RF Exposure Report

Report No.: SA160525E02A

FCC ID: I88WRE6606

Test Model: WRE6606

Received Date: May 25, 2016

Test Date: Oct. 14, 2016

Issued Date: Nov. 16, 2016

Applicant: Zyxel Communications Corporation

Address: No.2, Industry East Road IX, Science Park, Hsinchu, Taiwan

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

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Release Control Record

Issue No.	Description	Date Issued
SA160525E02A	Original release.	Nov. 16, 2016

1 Certificate of Conformity

Product:	Dual-Band Wireless AC1300 Access Point
Brand:	ZYXEL
Test Model:	WRE6606
Sample Status:	ENGINEERING SAMPLE
Applicant:	Zyxel Communications Corporation
Test Date:	Oct. 14, 2016
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06

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 : Cindy Hsin , **Date:** Nov. 16, 2016

Cindy Hsin / Specialist

Approved by : , **Date:** Nov. 16, 2016

May Chen / 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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No	Transmitter Circuit	Brand	Model	Antenna Gain(dBi)	Antenna Type	Connecter Type	Frequency (GHz to GHz)
1	Chain (0) Tx/Rx	Walsin	RFMTA351202IMLB301	3	PIFA	i-pex(MHF)	2.4~2.4835
				3.5	PIFA	i-pex(MHF)	5.15~5.85
2	Chain (1) Tx/Rx	Walsin	RFMTA321204IMLB301	2	PIFA	i-pex(MHF)	2.4~2.4835
				3.5	PIFA	i-pex(MHF)	5.15~5.85
3	Chain (2) 5GHz_RX_0	Walsin	RFMTA161100NN5B001	3	PIFA	i-pex(MHF)	5.15~5.85
4	Chain (3) 5GHz_RX_1	Walsin	RFMTA161100NN5B001	3	PIFA	i-pex(MHF)	5.15~5.85
Note: For 5GHz: TX configuration mode will fix transmission on Chain (0) and Chain (1).							

2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	836.868	5.52	20	0.59345	1
5180-5240	122.309	6.51	20	0.10894	1
5745-5825	128.006	6.51	20	0.11401	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.52dBi$

5GHz: Directional gain = 3.50dBi + 10log(2) = 6.51dBi

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 = 0.59345 / 1 + 0.11401 / 1 = 0.70746

Therefore the maximum calculations of above situations are less than the "1" limit.

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