frequency (MHz) | Peak Gain (dBiC) | | Antenna Type | Connector Type |
| | Horizontal | Vertical | | |
| 1575 | 2.8 | 3.8 | PIFA | Mini PCI |
| 1575.4 | 2.7 | 3.7 | | |
| 1610 | 3.9 | 3.4 | | |

2.5 Calculation Result

For WLAN:

| Frequency Band (MHz) | Max Power (mW) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|----------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412-2462 | 645.727 | 7.93 | 35 | 0.26044 | 1 |
| 5180-5240 | 201.971 | 9.93 | 35 | 0.12910 | 1 |
| 5745-5825 | 782.596 | 9.93 | 35 | 0.50025 | 1 |

NOTE:

2.4GHz: Directional gain = 4.92dBi + 10 log(2) = 7.93dBi

5GHz: Directional gain = 6.92dBi + 10 log(2) = 9.93dBi

For BT-LE (FCC ID: RC6-M2-TBT):

| Frequency Band (MHz) | Max Power (mW) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|----------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2402-2480 | 1.059 | 3.88 | 35 | 0.00017 | 1 |

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 + Bluetooth = 0.26044 / 1 + 0.50025 / 1 + 0.00017 / 1 = 0.76086

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

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