

# RF EXPOSURE REPORT

**REPORT NO.:** SA130508C34B

**MODEL NO.:** C5

**FCC ID:** TE7C5

**RECEIVED:** May 08, 2013

**TESTED:** May 14 ~ May 21, 2013

**ISSUED:** Jun. 12, 2014

**APPLICANT:** TP-LINK TECHNOLOGIES CO., LTD.

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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.    | REASON FOR CHANGE | DATE ISSUED   |
|--------------|-------------------|---------------|
| SA130508C34B | Original release  | Jun. 12, 2014 |



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## 1. CERTIFICATION

**PRODUCT:** AC1200 Wireless Dual Band Gigabit Router  
**MODEL NO.:** C5  
**BRAND:** TP-LINK  
**APPLICANT:** TP-LINK TECHNOLOGIES CO., LTD.  
**TESTED:** May 14 ~ May 21, 2013  
**TEST SAMPLE:** PROTOTYPE  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
FCC OET Bulletin 65, Supplement C (01-01)  
IEEE C95.1

The above equipment (model: C5) 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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Pettie Chen / Senior Specialist

**APPROVED BY :** Ken Liu, **DATE :** Jun. 12, 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) |
|-------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| 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

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

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 36cm 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            | 29.27           | 9.27               | 36            | 0.464                               | 1                           |
| 5180-5240            | 16.87           | 9.77               | 36            | 0.030                               | 1                           |
| 5745-5825            | 29.66           | 9.77               | 36            | 0.570                               | 1                           |

### NOTE:

2.4GHz: Directional gain = 4.5dBi + 10log(3) = 9.27dBi

5.0GHz: Directional gain = 5dBi + 10log(3) = 9.77dBi

### CONCLUSION:

Both of the 2.4 and 5GHz 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

1. WLAN 2.4G + WLAN 5.0G = 0.439 + 0.538 = 0.977

Therefore, the maximum calculation of this situation is 0.977, which is less than the "1" limit.