



RF EXPOSURE REPORT

REPORT NO.: SA120719C20

MODEL NO.: NWA1123-NI, NWA5123-NI

FCC ID: I88NWA1123NI

RECEIVED: Jul. 19, 2012

TESTED: Jul. 28 ~ Aug. 23, 2012

ISSUED: Aug. 28, 2012

APPLICANT: ZyXEL Communications Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120719C20	Original release	Jul. 25, 2012



1. CERTIFICATION

PRODUCT: 802.11 a/b/g/n Dual-Radio PoE Access Point

MODEL: NWA1123-NI, NWA5123-NI

BRAND: ZyXEL

APPLICANT: ZyXEL Communications Corporation

TESTED: Jul. 28 ~ Aug. 23, 2012

TEST SAMPLE: Identical Prototype

STANDARDS: **FCC Part 2 (Section 2.1091)**

FCC OET Bulletin 65, Supplement C (01-01)

IEEE C95.1

The above equipment (Model: NWA1123-NI) 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 : Aug. 28, 2012
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APPROVED BY :  , DATE : Aug. 28, 2012
Gary Chang / Technical 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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**.

2.4 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	21.75	5.01	20	0.0943	1
5180-5240	16.68	5.01	20	0.029	1
5745-5825	26.58	5.01	20	0.2867	1

Directional gain = 2dBi + 10log(2) = 5.01dBi

CONCLUSION:

Only 2.4 and 5GHz can transmit simultaneously, 2.4 and 2.4GHz does not. The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.0943 + 0.2867 = 0.381

Therefore, the maximum calculation of this situation is 0.381, which is less than the "1" limit.