

## RF Exposure Report

**Report No.:** SA170508D01

**FCC ID:** 2ALJ3AP27X

**Test Model:** AP271

**Received Date:** May 8, 2017

**Test Date:** May 9 ~ Sep. 20, 2017

**Issued Date:** Nov. 16, 2017

**Applicant:** HAN Networks Co., Ltd.

**Address:** 5/F, Building 37, No.8 Dongbeiwang West Road, HaiDian District, Beijing, China

**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.)

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### Release Control Record

| Issue No.   | Description       | Date Issued   |
|-------------|-------------------|---------------|
| SA170508D01 | Original release. | Nov. 16, 2017 |

## 1 Certificate of Conformity

**Product:** HAN Access Point

**Brand:** HAN

**Test Model:** AP271

**Sample Status:** Engineering sample

**Applicant:** HAN Networks Co., Ltd.

**Test Date:** May 9 ~ Sep. 20, 2017

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 :** Annie Chang , **Date:** Nov. 16, 2017  
Annie Chang / Senior Specialist

**Approved by :** Rex Lai , **Date:** Nov. 16, 2017  
Rex Lai / Assistant 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 <sup>2</sup> ) | Average Time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| Limits For General Population / Uncontrolled Exposure |                               |                               |                                     |                        |
| 0.3-1.34  | 614                           | 1.63                          | (100)*                              | 30                     |
| 1.34-30   | 824/f                         | 2.19/f                        | (180/f <sup>2</sup> )*              | 30                     |
| 30-300  | 27.5                          | 0.073                         | 0.2                                 | 30                     |
| 300-1500  | ...                           | ...                           | f/1500                              | 30                     |
| 1500-100,000  | ...                           | ...                           | 1.0                                 | 30                     |

f = Frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

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 31cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 Calculation Result Of Maximum Conducted Power

| Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412-2462            | 27.49           | 11.32              | 31            | 0.6296                              | 1                           |
| 5180-5240            | 13.87           | 9.98               | 31            | 0.0201                              | 1                           |
| 5745-5825            | 26.46           | 9.44               | 31            | 0.3222                              | 1                           |

**NOTE:**

2.4GHz Directional gain = 11.32dBi

5.180-5.240GHz Directional gain = 9.98dBi

5.745-5.825GHz Directional gain = 9.44dBi

The directional antenna gain information is declared by manufacturer and more detailed features description please refer to operation description of antenna specifications exhibit.

**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

WLAN 2.4GHz + WLAN 5GHz = 0.6296 + 0.3222 = 0.9518

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

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