

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

Address: No.1, Creation 3rd Rd., Hsinchu Science Park, East Dist., Hsinchu City
30077, Taiwan, R.O.C

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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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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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.

Prepared by :

Mary Ko

Date:

Apr. 11, 2018

Mary Ko / Specialist

:

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

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

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:

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

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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