



RF EXPOSURE REPORT

REPORT NO.: SA131210C32
MODEL NO.: W7, W7R, W7C
FCC ID: SLY-W7XRC
RECEIVED: Dec. 10, 2013
TESTED: Feb. 14 ~ Mar. 18, 2014
ISSUED: Mar. 26, 2014

APPLICANT: Pakedge Device and Software Inc.

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

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|-------------|-------------------|---------------|
| SA131210C32 | Original release | Mar. 26, 2014 |



1. CERTIFICATION

PRODUCT: 802.11 abgn device

MODEL: W7, W7R, W7C

BRAND: Packedge

APPLICANT: Packedge Device and Software Inc.

TESTED: Feb. 14 ~ Mar. 18, 2014

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 2 (Section 2.1091)

FCC OET Bulletin 65, Supplement C (01-01)

IEEE C95.1

The above equipment (model: W7, W7R, W7C) 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: Wen Lin , **DATE:** Mar. 26, 2014
Wen Lin / Specialist

APPROVED BY: Ken Liu , **DATE:** Mar. 26, 2014
Ken Liu / 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

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

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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

Dipole Antenna:

| FREQUENCY BAND (MHz) | MAX POWER (dBm) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm ²) | LIMIT (mW/cm ²) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412 ~ 2462 | 26.38 | 6.59 | 20 | 0.394 | 1 |
| 5180 ~ 5240 | 16.95 | 7.01 | 20 | 0.050 | 1 |
| 5745 ~ 5825 | 24.73 | 7.84 | 20 | 0.360 | 1 |

NOTE:

2.4GHz Band: Directional gain = 3.58dBi + 10log(2) = 6.59dBi

5180 ~ 5240MHz: Directional gain = 4.0dBi + 10log(2) = 7.01dBi

5745 ~ 5825MHz: Directional gain = 4.83dBi + 10log(2) = 7.84dBi

PIFA Antenna:

| FREQUENCY BAND (MHz) | MAX POWER (dBm) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm ²) | LIMIT (mW/cm ²) |
|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2412 ~ 2462 | 26.38 | 7.46 | 20 | 0.482 | 1 |
| 5180 ~ 5240 | 16.95 | 6.46 | 20 | 0.044 | 1 |
| 5745 ~ 5825 | 24.73 | 6.86 | 20 | 0.287 | 1 |

NOTE:

2.4GHz Band: Directional gain = $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2 / N_{ANT}] = 7.46\text{dBi}$

5180 ~ 5240MHz: Directional gain = $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2 / N_{ANT}] = 6.46\text{dBi}$

5745 ~ 5825MHz: Directional gain = $10 \log[(10^{G^1/20} + 10^{G^2/20} + \dots + 10^{G^N/20})^2 / N_{ANT}] = 6.86\text{dBi}$

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

Dipole Antenna: WLAN 2.4G + WLAN 5.0G = 0.394 + 0.360 = 0.754

PIFA Antenna: WLAN 2.4G + WLAN 5.0G = 0.482 + 0.287 = 0.769

Therefore, the maximum calculation of this situation is 0.769, which is less than the "1" limit.

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