

RF Exposure Report

Report No.: SA160822E04A

FCC ID: RRKAP200BA1

Test Model: AP-200B

Series Model: WAP-AC24

Received Date: Aug. 22, 2016

Test Date: Sep. 19, 2016

Issued Date: Nov. 24, 2016

Applicant: Alpha Networks Inc.

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

Issue No.	Description	Date Issued
SA160822E04A	Original release.	Nov. 24, 2016

1 Certificate of Conformity

Product: Wireless AC1300 Concurrent Dual Band PoE Access Point

Brand: Alpha

Test Model: AP-200B

Series Model: WAP-AC24

Sample Status: ENGINEERING SAMPLE

Applicant: Alpha Networks Inc.

Test Date: Sep. 19, 2016

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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.

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Approved by : May Chen , **Date:** Nov. 24, 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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 22cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency range (GHz ~ GHz)	Antenna Type	Connector Type	Cable Length (mm)
Chain (1)	NA	290-20302	3.07	2.4~2.4835	PIFA	i-pex(MHF)	47
			3.46	5.15~5.85			
Chain (2)	NA	290-20301	2.85	2.4~2.4835	PIFA	i-pex(MHF)	81
			3.75	5.15~5.85			

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	861.713	5.97	22	0.56015	1
5180-5240	426.809	6.62	22	0.32224	1
5745-5825	459.267	6.62	22	0.34674	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.97\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.62\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = $0.56015 / 1 + 0.34674 / 1 = 0.90689$

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

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