RF EXPOSURE REPORT

REPORT NO.:	SA120213C07C
MODEL NO.:	NWA1121-N, NWA5121-N
FCC ID:	I88NWA1121NI
RECEIVED:	Feb. 28, 2013
TESTED:	Mar. 11 ~ Mar. 15, 2013
ISSUED:	Apr. 17, 2013

APPLICANT:	ZyXEL Communications Corporation
ADDRESS:	No. 2, Gongye E. 9th Rd., East Dist., Hsinchu City 300, Taiwan(R.O.C.)

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 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 Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120213C07C	Original release	Apr. 17, 2013

1. CERTIFICATION

PRODUCT:	802.11 b/g/n PoE Access Point, 802.11 b/g/n Managed Access Point
MODEL NO.:	NWA1121-N, NWA5121-N
BRAND:	ZyXEL
APPLICANT:	ZyXEL Communications Corporation
TESTED:	Mar. 11 ~ Mar. 15, 2013
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 2 (Section 2.1091)** **FCC OET Bulletin 65, Supplement C (01-01)** **IEEE C95.1**

The above equipment (model: NWA1121-N) 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 :** Apr. 17, 2013
Pettie Chen / Senior Specialist

APPROVED BY : _____ , **DATE :** Apr. 17, 2013
Ken Liu / Senior Manager

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	802.11 b/g/n PoE Access Point, 802.11 b/g/n Managed Access Point
MODEL NO.	NWA1121-N, NWA5121-N
POWER SUPPLY	12Vdc (adapter) 55Vdc (POE)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
OUTPUT POWER	273.876mW
ANTENNA TYPE	Dipole antenna with 3.0dBi gain
ANTENNA CONNECTOR	RP-SMA
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. This report is issued as a supplementary report to the original BVADT report no. SA120213C07. This report is prepared for FCC class II permissive change. The differences compared with original report are changing the position of antenna and model name. All test data had been re-tested.
2. The models as below are electrically identical, different models are for marketing purpose.

Brand	Product Name	Model No.	Differentiation
ZyXEL	802.11 b/g/n PoE Access Point	NWA1121-N	marketing differentiation
	802.11 b/g/n Managed Access Point	NWA5121-N	

3. The EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

4. The EUT consumes power from the following adapters & POE:

ADAPTER	
BRAND:	DVE
MODEL:	DSA-12CA-12 120100
INPUT:	100-240Vac, 50/60Hz, 0.3A
OUTPUT:	12Vdc, 1A
POWER LINE:	1.5m non-shielded cable without core

POE	
BRAND:	PowerDsine
MODEL:	PD-9001G
INPUT:	100-250Vac, 50/60Hz, 0.8A
OUTPUT:	55Vdc, 0.6A

**POE was for support unit.

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3. RF EXPOSURE

3.1 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

3.2 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

3.3 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**.

3.4 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	24.38	6.01	20	0.218	1

* Directional gain = 3dBi + 10log(2) = 6.01dBi