

RF Exposure Report

Report No.: SA151116E02

FCC ID: WBV-AP250

Test Model: AP250

Received Date: Nov. 16, 2015

Test Date: Feb. 18, 2016

Issued Date: Mar. 29, 2016

Applicant: Aerohive Networks Inc.

Address: 330 Gibraltar Drive, Sunnyvale, CA 94089, USA

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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specifically mentioned, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits For Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	6
3 Calculation Result Of Maximum Conducted Power	7



Release Control Record

Issue No.	Description	Date Issued
SA151116E02	Original release.	Mar. 29, 2016




1 Certificate of Conformity

Product: Access Point
Brand: Aerohive
Test Model: AP250
Sample Status: Engineer Sample (DVT2)
Applicant: Aerohive Networks Inc.
Test Date: Feb. 18, 2016
Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.1-2005

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:** Mar. 29, 2016
Claire Kuan / Specialist

Approved by :  , **Date:** Mar. 29, 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/cm²

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 32cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

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

Radio 1									
WLAN - 2.4GHz + 5GHz									
Antenna NO.	Transmitter Circuit	Brand	Model No.	Ant. Gain (dBi) Including cable loss	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Loss(dB)	Cable Length
ANT1	Chain (0)	N/A	XKAA-N08	5.14 5.41 5.02 5.25 5.13	2.4~2.4835 5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	PIFA	i-pec (MHF)	0.21	54mm
ANT2	Chain (1)	N/A	XKAA-N08	4.28 4.82 5.16 5.14 5.31	2.4~2.4835 5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	PIFA	i-pec (MHF)	0.19	49mm
ANT3	Chain (2)	N/A	XKAA-N08	2.80 5.25 5.46 5.37 5.65	2.4~2.4835 5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	PIFA	i-pec (MHF)	0.39	101mm
Radio 2									
WLAN - 5GHz									
Antenna NO.	Transmitter Circuit	Brand	Model No.	Ant. Gain (dBi) Including cable loss	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Loss(dB)	Cable Length
ANT5	Chain (0)	N/A	XKAA-N08	5.32 5.78 5.26 5.3	5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	V-pol PIFA	i-pec (MHF)	0.82	213mm
ANT6	Chain (1)	N/A	XKAA-N08	5.54 5.72 5.56 5.1	5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	V-pol PIFA	i-pec (MHF)	0.25	66mm
ANT7	Chain (1)	N/A	XKAA-N08	5.24 6.38 5.36 5.27	5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	H-pol Dipole	i-pec (MHF)	0.58	150mm
ANT8	Chain (2)	N/A	XKAA-N08	4.88 4.27 4.84 5.19	5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	H-pol Dipole	i-pec (MHF)	0.77	201mm
ANT9	Chain (2)	N/A	XKAA-N08	4.41 4.55 4.79 4.87	5.15~5.25 5.25~5.35 5.47~5.725 5.725~5.85	H-pol Dipole	i-pec (MHF)	0.73	190mm
Radio 3									
Bluetooth - 2.4GHz									
ANT4	Chain (0)	N/A	XKAA-N08	4.24	2.4~2.4835	Dipole	i-pec (MHF)	0.62	160mm

3 Calculation Result of Maximum Tune up Power

Radio 1

Frequency Band (MHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	27.77	598.411	8.9	32	0.36098	1
5180-5240	23.77	238.23	9.93	32	0.18217	1
5745-5825	24.77	299.916	10.14	32	0.24071	1

NOTE:

2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20})^2 / 3] = 8.9\text{dBi}$

5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20})^2 / 3] = 9.93\text{dBi}$

5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20})^2 / 3] = 10.14\text{dBi}$

Radio 2

Frequency Band (MHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	25.77	377.57	10.02	32	0.29477	1
5745-5825	25.77	377.57	9.97	32	0.29140	1

NOTE:

5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20})^2 / 3] = 10.02\text{dBi}$

5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20})^2 / 3] = 9.97\text{dBi}$

Radio 3 (Bluetooth)

Frequency Band (MHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	9	7.943	4.24	32	0.00164	1

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.36098 / 1 + 0.29477 / 1 + 0.00164 / 1 = 0.65739$, which is less than "1".

This confirmed that the device comply with FCC 1.1310 MPE limit.

NOTE:

All radio technologies can transmit simultaneously, but Radio 1 & Radio 2 will not simultaneously in the same sub-band.

--- END ---