

## RF Exposure Report

**Report No.:** SA150427C31

**FCC ID:** TVE-120512

**Test Model:** PCE4302AN

**Series Model:** PCE4302AN-xxxxxx (where "x" can be used as "A-Z", or "-0-9", or "-", or blank for software changes or marketing purposes only)

**Received Date:** Apr. 27, 2015

**Test Date:** May 10 ~ May 29, 2015

**Issued Date:** Jun. 12, 2015

**Applicant:** Fortinet Inc.

**Address:** 899 Kifer Road Sunnyvale, CA 94086 USA

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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### Release Control Record

Issue No.	Description	Date Issued
SA150427C31	Original release	Jun. 12, 2015

## 1 Certificate of Conformity

**Product:** 802.11 ac 2x2 Module

**Brand:** Fortinet Inc.

**Test Model:** PCE4302AN

**Series Model:** PCE4302AN-xxxxxx (where "x" can be used as "A-Z", or "-0-9", or "-", or blank for software changes or marketing purposes only)

**Sample Status:** Engineering sample

**Applicant:** Fortinet Inc.

**Test Date:** May 10 ~ May 29, 2015

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

KDB 447498 D03

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 :** Celine Chou , **Date:** Jun. 12, 2015  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Jun. 12, 2015  
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 <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

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

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

### 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

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	29.20	5.52	20	0.590	1
5180-5240	23.92	7.64	20	0.285	1
5745-5825	17.01	7.64	20	0.058	1

Note:

2.4GHz: Directional gain =  $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2/2] = 5.52 \text{ dBi}$

5GHz: Directional gain =  $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2/2] = 7.64 \text{ dBi}$

#### 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 = 0.590 + 0.285 = 0.875

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

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