RF Exposure Report

Report No.:	SA170809E07C
FCC ID:	YZKECW5211O
Test Model:	ECW5211-O
Series Model:	ECW5211-L, ECW5211-L2
Received Date:	Aug. 09, 2017
Test Date:	Sep. 06, 2017; Mar.15, 2018
Issued Date:	Mar. 29, 2018
Applicant:	Edgecore Networks Corporation
Address:	No.1, Creation Rd. III, Hsinchu Science Park, Hsinchu 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
SA170809E07C	Original release.	Mar. 29, 2018

1 Certificate of Conformity

Product:	802.11ac Wireless Access Point
Brand:	Edgecore
Test Model:	ECW5211-O
Series Model:	ECW5211-L, ECW5211-L2
Sample Status:	ENGINEERING SAMPLE
Applicant:	Edgecore Networks Corporation
Test Date:	Sep. 06, 2017; Mar.15, 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:** Mar. 29, 2018

Mary Ko / Specialist

Approved by : , **Date:** Mar. 29, 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/cm^2

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 28cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN antenna spec.					
Antenna No.	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
Antenna 1	4.17	2.4~2.4835	Monopole	i-pex	180
	5.83	5.15~5.85			
Antenna 2	4.27	2.4~2.4835	Monopole	i-pex	160
	8.18	5.15~5.85			

Bluetooth antenna spec.				
Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
4.09	2.4~2.4835	PIFA	i-pex	80

2.5 Calculation Result of Maximum Conducted Power

WLAN 2.4GHz & 5GHz data was copied from the original test report (Report No.: SA170809E07)

For WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	864.046	7.23	28	0.46346	1
5180-5240	349.188	10.09	28	0.36185	1
5745-5825	417.679	10.09	28	0.43283	1

NOTE:
2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.23$dBi
5GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 10.09$dBi

For Bluetooth:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	1.225	4.09	28	0.00032	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 = 0.46346 / 1 + 0.43283 / 1 + 0.00032 / 1= 0.89661
Therefore the maximum calculations of above situations are less than the "1" limit.

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