# RF Exposure Report

|  |  |
|---|---|
| **Report No.:** | SA170731C08A |
| **FCC ID:** | QXO-AP3917I |
| **Test Model:** | AP3917i |
| **Series Model:** | AP7662i |
| **Received Date:** | Jul. 31, 2017 |
| **Test Date:** | Aug. 30 ~ Sep. 18, 2017 |
| **Issued Date:** | Oct. 02, 2017 |
| **Applicant:** | Extreme Networks, Inc. |
| **Address:** | 6480 VIA DEL ORO SAN JOSE CA 95119 USA |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C. |
| **Test Location:** | No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.) |

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## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| SA170731C08A | Original release. | Oct. 02, 2017 |

## 1    Certificate of Conformity

|  |  |
|---|---|
| **Product:** | Wireless 802.11 a/ac+b/g/n Access Point |
| **Brand:** | Extreme Networks |
| **Test Model:** | AP3917i |
| **Series Model:** | AP7662i |
| **Sample Status:** | Engineering sample |
| **Applicant:** | Extreme Networks, Inc. |
| **Test Date:** | Aug. 30 ~ Sep. 18, 2017 |
| **Standards:** | FCC Part 2 (Section 2.1091) |
| | KDB 447498 D01 General RF Exposure Guidance v06 |
| | 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:** _____ Oct. 02, 2017 _____

Polly Chien / Specialist

**Approved by :** _____ , **Date:** _____ Oct. 02, 2017 _____

Ken Liu / Senior 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**.

## 3  Calculation Result of Maximum Conducted Power

| Function | Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm$^2$) | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|---|
| WLAN | CDD Mode | | | | | |
| | 2412-2462 | 27.15 | 4.06 | 20 | **0.263** | 1 |
| | Outdoor Access Point Mode | | | | | |
| | 5180-5240 | 15.37 | 6.18 | 20 | 0.028 | 1 |
| | Indoor Access Point Mode | | | | | |
| | 5180-5240 | 26.06 | 6.18 | 20 | 0.333 | 1 |
| | Outdoor + Indoor Access Point Mode | | | | | |
| | 5260-5320 | 23.36 | 6.18 | 20 | 0.179 | 1 |
| | 5500-5720 | 23.53 | 6.18 | 20 | 0.186 | 1 |
| | 5745-5825 | 26.38 | 6.18 | 20 | **0.359** | 1 |
| | Beamforming Mode | | | | | |
| | 2412-2462 | 26.97 | 4.06 | 20 | 0.252 | 1 |
| | Outdoor Access Point Mode | | | | | |
| | 5180-5240 | 15.31 | 6.18 | 20 | 0.028 | 1 |
| | Indoor Access Point Mode | | | | | |
| | 5180-5240 | 26.06 | 6.18 | 20 | 0.333 | 1 |
| | Outdoor + Indoor Access Point Mode | | | | | |
| | 5260-5320 | 23.36 | 6.18 | 20 | 0.179 | 1 |
| | 5500-5720 | 23.53 | 6.18 | 20 | 0.186 | 1 |
| | 5745-5825 | 26.38 | 6.18 | 20 | 0.359 | 1 |
| BT LE | 2402-2480 | 3.70 | 3.53 | 20 | **0.001** | 1 |
| Zigbee | 2405-2480 | 3.70 | 3.53 | 20 | **0.001** | 1 |

Note:
1. Antenna was cross-polarized antenna.
2. 2.4GHz: max. gain = 4.06dBi
   5GHz: max. gain = 6.18dBi
3. BT LE & Zigbee: Ant. gain = 3.53dBi.

| Function | Frequency Band (MHz) | Conducted Output Power | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm$^2$) | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|---|
| 4.9GHz | 4942.5-4987.5 | 21.56 | 6.18 | 20 | 0.118 | 1 |

* max. gain = 6.18dBi

| Frequency Band | Max Power (dBm) | | | Total Power (dBm) | Power Limit (dBm) |
| --- | --- | --- | --- | --- | --- |
| | WLAN | BT LE | Zigbee | | |
| 2.4GHz | 27.15 | 3.70 | - | 27.17 | 30 |
| 2.4GHz | 27.15 | - | 3.70 | 27.17 | 30 |

**Conclusion:**

2.4GHz & 4.9GHz/5GHz & BT LE or 2.4GHz & 4.9GHz/5GHz & Zigbee technology can transmit at same time.

BT LE and Zigbee cannot transmit simultaneously.

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4GHz + WLAN 5GHz + BT LE = 0.263 + 0.359 + 0.001 = 0.623
2. WLAN 2.4GHz + WLAN 5GHz + Zigbee = 0.263 + 0.359 + 0.001 = 0.623
3. WLAN 2.4GHz + WLAN 4.9GHz + BT LE = 0.263 + 0.118 + 0.001 = 0.382
4. WLAN 2.4GHz + WLAN 4.9GHz + Zigbee = 0.263 + 0.118 + 0.001 = 0.382

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

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