

WN6401F-IM

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Chapter 1 Introduction

1. Introduction

1.1 Product Features

- ◆ High speed for wireless LAN connection, up to 54 Mbps data rate.
- ◆ **Extended Range feature supported**
- ◆ Backward compatible to the existing IEEE 802.11b WLAN infrastructure.
- ◆ An user-friendly utility to configure SSID, security setup and site survey.
- ◆ Wireless data encryption using WEP 64, 128-bit encryption for security.
- ◆ Support for WPA and Wi-Fi, WPA2 upgradeable
- ◆ Built-in Hirose antenna connectors.
- ◆ Firmware upgrade-able by only changing driver.

1.2 Applications

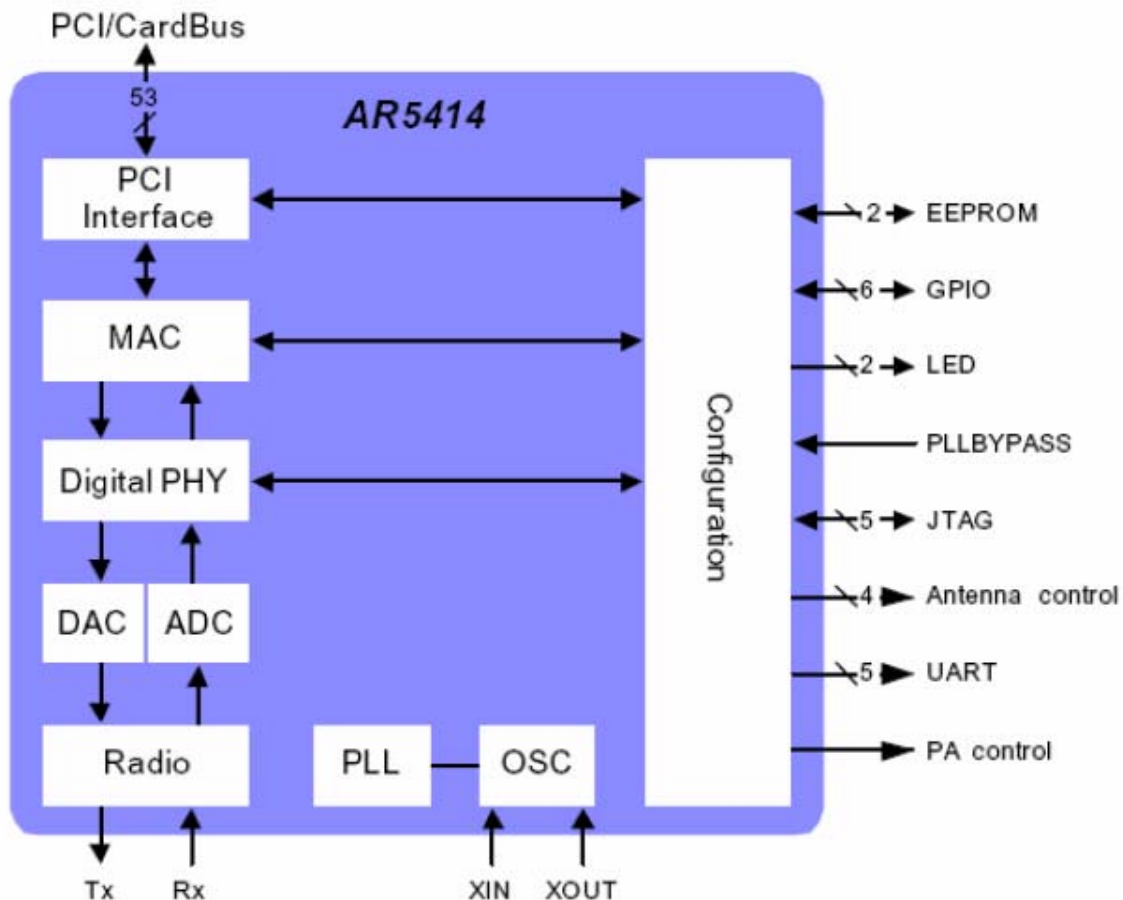
- ◆ Home networking for device sharing.
- ◆ Wireless multimedia.
- ◆ Wireless office for extension Ethernet range.
- ◆ Mobile networking for notebook PC, PDA, Web Pad or Wireless Gateway Built-in Application.

Chapter 2 Hardware

2.1 General Overview

- ◆ Power: 3.3V, DC input.
- ◆ Antenna connector: Two Hirose, FL-R-SMT (01) coaxial connectors.

2.2 Hardware Architecture



2.3 Main Chipset Information

2.3.1 AR5414: An IEEE 802.11g MAC + Baseband processor, AES Hardware accelerator, on-chip SRAM memory and MiniPCI/PCI bus interface. Radio-on-Chip (RoC). A zero-IF direct down conversion transceiver. a 2.4GHz power amplifier, 5GHz SiGe monolithic VCO.

Chapter 3 Software

3.1 Operating System Supported

- ◆ Windows 98SE, Windows ME, Windows 2000, Windows XP and Linux.

3.2 Security

- ◆ Wired Equivalent Privacy (WEP) supports 64, and 128 bit keys.
- ◆ Support WPA, WPA2 upgradeable

3.3 Configuration Utility

- ◆ A Utility to set SSID, WEP key and dynamically view configuration and receiving signal quality.
- ◆ Support worldwide country channel selection.

Chapter 4 Specifications

- ◆ Frequency Band:
 - 802.11a Radio: 5.15 ~ 5.85 GHz
 - 802.11g Radio: 2.4 GHz~2.497GHz
- ◆ Modulation TYPE: OFDM, CCK
- ◆ Security: Hardware 64/128-bit WEP/TKIP/AES-CCM/ 802.1x, WPA
- ◆ Operating Voltage: 3.0V ~ 3.6V
- ◆ Transmitted Power: *See Table 1*
- ◆ Rates/Sensitivity/Allowable Path Loss: *See the Table 2*
- ◆ Mechanical specification:
 - ◆ miniPCI Type 3B
- ◆ Regulatory compliance:
 - ◆ Power Limit: FCC 15.407
 - ◆ IC
 - ◆ ETSI
- ◆ Current consumption:
 - ◆ 11a: TX: 520mA Max; RX: 390mA Max; Power Saving: 20mA
 - ◆ 11g: TX: 540mA Max; RX: 350mA Max; Power Saving: 20mA
 - ◆ 11b: TX: 540mA Max; RX: 350mA Max; Power Saving: 20mA
- ◆ Operating Temperature: 0 ~ 50 °C ambient
- ◆ Storage Temperature: -20 ~ 75 °C ambient
- ◆ Humidity: 5 ~ 90% and must be non-condensing
- ◆ ESD: EN61000-4-2, which specifies 4kV contact and 8kV air discharge.

References

- ◆ IEEE 802.11a Standard Specification
- ◆ IEEE 802.11b Standard Specification
- ◆ IEEE 802.11g Standard Specification

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WARNING

This document is intended for **internal** use only. A Non-Disclosure Agreement (**NDA**) is required to release this document under any circumstances.

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.*

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.

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.

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.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

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

The antenna must be installed such that 20 cm is maintained between the antenna and users, and

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 (for example, digital device emissions, PC peripheral requirements, etc.). The host which integrates this module need to have regulator or similar circuit to provide stable 3.3VDC for this module.

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. The use of this product is limited to indoor while operating in 5.15~5.25GHz.*

Labeling Rule for OEM Integrator

The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: RAXWN6401F".