

## RF Exposure Report

**Report No.:** SA170110C12

**FCC ID:** I88EMG6765-Q10A

**Model:** EMG6765-Q10A

**Series Model:** EMG3426-Q10A

**Received Date:** Jan. 10, 2017

**Test Date:** Feb. 24 ~ Mar. 29, 2017

**Issued Date:** Apr. 20, 2017

**Applicant:** Zyxel Communications Corporation

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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**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
SA170110C12	Original release.	Apr. 20, 2017

## 1 Certificate of Conformity

**Product:** AC2200 Gigabit Ethernet MoCA Gateway  
AC2200 Gigabit Ethernet Gateway

**Brand:** ZYXEL

**Model:** EMG6765-Q10A

**Series Model:** EMG3426-Q10A

**Sample Status:** Engineering sample

**Applicant:** Zyxel Communications Corporation

**Test Date:** Feb. 24 ~ Mar. 29, 2017

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03 (January 17, 2014)  
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:** Apr. 20, 2017  
Pettie Chen / Senior Specialist

**Approved by :**  , **Date:** Apr. 20, 2017  
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 <sup>2</sup> )	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<sup>2</sup>

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 28cm 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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
CDD mode					
2412-2462	28.89	8.03	28	0.499	1
5180-5240	27.87	7.39	28	0.341	1
5745-5825	29.11	7.55	28	0.470	1
Beamforming mode					
5180-5240	27.87	7.39	28	0.341	1
5745-5825	28.26	7.55	28	0.387	1

Note:

2.4GHz Band: Directional gain =  $10 \log[(10^{2.94/20} + 10^{3.40/20} + 10^{3.42/20})^2/2] = 8.03\text{dBi}$

5180-5240MHz: Directional gain =  $10 \log[(10^{4.08/20} + 10^{4.66/20})^2/2] = 7.39\text{dBi}$

5745-5825MHz: Directional gain =  $10 \log[(10^{4.49/20} + 10^{4.58/20})^2/2] = 7.55\text{dBi}$

#### CONCLUSION:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4G + WLAN 5.0G = 0.499 + 0.470 = 0.969

Therefore, the maximum calculation of this situation is 0.969, which is less than the "1" limit.

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