



## RF Exposure Evaluation Declaration

Product Name : Wireless Access point  
Model No. : AP122, AP122X  
FCC ID : WBV-AP122

Applicant : Aerohive Networks, Inc.  
Address : Aerohive Networks, 1011 McCarthy Boulevard,  
Milpitas, CA 95035, United States

Date of Receipt : Oct. 10, 2017  
Test Date : Oct. 10, 2017~ Nov. 24, 2017  
Issued Date : Jan. 04, 2018  
Report No. : 17A2003R-RF-US-P20V01  
Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, A2LA or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.

## Test Report Certification

Issued Date : Jan. 04, 2018

Report No. : 17A2003R-RF-US-P20V01



Product Name : Wireless Access point

Applicant : Aerohive Networks, Inc.

Address : Aerohive Networks, 1011 McCarthy Boulevard, Milpitas,  
CA 95035, United States

Manufacturer : Aerohive Networks, Inc.

Address : Aerohive Networks, 1011 McCarthy Boulevard, Milpitas,  
CA 95035, United States

Model No. : AP122, AP122X

FCC ID : WBV-AP122

Brand Name : Aerohive

EUT Voltage : PoE 48V

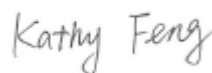
Test Voltage : AC 120V/60Hz

Applicable Standard : KDB 447498D01V06  
FCC Part1.1310

Test Result : Complied

Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.  
Corporation - Suzhou EMC Laboratory  
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,  
215006, Jiangsu, China  
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098  
FCC Designation Number: CN1199

Documented By :



(Project Assistant: Kathy Feng)

Reviewed By :



(Senior Engineer: Frank He )

Approved By :



(Engineering Manager: Harry Zhao )

## 1. RF Exposure Evaluation

### 1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### 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) |
|-----------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| (A) Limits for Occupational/ Control Exposures            |                               |                               |                                     |                        |
| 300-1500                                                  | --                            | --                            | F/300                               | 6                      |
| 1500-100,000                                              | --                            | --                            | 5                                   | 6                      |
| (B) Limits for General Population/ Uncontrolled Exposures |                               |                               |                                     |                        |
| 300-1500                                                  | --                            | --                            | F/1500                              | 6                      |
| 1500-100,000                                              | --                            | --                            | 1                                   | 30                     |

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance  $r$  where the MPE limit is reached.

## 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

## 1.3. Test Result of RF Exposure Evaluation

|           |   |                        |
|-----------|---|------------------------|
| Product   | : | Wireless Access point  |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6                   |

### Antenna Information:

#### 2.4G:

|                                     |                                     |                   |                                     |                                     |           |      |                           |           |      |
|-------------------------------------|-------------------------------------|-------------------|-------------------------------------|-------------------------------------|-----------|------|---------------------------|-----------|------|
| Model No.                           | N/A                                 |                   |                                     |                                     |           |      |                           |           |      |
| Antenna manufacturer                | N/A                                 |                   |                                     |                                     |           |      |                           |           |      |
| Antenna Delivery                    | <input checked="" type="checkbox"/> | 1*TX+1*RX         |                                     | <input checked="" type="checkbox"/> | 2*TX+2*RX |      | <input type="checkbox"/>  | 3*TX+3*RX |      |
| Antenna technology                  | <input checked="" type="checkbox"/> | SISO              |                                     |                                     |           |      |                           |           |      |
|                                     | <input checked="" type="checkbox"/> | MIMO              | <input type="checkbox"/>            | Basic                               |           |      |                           |           |      |
|                                     |                                     |                   | <input checked="" type="checkbox"/> | CDD                                 |           |      |                           |           |      |
|                                     |                                     |                   | <input type="checkbox"/>            | Sectorized                          |           |      |                           |           |      |
|                                     |                                     |                   | <input checked="" type="checkbox"/> | Beam-forming                        |           |      |                           |           |      |
| Antenna Type                        | <input checked="" type="checkbox"/> | External          | <input checked="" type="checkbox"/> | Dipole                              |           |      |                           |           |      |
|                                     |                                     |                   | <input type="checkbox"/>            | Sectorized                          |           |      |                           |           |      |
|                                     | <input type="checkbox"/>            | Internal          | <input type="checkbox"/>            | PIFA                                |           |      |                           |           |      |
|                                     |                                     |                   | <input type="checkbox"/>            | PCB                                 |           |      |                           |           |      |
|                                     |                                     |                   | <input type="checkbox"/>            | Ceramic Chip Antenna                |           |      |                           |           |      |
|                                     |                                     |                   | <input type="checkbox"/>            | Metal plate type F antenna          |           |      |                           |           |      |
|                                     | Antenna Technology                  |                   | Ant Gain<br>(dBi)                   |                                     |           |      | Directional Gain<br>(dBi) |           |      |
| For Power                           |                                     |                   |                                     |                                     |           |      | For PSD                   |           |      |
| <input checked="" type="checkbox"/> |                                     |                   | CDD                                 | Ant1:4    Ant2: 4                   |           |      |                           | 4         | 7.01 |
| <input checked="" type="checkbox"/> | Beam-forming                        | Ant1:4    Ant2: 4 |                                     |                                     |           | 7.01 | 7.01                      |           |      |

**5G:**

|                                                  |                                               |                                                                            |                                    |         |
|--------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------|------------------------------------|---------|
| Antenna Model No.                                | N/A                                           |                                                                            |                                    |         |
| Antenna Manufacturer                             | N/A                                           |                                                                            |                                    |         |
| Antenna Delivery                                 | <input checked="" type="checkbox"/> 1*TX+1*RX | <input checked="" type="checkbox"/> 2*TX+2*RX                              | <input type="checkbox"/> 3*TX+4*RX |         |
| Antenna Technology                               | <input checked="" type="checkbox"/> SISO      |                                                                            |                                    |         |
|                                                  | <input checked="" type="checkbox"/> MIMO      | <input type="checkbox"/> Basic methodology                                 |                                    |         |
|                                                  |                                               | <input type="checkbox"/> Sectorized antenna systems                        |                                    |         |
|                                                  |                                               | <input type="checkbox"/> Cross-polarized antennas                          |                                    |         |
|                                                  |                                               | <input type="checkbox"/> Unequal antenna gains, with equal transmit powers |                                    |         |
|                                                  |                                               | <input type="checkbox"/> Spatial Multiplexing                              |                                    |         |
|                                                  |                                               | <input checked="" type="checkbox"/> Cyclic Delay Diversity (CDD)           |                                    |         |
| Antenna Type                                     | Dipole Antenna                                |                                                                            |                                    |         |
| Antenna Technology                               | Ant Gain (dBi)                                |                                                                            | Directional Gain (dBi)             |         |
|                                                  |                                               |                                                                            | For Power                          | For PSD |
| <input checked="" type="checkbox"/> CDD          | Ant1:4 Ant2: 4                                |                                                                            | 4                                  | 7.01    |
| <input checked="" type="checkbox"/> Beam-forming | Ant1:4 Ant2: 4                                |                                                                            | 7.01                               | 7.01    |

- **Power Density**

**Standalone modes**

| Test Mode                          | Frequency Band (MHz)                      | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm <sup>2</sup> ) | Power Density Limit at R = 20 cm (mW/cm <sup>2</sup> ) |
|------------------------------------|-------------------------------------------|---------------------------------------|------------------------|--------------------------------------------------|--------------------------------------------------------|
| BLE                                | 2400 ~ 2483.5                             | 4.84                                  | 3.96                   | 0.001                                            | 0.54                                                   |
| 802.11b/g/n(20MHz) with SISO       | 2412 ~ 2462                               | 18.41                                 | 4                      | 0.035                                            | 1.0                                                    |
| 802.11b/g/n(20MHz) with CDD        | 2412 ~ 2462                               | 20.88                                 | 4                      | 0.061                                            | 1.0                                                    |
| 802.11n(20MHz) with Beam-forming   | 2412 ~ 2462                               | 20.20                                 | 7.01                   | 0.105                                            | 1.0                                                    |
| 802.11a/n/ac (20MHz) with SISO     | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 18.36                                 | 4                      | 0.034                                            | 1.0                                                    |
| 802.11n/ac (40MHz) with SISO       | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 18.76                                 | 4                      | 0.038                                            | 1.0                                                    |
| 802.11ac(80MHz) with SISO          | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 14.17                                 | 4                      | 0.013                                            | 1.0                                                    |
| 802.11a/n/ac (20MHz) with CDD      | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 21.44                                 | 4                      | 0.070                                            | 1.0                                                    |
| 802.11n/ac (40MHz) with CDD        | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 20.54                                 | 4                      | 0.057                                            | 1.0                                                    |
| 802.11ac(80MHz) with CDD           | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 16.50                                 | 4                      | 0.022                                            | 1.0                                                    |
| 802.11n/ac(20MHz) with Beamforming | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 20.45                                 | 7.01                   | 0.111                                            | 1.0                                                    |
| 802.11n/ac(40MHz) with Beamforming | 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 20.34                                 | 7.01                   | 0.108                                            | 1.0                                                    |

|                                     |             |       |      |       |     |
|-------------------------------------|-------------|-------|------|-------|-----|
| 802.11ac(80MHz)<br>with Beamforming | 5150 ~ 5350 | 16.26 | 7.01 | 0.042 | 1.0 |
|                                     | 5470 ~ 5725 |       |      |       |     |
|                                     | 5725 ~ 5850 |       |      |       |     |

**Simultaneous transmission:**

| Frequency Band<br>(MHz)                   | Maximum Output<br>Power to<br>Antenna (dBm) | Directional Gain<br>(dBi) | Power Density at<br>R = 20 cm<br>(mW/cm <sup>2</sup> ) | Power Density<br>Limit at R = 20 cm<br>(mW/cm <sup>2</sup> ) |
|-------------------------------------------|---------------------------------------------|---------------------------|--------------------------------------------------------|--------------------------------------------------------------|
| 2400 ~ 2483.5                             | 4.84                                        | 3.96                      | 0.001                                                  | 0.54                                                         |
| 2412 ~ 2462                               | 20.20                                       | 7.01                      | 0.105                                                  | 1.0                                                          |
| 5150 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 20.45                                       | 7.01                      | 0.111                                                  | 1.0                                                          |
| Simultaneous transmission power density   |                                             |                           | 0.217                                                  | 0.54                                                         |

Note: The simultaneous transmission power density is 0.217 mW/cm<sup>2</sup> for Wireless Access Point without any other radio equipment.

\_\_\_\_\_ The End \_\_\_\_\_