



# NCC RADIO EXPOSURE TEST REPORT

Equipment : 802.11 a/b/g/n Module  
Brand Name : Extreme Networks  
Model Name : KHAP-800  
Applicant : 香港商極進網路有限公司台灣分公司  
臺北市松山區復勢里南京東路 4 段 126 號 5 樓  
Manufacturer : Extreme Networks, Inc.  
6480 Via Del Oro, San Jose, CA 95119  
Standard : NCC LP0002 (Jan. 10, 2018) Section 5.20 (5.20.2)

The product was received on Jun. 16, 2017, and testing was started from May 26, 2018 and completed on Jun. 05, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in NCC LP0002 (Jan. 10, 2018) Section 5.20 (5.20.2) and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

  
Approved by: Cliff Chang

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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Report Template No.: CB Ver1.0



## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items          | Result (PASS/FAIL) | Remark |
|---------------|-----------------|---------------------|--------------------|--------|
| 2             | -               | Exposure evaluation | PASS               | -      |

**Reviewed by: Cliff Chang**

**Report Producer: Viola Huang**



# 1 General Description

## 1.1 EUT General Information

| RF General Information |                        |                           |                                                                                 |
|------------------------|------------------------|---------------------------|---------------------------------------------------------------------------------|
| Evaluation Mode        | Frequency Range (MHz)  | Operating Frequency (MHz) | Modulation Type                                                                 |
| 2.4GHz WLAN            | 2400-2483.5            | 2412-2462                 | 802.11b: DSSS (DBPSK, DQPSK, CCK)<br>802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) |
| 5GHz WLAN              | 5150-5250<br>5725-5850 | 5180-5240<br>5745-5825    | 802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)                                      |

## 1.2 Testing Location

| Testing Location                    |        |                                                                                                                               |
|-------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/>            | HWA YA | ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL : 886-3-327-3456 FAX : 886-3-327-0973   |
| <input checked="" type="checkbox"/> | JHUBEI | ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.<br>TEL : 886-3-656-9065 FAX : 886-3-656-9085 |

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|------------------------------------------|------------------------------------------------------------------|
| 0.3-3.0               | 614                               | 1.63                              | *100                                     | 6                                                                |
| 3-30                  | 1842 / f                          | 4.89 / f                          | *900 / f <sup>2</sup>                    | 6                                                                |
| 30-300                | 61.4                              | 0.163                             | 1.0                                      | 6                                                                |
| 300-1500              |                                   |                                   | f/300                                    | 6                                                                |
| 1500-100,000          |                                   |                                   | 5.0                                      | 6                                                                |

(B) Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|------------------------------------------|------------------------------------------------------------------|
| 0.3-3.0               | 614                               | 1.63                              | *100                                     | 30                                                               |
| 3-30                  | 1842/f                            | 4.89/f                            | *180/f <sup>2</sup>                      | 30                                                               |
| 30-300                | 27.5                              | 0.073                             | 1.0                                      | 30                                                               |
| 300-1500              |                                   |                                   | f/1500                                   | 30                                                               |
| 1500-100,000          |                                   |                                   | 1.0                                      | 30                                                               |

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



## 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

| Mode     | DG<br>(dBi) | Power<br>(dBm) | EIRP<br>(dBm) | Tolerance<br>(dB) | Tune-up<br>EIRP<br>(dBm) | Tune-up<br>EIRP<br>(W) | Distance<br>(cm) | S<br>(mW/cm <sup>2</sup> ) | S Limit<br>(mW/cm <sup>2</sup> ) |
|----------|-------------|----------------|---------------|-------------------|--------------------------|------------------------|------------------|----------------------------|----------------------------------|
| 2.4G;G1D | 8.60        | 25.53          | 34.13         | 0.50              | 34.63                    | 2.90402                | 20               | 0.57772                    | 1.00000                          |
| 5.2G;D1D | 7.00        | 25.06          | 32.06         | 0.50              | 32.56                    | 1.80302                | 20               | 0.35870                    | 1.00000                          |
| 5.8G;D1D | 7.00        | 26.36          | 33.36         | 0.50              | 33.86                    | 2.43220                | 20               | 0.48387                    | 1.00000                          |

————THE END————