

## RF Exposure Report

**Report No.:** SA170508D01A

**FCC ID:** 2ALJ3AP27X

**Test Model:** AP271

**Received Date:** May 8, 2017

**Test Date:** May 12 ~ Oct. 12, 2017

**Issued Date:** Oct. 17, 2017

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

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**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
SA170508D01A	Original release.	Oct. 17, 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 12 ~ Oct. 12, 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.

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Annie Chang / Senior Specialist

**Approved by :** Rex Lai , **Date:** Oct. 17, 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				
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<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 35cm 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 (Original Approved)	27.49	11.32	31	0.6296	1
5180-5240 (Original Approved)	13.87	9.98	31	0.0201	1
5260-5320	15.91	9.44	31	0.0284	1
5500-5700	22.87	9.44	31	0.1410	1
5745-5825 (Original Approved)	26.46	9.44	31	0.3222	1

**NOTE:**

2.4GHz Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 4] = 11.32\text{dBi}$

5.0GHz Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 4] = 9.98\text{dBi}$  (For 5180-5240MHz)

5.0GHz Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 4] = 9.44\text{dBi}$  (For 5260-5320MHz, 5500-5700MHz, 5745-5825MHz)

The Max Power = Max tune up power

**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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