

## RF Exposure Report

**Report No.:** SA131021C14E

**FCC ID:** I88NWA1123AC

**Test Model:** NWA1123-AC

**Received Date:** Feb. 26, 2016

**Test Date:** Feb. 26 ~ May 06, 2016

**Issued Date:** May 09, 2016

**Applicant:** ZyXEL Communications Corporation

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

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**Test Location:** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
SA131021C14E	Original release.	May 09, 2016

## 1 Certificate of Conformity

**Product:** 802.11 a/b/g/n/ac Dual-Radio Ceiling Mount PoE Access Point

**Brand:** ZyXEL

**Test Model:** NWA1123-AC

**Sample Status:** Engineering sample

**Applicant:** ZyXEL Communications Corporation

**Test Date:** Feb. 26 ~ May 06, 2016

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 (October 23, 2015)  
IEEE C95.1

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 :**

  
Pettie Chen / Senior Specialist

**Date:**

May 09, 2016

**Approved by :**

  
Ken Liu / Senior Manager

**Date:**

May 09, 2016

## 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 <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 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

### 2.3 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**.

### 3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	22.89	6.51	20	0.173	1
5180-5240	15.38	7.91	20	0.042	1
5745-5825	23.35	7.91	20	0.266	1

Note:

For 2.4GHz Band: Directional gain = 3.5dBi + 10log(2) = 6.51dBi

For 5GHz Band: Directional gain = 4.9dBi + 10log(2) = 7.91dBi

Frequency Band	Max Power (dBm)			Total Power (dBm)	Power Limit (dBm)
	2.4GHz	5180-5240MHz	5745-5825MHz		
2.4GHz+5GHz	22.89	15.38	-	23.60	30
2.4GHz+5GHz	22.89	-	23.35	26.14	30

#### CONCLUSION:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.173 + 0.266 = 0.439

Therefore, the maximum calculation of this situation is 0.439, which is less than the "1" limit.

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