

RF Exposure Report

Report No.: SA150716C07E

FCC ID: KNYPRW5000AA

Test Model: WP201

Received Date: Aug. 27, 2015

Test Date: Sep. 04 ~ Sep. 18, 2015

Issued Date: Oct. 02, 2015

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

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Release Control Record

Issue No.	Description	Date Issued
SA150716C07E	Original release	Oct. 02, 2015

1 Certificate of Conformity

Product: Wireless 802.11ac/b/g/n access point

Brand: Freewave

Test Model: WP201

Sample Status: Engineering Sample

Applicant: FreeWave Technologies, Inc.

Test Date: Sep. 04 ~ Sep. 18, 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.

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Approved by : Ken Liu , **Date:** Oct. 02, 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 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 21cm 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 ²)	Limit (mW/cm ²)
2412-2462	24.71	10.18	21	0.556	1
5180-5240	23.13	2.44	21	0.065	1
5745-5825	22.40	10.80	21	0.377	1

Note:

2412 ~ 2462MHz: Directional gain = 5.41dBi + 10log(3) = 10.18dBi

5180 ~ 5240MHz: Directional gain = -2.33dBi + 10log(3) = 2.44dBi

5745 ~ 5825MHz: Directional gain = 6.03dBi + 10log(3) = 10.80dBi

CONCLUSION:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$WLAN\ 2.4G + WLAN\ 5.0G = 0.556 + 0.377 = 0.933$$

Therefore, the maximum calculation of this situation is 0.933, which is less than the "1" limit.

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