



FCC ID: 2AD9XPIRH  
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**IEEE C95.1**  
**KDB 447498 D03**  
**47 C.F.R. Part 1, Subpart I, Section 1.1310**  
**47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**Versa PIR**

**Model: PIR**

**Trade Name: versa**

*Issued to*

**Versa Wireless Inc.**  
103-19292 60th Ave. Surrey, BC Canada V3S 3M2

*Issued By*

**Compliance Certification Services Inc.**  
No.11, Wugong 6th Rd., Wugu Dist.,  
New Taipei City 24891, Taiwan. (R.O.C.)

**Issued Date: May 29, 2019**

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.  
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## **REVISION HISTORY**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	April 25, 2019	Initial Issue	ALL	Angel Cheng
01	May 29, 2019	See the following note rev.01	ALL	Angel Cheng

**Note:**

- ※ Rev.01      Issue Date:      May 29, 2019  
Update Limit & Average output power.



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## 1. TEST RESULT CERTIFICATION

### We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Reporter:

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Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.

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Angel Cheng  
Report coordinator  
Compliance Certification Services Inc.

## 2. LIMIT

According to §1.1310 (e) (B) Limits for General Population/Uncontrolled Exposure, the frequency range (MHz) for 300-1,500 of Power density(mW/cm<sup>2</sup>) should be **f/1500**.

## 3. EUT SPECIFICATION

EUT	Versa PIR		
Model	PIR		
Trade Name	<b>versa</b>		
Model Discrepancy	N/A		
Frequency band (Operating)	<input type="checkbox"/> 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz <input checked="" type="checkbox"/> Others (345MHz)		
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others		
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=0.23mW/cm <sup>2</sup> )		
Antenna Specification	Antenna Gain : -7.30 dBi (Numeric gain: 0.19)		
Maximum Average output power	345MHz	-20.80 dBm	(0.008 mW)
Maximum Tune up Power	345MHz	-20.50 dBm	(0.009 mW)
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A		
Frequency band (Operating)	<input type="checkbox"/> 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz <input checked="" type="checkbox"/> Others (345MHz)		

## 4. TEST RESULTS

**No non-compliance noted.**

### Calculation

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{377}$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P / 1000) \times G}{377 \times (d / 100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>



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## 5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using  $d = 20$  cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where  $P = \text{Power in mW}$

$G = \text{Numeric antenna gain}$

$S = \text{Power density in mW / cm}^2$

IEEE 802.11b Mode :

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm2)	Result
1	345	0.009	0.19	20	0.0000003	0.23	Pass