ZyXEL

AG-620

802.11a/b/g Wireless MiniPCI Card

User's Manual

Release 0.2

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 802.11a or 802.11b/g 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.).

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.

注意 ！

依據　低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用
　　　　　者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現
　　　　　有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
　　　　　前項合法通信，指依電信規定作業之無線電信。低功率射頻電機
　　　　　須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干
　　　　　擾。

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 TX FCC ID: I88AG620".

Manual Information That Must be Included

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 users manual of the end product which integrate this module.

The users manual for OEM integrators must include the following information in a prominent location " IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For all the model ship to USA market, OEM integrator shall limit the accessible channel to US channel 1 -11 only during the manufacturing process by special firmware setting which is not available to the end user.

About this manual

This User's Manual describes how to install and operate your 802.11a/g Wireless LAN Module. Please read this manual before you install the product.
This manual includes the following topics:

- Product description and features.
- Software installation procedure.

Table of Contents

Chapter 1 - Introduction

The AG-620, which is based on the ZyDAS solution ZD1212b, is an dual-band tri-mode 802.11a/b/g wireless LAN embedded Mini-PCI module for AP/ Router + AP. AG-620 will be a RF module of AP board. Additionally, provide new feature to existing ZyDAS based Wireless Router/AP products.

Features

- Embedded to any AP with Mini-PCI type Ⅲ -B slot.
- IEEE 802.11a/b/g compatible.
- Backward compatible with IEEE 802.11b standard.
- Wire-free access to networked resources from anywhere beyond the desktop.
- Delivers data rate up to 54 Mbps.
- 801.11a/g: Dynamically shifts between 54, 48, 36, 24, 18, 12, 9 and 6 Mbps network speed, based on signal strength, for maximum availability and reliability of connection.
- 802.11b: Dynamically shifts between 11M, 5.5M, 2M, and 1 Mbps network speed, based on signal strength, for maximum availability and reliability of connection.
- Uses 5.1/ 2.4GHz frequency band, which complies with worldwide requirement
- Ensures great security by providing the 64/128/256 Wired Equivalent Privacy (WEP) and WPA/PWA2.
- 802.11i standards support.
- WMM support.

What is Wireless LAN?

Wireless Local Area Network (WLAN) systems offer a great number of advantages over traditional wired systems. WLAN is flexible and easy to setup and manage. They are also more economical than wired LAN systems.
Using radio frequency (RF) technology, WLAN transmit and receive data through the air. WLAN combine data connectivity with user mobility. For example, users can roam from a conference room to their office without being disconnected from the LAN.

Using WLAN, users can conveniently access-shared information, and network administrators can configure and augment networks without installing or moving network cables.

WLAN technology provides users with many convenient and cost saving features:

· **Mobility:** WLAN provide LAN users with access to real-time information anywhere in their organization, providing service opportunities that are impossible with wired networks.

· **Ease of Installation:** Installing is easy for novice and expert users alike, eliminating the need to install network cables in walls and ceilings.

· **Scalability**: WLAN can be configured in a variety of topologies to adapt to specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users roaming over a broad area.

Wireless LAN Modes

Wireless LANs can be configured in one of two ways:

Ad-hoc Networking

Also known as a peer-to-peer network, an ad-hoc network is one that allows all workstations and computers in the network to act as servers to all other users on the network. Users on the network can share files, print to a shared printer, and access the Internet with a shared modem. However, with ad-hoc networking, users can only communicate with other wireless LAN computers that are in the wireless LAN workgroup, and are within range.

**Infrastructure
Networking**

Infrastructure networking differs from ad-hoc networking in that it includes an access point. Unlike the ad-hoc structure where users on the LAN contend the shared bandwidth, on an infrastructure network the access point can manage the bandwidth to maximize bandwidth utilization.

Additionally, the access point enables users on a wireless LAN to access an existing wired network, allowing wireless users to take advantage of the wired networks resources, such as Internet, email, file transfer, and printer sharing.

Infrastructure networking has the following advantages over ad-hoc networking:

· **Extended range:** each wireless LAN computer within the range of the access point can communicate with other wireless LAN computers within range of the access point.

· **Roaming:** the access point enables a wireless LAN computer to move through a building and still be connected to the LAN.

· **Wired to wireless LAN connectivity:** the access point bridges the gap between wireless LANs and their wired counterparts.

Notes on Wireless LAN Configuration

When configuring a wireless LAN (WLAN), be sure to note the following points:

· Optimize the performance of the WLAN by ensuring that the distance between access points is not too far. In most buildings, WLAN Adapters operate within a range of 100 ~ 300 feet, depending on the thickness and structure of the walls.

· Radio waves can pass through walls and glass but not metal. If there is interference in transmitting through a wall, it may be that the wall has reinforcing metal in its structure. Install another access point to circumvent this problem.

· Floors usually have metal girders and metal reinforcing struts that interfere

---

with WLAN transmission.

Chapter 2 – Driver Installation for Windows

* You have to install your hardware first before you begin to install the drivers.

Driver installation for Windows XP

Follow the steps below to install the MiniPCI Wireless LAN Card drivers for Windows XP.
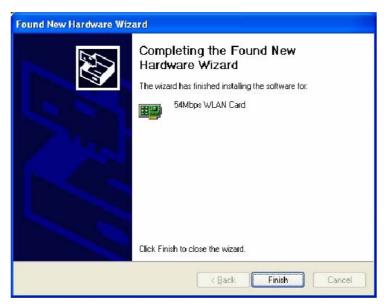
1. Insert the driver CD to your CD-ROM and turn off notebook.
2. Release the screws and open the miniPCI slot cover (It should located on the back of your notebook) carefully.
3. Insert the MiniPCI Wireless LAN Card to miniPCI slot of notebook securely. (Refer to Chapter 2 – Hardware installation.)
4. Turn on your notebook.
5. After Windows XP detects the miniPCI Wireless LAN Card, the *Found New Hardware Wizard* window appears. Select **Install the software automatically [Recommended]** and insert the driver CD-ROM into CD-ROM drive and click **Next** to continue.

6. Click **Continue Anyway** to continue the installation.

7. The Windows has finished installing software for the device. Click **Finish** to finish the installation

Then system will start to install Wireless utility automatically.