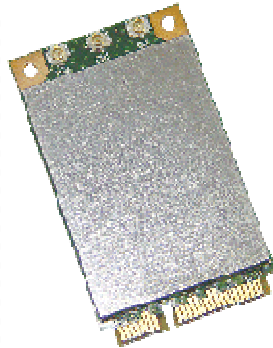




# WPEA-127NI

## Feature

- Reference Design: XB114
- Chipset: Atheros AR9390-AL1B
- Interface: Mini PCI Express
- Industrial-Grade Temperature: -40 ~ 80°C
- Wireless connection up to 450Mbps
- RF 3T3R
- Output Power up to 18dBm
- Enhanced wireless security: 64/128-bits WEP, WPA, WPA2
- Windows XP/ Vista, Win 7, Linux, Android by request



## 802.11a/b/g/n Industrial-Grade Mini Card

*Reference Design: XB114, Atheros AR9390-AL1B  
Industrial-Grade Temperature -40 ~ 80°C*

### Reliable High-Speed Industrial Embedded Application

SparkLAN WPEA-127NI is a high-speed 802.11n 3T3R Mini PCI module based on Atheros XB114 Reference Design (AR9390-AL1B chipset), which delivers up to 450Mbps data rate. It supports the high transmission data rate and reliable performance of 3 x 3 radios which are ideal for streaming multimedia applications. It provides 3 stream MIMO configurations, which is easy to implement to integrate into AP, Client Bridge and embedded system.

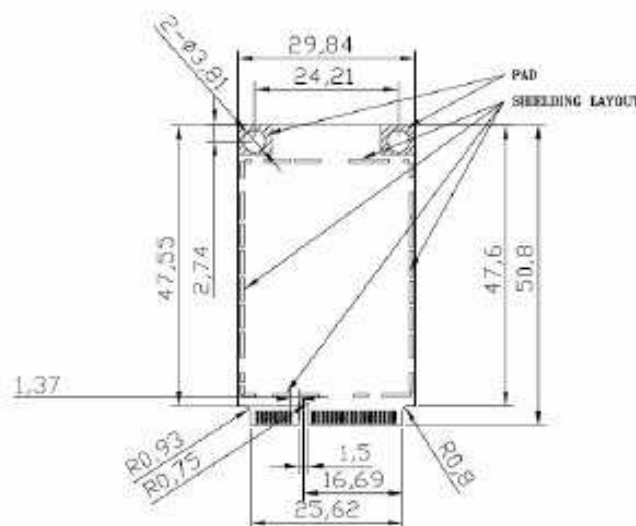
### Industrial-Grade Temperature Range

WPEA-127NI is able to function under sever weather condition (-40 ~ 80°C), which is ideal for manufacturers to integrate with their devices that are designed for wide-temperature range.

## Application

- Networking Equipment
- Industrial Computers
- Automation
- Medical Device
- POS (Point-of-Sale) System
- Self-Service KIOSK
- Gaming Machine

### Mechanical Dimension (mm)

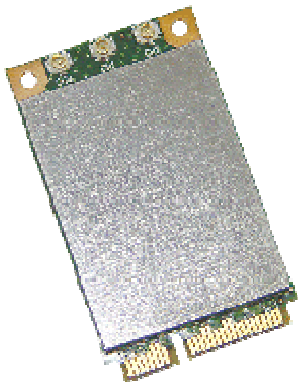




# WPEA-127NI

## Related Product

- WPEA-127N  
802.11a/b/g/n Mini Card



## Specifications

### Standard

802.11a/b/g/n

### Chipset

Mac/BB/RF      Atheros AR9390-AL1B

### Host Interface

Mini PCI Express

### Radio

Antenna      3 x U.FL connectors, 3T3R

Operating Frequency      11b/g/n ISM Band: 2.400~2.472GHz

11a ISM Band: 5.180GHz ~ 5.825GHz

802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

802.11b: DSSS (DBPSK, DQPSK, CCK)

802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

Output Power      92.0mW for 2412~2462MHz

120.8mW for 5745~5825 MHz

27.6mW for 5180~5240 MHz

51.8mW for 5260~5320 MHz

50.4mW for 5500~5700 MHz

802.11a: -76dBm ± 2dBm@54Mbps

802.11b: -90dBm ± 2dBm@11Mbps

802.11g: -76dBm ± 2dBm@54Mbps

802.11gn HT20: -74dBm ± 2dBm@ MCS7

802.11gn HT40: -70dBm ± 2dBm@ MCS7

802.11n HT20: -69dBm ± 2dBm@ MCS7

802.11n HT40: -68dBm ± 2dBm@ MCS7

### Power consumption

Continue TX      970mA

Continue RX      300mA

### Operating Voltage

DC 3.3V ± 5%

### Environmental

Temperature Range      -40 ~ 80°C (Operating)    -50~95°C (Storing)

Humidity  
(Non-Condensing)      5 ~ 90% (Operating)    5% ~ 95% (Storage)

### Physical Specification

Dimensions      50.8mm x 29.84mm x 3.3mm

Weight      ≤ 7g

### Software

Driver      Windows XP/ Vista, Win 7, Linux, Android by request

Security      64/128-bits WEP, WPA, WPA2

## Ordering Info

- WPEA-127NI  
802.11a/b/g/n Industrial-  
Grade Mini Card

## **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

**This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: RYK-WPEA127NI". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

**Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

**Industry Canada statement:**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

**Radiation Exposure Statement:**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

**Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

**This device is intended only for OEM integrators under the following conditions: (For module device use)**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

**Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)**

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
- 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

**IMPORTANT NOTE:**

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

**NOTE IMPORTANTE:**

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC:6158A-WPEA127NI".

**Plaque signalétique du produit final**

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 6158A-WPEA127NI".

**Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

## **Manuel d'information à l'utilisateur final**

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

### **Caution :**

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

### **Avertissement:**

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter (IC: 6158A-WPEA127NI / Model: WPEA-127NI) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.



Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio (IC: 6158A-WPEA127NI / Modèle: WPEA-127NI) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Approved antenna(s) list

Type	Gain
Dipole	For 2.4G: 3 dBi ; For 5G: 5 dBi