RF EXPOSURE REPORT

REPORT NO.:	SA140605C26
MODEL NO.:	NBG6616, EMG2826-Q10A, EMG2806-Q10A
FCC ID:	I88NBG6616
RECEIVED:	Jun. 05, 2014
TESTED:	Jun. 12 ~ Jul. 07, 2014
ISSUED:	Jul. 14, 2014

APPLICANT:	ZyXEL Communications Corporation
ADDRESS:	No. 2, Gongye E. 9th Road Hsinchu Science Park, Hsinchu, Taiwan

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.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140605C26	Original release.	Jul. 14, 2014

1. CERTIFICATION

PRODUCT:	Simultaneous Dual-Band Wireless AC1200 HD Media Router
MODEL:	NBG6616, EMG2826-Q10A, EMG2806-Q10A
BRAND:	ZyXEL
APPLICANT:	ZyXEL Communications Corporation
TESTED:	Jun. 12 ~ Jul. 07, 2014
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 2 (Section 2.1091)**
	KDB 447498 D03
	IEEE C95.1

The above equipment (Model: NBG6616) 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 : Celine Chou **, DATE :** Jul. 14, 2014

Celine Chou / Specialist

APPROVED BY : Ken Liu **, DATE :** Jul. 14, 2014

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 21cm 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	27.58	6.46	21	0.457	1
5180-5240	27.44	7.16	21	0.520	1
5745-5825	21.33	7.16	21	0.127	1

NOTE:

2.4GHz Band: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}] = 6.46$

5.0GHz Band: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}] = 7.16$

CONCLUSION:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.457 + 0.520 = 0.977

Therefore all the maximum calculations of above situations are less than the “1” limit.