

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: Packedge Device and Software Inc.

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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
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.

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Ray 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 = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 7.46\text{dBi}$

5180 ~ 5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.46\text{dBi}$

5745 ~ 5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 6.86\text{dBi}$

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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