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# RF EXPOSURE REPORT

**REPORT NO.:** SA140626C27

**MODEL NO.:** EPG5000

**FCC ID:** A8JEPG5000

**RECEIVED:** Jun. 26, 2014

**TESTED:** Jul. 04 ~ Jul. 30, 2014

**ISSUED:** Aug. 08, 2014

**APPLICANT:** EnGenius Technologies

**ADDRESS:** 1580 Scenic Avenue, Costa Mesa, CA92626

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

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140626C27	Original release	Aug. 08, 2014

## 1. CERTIFICATION

**PRODUCT:** IoT Gateway  
**MODEL NO.:** EPG5000  
**BRAND:** EnGenius  
**APPLICANT:** EnGenius Technologies  
**TESTED:** Jul. 04 ~ Jul. 30, 2014  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03  
IEEE C95.1

The above equipment (model: EPG5000) 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 :** Ivy Lin , **DATE :** Aug. 08, 2014  
Ivy Lin / Specialist

**APPROVED BY :** Ken Liu , **DATE :** Aug. 08, 2014  
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)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE CALCULATION FORMULA

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

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 29cm 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	29.21	8.77	29	0.594	1
5180-5240	26.24	9.77	29	0.378	1
5745-5825	25.38	9.77	29	0.310	1

**NOTE:**

**2412-2462MHz:** Directional gain = 4dBi + 10log(3) = 8.77dBi

**5180-5240MHz:** Directional gain = 5dBi + 10log(3) = 9.77dBi

**5745-5825MHz:** Directional gain = 5dBi + 10log(3) = 9.77dBi

**CONCLUSION:**

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.594 + 0.378 = 0.972

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