



# RF EXPOSURE REPORT

**REPORT NO.:** SA140402E02A R1

**MODEL NO.:** ECWO4320, ECWO4320-C, ECWO4320-L,  
ECWO4324, ECWO4324-C, ECWO4324-L

**FCC ID:** YZKECWO4320

**RECEIVED:** Apr. 08, 2014

**TESTED:** Apr. 08 to May 09, 2014

**ISSUED:** May 29, 2014

**APPLICANT:** Edgecore Networks Corporation.

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140402E02A	Original release	May 14, 2014
SA140402E02A R1	Modified the product name.	May 29, 2014



## 1. CERTIFICATION

**PRODUCT:** 802.11ac Outdoor 5GHz Access Point

**BRAND NAME:** Edge-corE

**MODEL NO.:** ECWO4320, ECWO4320-C, ECWO4320-L,  
ECWO4324, ECWO4324-C, ECWO4324-L

**TEST SAMPLE:** ENGINEERING SAMPLE

**APPLICANT:** Edgecore Networks Corporation.

**TESTED DATE:** Apr. 08 to May 09, 2014

**STANDARDS:** FCC Part 2 (Section 2.1091)  
FCC OET Bulletin 65, Supplement C (01-01)  
IEEE C95.1

The above equipment (Model: ECWO4320, ECWO4324) have 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** : Phoenix Huang , **DATE:** May 29, 2014  
( Phoenix Huang, Specialist )

**APPROVED BY** : May Chen , **DATE:** May 29, 2014  
( May Chen, Manager )

## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 3. MPE CALCULATION FORMULA

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

### 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. ANTENNA GAIN

External antenna								
Transmitter Circuit	Antenna Type	Connector Type	Antenna Gain(dBi) < excluding cable loss>	Inside EUT		Outside EUT		Frequency range (MHz to MHz)
				Cable Loss (dB)	Cable Length (mm)	Cable Loss (dB)	Cable Length (mm)	
Chain (0)	Dipole	RP-SMA	2.7	1.2	250	2.9	500	5150~5850
Chain (1)	Dipole	RP-SMA	2.7	1.2	250	2.9	500	5150~5850
Internal antenna								
Transmitter Circuit	Antenna Type	Connector Type	Antenna Gain(dBi)	Frequency range (MHz to MHz)				
Chain (0)	Patch Array	MMCX	8	5150~5850				
Chain (1)	Patch Array	MMCX	8	5150~5850				

※For 802.11a mode will fix transmission on Chain (0)

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247 the Maximum power was refer to the FCC test report (Report No.: RF140402E02C)

**For WLAN: 15.247**  
**With External antenna**  
**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	253.513	-1.4	20	0.03654	1.00

**802.11ac (VHT20), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	253.513	-1.4	20	0.03654	1.00

**802.11ac (VHT40), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 - 5795	251.768	-1.4	20	0.03629	1.00

**802.11ac (VHT80), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5775	153.109	-1.4	20	0.02207	1.00

**802.11ac (VHT20), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	224.946	-1.4	20	0.03530	1.00

**802.11ac (VHT40), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 - 5795	200.708	-1.4	20	0.02893	1.00

**802.11ac (VHT80), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5775	192.573	-1.4	20	0.02775	1.00

**For WLAN: 15.247**

**With Internal antenna**

**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	138.995	8	20	0.17447	1.00

**802.11ac (VHT20), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	211.349	8	20	0.26530	1.00

**802.11ac (VHT40), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 - 5795	208.449	8	20	0.26165	1.00

**802.11ac (VHT80), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5775	153.109	8	20	0.19219	1.00

**802.11ac (VHT20), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 - 5825	217.548	8	20	0.27308	1.00



**802.11ac (VHT40), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5755 - 5795	200.708	8	20	0.25194	1.00

**802.11ac (VHT80), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5775	192.573	8	20	0.24173	1.00

**For WLAN: 15.407**
**With External antenna**
**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	46.026	-1.4	20	0.00663	1.00

**802.11ac (VHT20), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	45.082	-1.4	20	0.00650	1.00

**802.11ac (VHT40), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 - 5230	49.091	-1.4	20	0.00708	1.00

**802.11ac (VHT80), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	49.091	-1.4	20	0.00708	1.00

**802.11ac (VHT20), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	45.450	-1.4	20	0.00655	1.00

**802.11ac (VHT40), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 - 5230	49.095	-1.4	20	0.00708	1.00

**802.11ac (VHT80), 2Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	46.776	-1.4	20	0.00674	1.00

**For WLAN: 15.407**

**With Internal antenna**

**802.11a**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	10.423	8	20	0.01308	1.00

**802.11ac (VHT20), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	10.351	8	20	0.01299	1.00

**802.11ac (VHT40), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 - 5230	10.447	8	20	0.01311	1.00

**802.11ac (VHT80), 1Tx**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	10.889	8	20	0.01367	1.00



#### 802.11ac (VHT20), 2Tx

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 - 5240	10.175	8	20	0.01272	1.00

#### 802.11ac (VHT40), 2Tx

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 - 5230	11.048	8	20	0.01387	1.00

#### 802.11ac (VHT80), 2Tx

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	10.896	8	20	0.01368	1.00

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