FCC RF Exposure Report

FCC ID	:	**I88NBG6815**
Equipment	:	**Simultaneous Dual-Band Wireless AC2200 Gigabit Ethernet Gateway**
Model No.	:	**EMG3425-Q10A、NBG6815 (Please refer to section 1.1.1 for more details.)**
Brand Name	:	**ZyXEL**
Applicant	:	**ZyXEL Communications Corporation**
Address	:	**No. 2, Gongye E. 9th Road, Hsinchu Science Park, Hsinchu, Taiwan.**
Standard	:	**47 CFR FCC Part 2.1091**
Received Date	:	**Jun. 16, 2015**
Tested Date	:	**Jul. 17 ~ Nov. 25, 2015**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Gary Chang / Manager

Testing Laboratory
2732

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FA570601-01	Rev. 01	Initial issue	Nov. 26, 2015

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
ZyXEL	EMG3425-Q10A	Simultaneous Dual-Band Wireless AC2200 Gigabit Ethernet Gateway	The difference between both models is only numbers of LED of non-RF portion
	NBG6815		

2 MPE EVALUATION OF MOBILE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 21 cm or more from persons.

2.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Frequency Range (MHz)	Power Density (mW /cm^2)	Averaging Time (minutes)
300~1500	F/1500	30
1500~100000	1.0	30

2.2 MPE EVALUATION FORMULA

$$\textbf{Pd} = \frac{Pt}{4 * Pi * R^2}$$

Where

Pd= Power density in mW/cm^2
Pt= EIRP in Mw
Pi= 3.1416
R= Measurement distance

2.3 MPE EVALUATION RESULTS

MPE Evaluation of Single Transmission

Non-beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412~2462	29.92	1.53	21	0.252	1
5180~5240	29.89	1.92	21	0.274	1
5745~5825	28.09	1.92	21	0.181	1

Beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
5180~5240	27.92	7.94	21	0.696	1
5745~5825	27.99	7.94	21	0.707	1

Note:

For 5150~5250 MHz band and 5725~5850 MHz band
Directional gain = 1.92+10* log(4/1) = 7.94 dBi

MPE Evaluation of Simultaneous Transmission

2.4 and 5GHz can transmit at the same time, MPE evaluation is as below formula

PD1 / Limit1 + PD2 / Limit 2 + ….. < 1, PD = Power density

1. 2.4GHz Wi-Fi + 5GHz Wi-Fi Non-beamforming mode

MPE Evaluation = Maximum MPE of 2.4GHz + Maximum MPE of 5 GHz = 0.252 / 1 + 0.274 / 1 = 0.526 < 1

2. 2.4GHz Wi-Fi + 5GHz Wi-Fi Beamforming mode

MPE Evaluation = Maximum MPE of 2.4GHz + Maximum MPE of 5 GHz = 0.252 / 1 + 0.707 / 1 = 0.959< 1

Conclusion

MPE evaluations of single and simultaneous transmission meet the requirement of standard.

3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp, it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

==END==