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
Address:	No. 2, Gongye E. 9th Road, Hsinchu Science Park, Hsinchu, Taiwan, R.O.C
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
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 : _____ , **Date:** May 09, 2016

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** May 09, 2016

Ken Liu / Senior 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				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

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 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^2)	Limit (mW/cm^2)
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

CONCULSION:

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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