RF Exposure Report

Report No.: SA150921E04

FCC ID: RRKWAPAC14

Test Model: WAP-AC14

Series Model: T1023WLAN-PA

Received Date: Sep. 21, 2015

Test Date: Oct. 05, 2015

Issued Date: Nov. 18, 2015

Applicant: Alpha Networks Inc.

Address: No.8 Li-shing 7th Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.

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

Lab Address: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (1): No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (3): E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA150921E04	Original release.	Nov. 18, 2015

1   Certificate of Conformity

Product:	11ac 4T4R enterprise AP
Brand:	Freescale
Test Model:	WAP-AC14
Series Model:	T1023WLAN-PA
Sample Status:	ENGINEERING SAMPLE
Applicant:	Alpha Networks Inc.
Test Date:	Oct. 05, 2015
Standards:	FCC Part 2 (Section 2.1091)
	KDB 447498 D03
	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:** _____ Nov. 18, 2015 _____
Claire Kuan / Specialist

Approved by : _____ , **Date:** _____ Nov. 18, 2015 _____
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 37cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

For 2.4GHz									
Transmitter Circuit	Brand	Model	Antenna Gain (dBi) (excluding cable loss)	Frequency range (GHz to GHz)	Cable Loss(dB)	Net Gain (dBi) (Included cable loss)	Antenna Type	Connecter Type	Cable Length (mm)
Chain (0)	NA	5320813170AWG	4.04	2.4-2.4835	1.2	2.84	Dipole	R-SMA	430
Chain (1)		5320813170AWG							
Chain (2)		5320813170AWG							
Chain (3)		5320813170AWG							
For 5GHz									
Transmitter Circuit	Brand	Model	Antenna Gain (dBi) (excluding cable loss)	Frequency range (GHz to GHz)	Cable Loss(dB)	Net Gain (dBi) (Included cable loss)	Antenna Type	Connecter Type	Cable Length (mm)
Chain (0)	NA	5321813181AWG	6.37	5.15-5.85	1.5	4.87	Dipole	R-SMA	130
Chain (1)		5321813181AWG							
Chain (2)		5321813181AWG							
Chain (3)		5321813181AWG							

4   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	743.05	8.86	37	0.33220	1
5180-5240	577.099	10.89	37	0.41175	1
5745-5825	857.501	10.89	37	0.61182	1

NOTE:
2.4GHz: Directional gain = 2.84dBi + 10log(4) = 8.86dBi
5GHz: Directional gain = 4.87dBi + 10log(4) = 10.89dBi

Conclusion:

Both of the 2.4GHz/5GHz can transmit simultaneously, the formula of calculated the MPE is

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

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.33220 / 1 + 0.61182 / 1= 0.94402, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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