RF Exposure Report

Report No.:	SA170703E05
FCC ID:	YZKECW5410O
Test Model:	ECW5410-O
Series Model:	ECW5410-L2, ECW5410-L
Received Date:	July 04, 2017
Test Date:	Sep. 06 to 07, 2017
Issued Date:	Oct. 20, 2017
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.

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Release Control Record

Issue No.	Description	Date Issued
SA170703E05	Original release.	Oct. 20, 2017

1 Certificate of Conformity

Product:	802.11ac Wireless Access Point
Brand:	Edgecore
Test Model:	ECW5410-O
Series Model:	ECW5410-L2, ECW5410-L
Sample Status:	ENGINEERING SAMPLE
Applicant:	Edgecore Networks Corporation.
Test Date:	Sep. 06 to 07, 2017
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 : Wendy Wu , **Date:** Oct. 20, 2017

Wendy Wu / Specialist

Approved by : , **Date:** Oct. 20, 2017

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 42cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN						
Antenna No.	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connecter Type
1	NA	NA	3.59	2.4~2.4835	Monopole	i-pex
			6.28	5.15~5.25		
			5.41	5.25~5.35		
			5.24	5.47~5.725		
			6.39	5.725~5.85		
2	NA	NA	3.74	2.4~2.4835	Monopole	i-pex
			3.9	5.15~5.25		
			3.48	5.25~5.35		
			4.16	5.47~5.725		
			4.41	5.725~5.85		
3	NA	NA	4.33	2.4~2.4835	Monopole	i-pex
			5.65	5.15~5.25		
			5.02	5.25~5.35		
			4.84	5.47~5.725		
			4.93	5.725~5.85		
4	NA	NA	4.09	2.4~2.4835	Monopole	i-pex
			6.09	5.15~5.25		
			5.37	5.25~5.35		
			5.29	5.47~5.725		
			6.62	5.725~5.85		
Bluetooth						
Antenna No.	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connecter Type
5	NA	NA	4.68	2.4~2.4835	Monopole	i-pex

2.5 Calculation Result Of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	721.798	9.96	42	0.32263	1
5180-5240	528.397	11.55	42	0.34060	1
5745-5825	865.625	11.66	42	0.57230	1

NOTE:
2.4GHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4$] = 9.96dBi
5GHz:
UNII-1: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4$] = 11.55dBi
UNII-3: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4$] = 11.66dBi

For Bluetooth:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	2.404	4.68	42	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 = 0.32263 / 1 + 0.57230 / 1 + 0.00032 / 1 = 0.89525
Therefore the maximum calculations of above situations are less than the "1" limit.

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