FCC ID: I88PRESTIGE316

Prestige 310;Esec312;Prestige 316

Broadband Sharing Gateway / Wireless LAN

User's Guide

Version 3.20

August, 2000

ZyXEL

TOTAL INTERNET ACCESS SOLUTION

Prestige 316

Broadband Sharing Gateway / Wireless LAN

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Federal Communications Commission (FCC) Interference Statement

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operations.

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 commercial environment. 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.

If this equipment does cause harmful interference to radio/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 or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the 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.

NOTICE 1

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTICE 2

Shielded RS-232C cables are required to be used to ensure compliance with FCC Part 15, and it is the responsibility of the user to provide and use shielded RS-232C cables.

Information for Canadian Users

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation and safety requirements. The Industry Canada does not guarantee that the equipment will operate to a user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly. The customer should be aware that the compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

For their own protection, users should ensure that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

NOTE

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the radio interference regulations of Industry Canada.

Preface

About Your Router

Congratulations on your purchase of the Prestige 316 Broadband Sharing Gateway.

Online Registration

Do not forget to register your Prestige (fast, easy online registration at www.zyxel.com for free future product updates and information.

The Prestige 316 is a dual Ethernet Broadband Sharing Gateway integrated with robust network management features that allows access to the Internet via Cable/DSL modem or broadband router. It is designed for:

- Home offices and small businesses with Cable, DSL and wireless modem via Ethernet port as Internet access media.
- Wireless LAN connectivity allows you to work anywhere in the coverage area.
- Multiple office/department connections via access devices.
- E-commerce/EDI applications.

Your Prestige 316 is easy to install and to configure.
The Prestige Web Configurator (PWC) is a web-based utility that allows you to access the Prestige's management settings through the Internet. All functions of the Prestige 316 are software configurable via the SMT (System Management Terminal) interface. The SMT is a menu-driven interface that you can access from a terminal emulator through the console port or over a telnet connection.

About This User's Manual

This manual is designed to guide you through the SMT configuration of your Prestige 316 for its various applications.

Structure of this Manual

This manual is structured as follows:

Part I. *Getting Started* (Chapters 1 to 3) is structured as a step-by-step guide to help you connect, install and setup your Prestige to operate on your network and access the Internet.

Part II. *Advanced Applications* (Chapters 4 to 6) describe the advanced applications of your Prestige, such as SUA (Single User Account), Remote Node Setup and IP Static Routes.

Part III. *Advanced Management* (Chapter 7 to 13) provides information on Prestige Filtering, System Information and Diagnosis, SNMP, Transferring Files, Call Scheduling and Telnet.

Part IV. *Troubleshooting* (Chapter 14), provides information about solving common problems as well as some Appendices, a Glossary and an Index.

Chapter 1
Getting to Know Your Prestige

This chapter introduces the main features and applications of the Prestige.

1.1 The Prestige 316 Broadband Sharing Gateway

The Prestige 316 is a dual Ethernet Broadband Sharing Gateway integrated with network management features designed for home offices and small businesses to access the Internet via Cable/DSL modem or broadband router. By integrating SUA capability, ZyXEL's Prestige 316 provides not only ease of installation and Internet access, but also a complete security solution to protect your Intranet and efficiently manage data traffic on your network. What's more, with the wireless LAN connectivity, users can work anywhere in the coverage area, enjoying the convenience and mobility.

1.2 Features of the Prestige 316

The following are the essential features of the Prestige 316.

Broadband Internet Access Sharing

One 10 Mbps Ethernet port for WAN access allows speeds of up to 10 Mbps full/half duplex data transfer capability for connecting to broadband cable or DSL modems.

IEEE 802.11b 11 Mbps Wireless LAN

The 11 Mbps wireless LAN provides mobility and a fast network environment for small and home offices. Users can connect to the local area network without any wiring efforts and enjoy reliable high-speed connectivity.

Packet Filtering

The Packet Filtering mechanism blocks unwanted traffic from entering/leaving your network.

PPPoE Support

PPPoE facilitates the interaction of a host with a broadband modem to achieve access to high-speed data networks via a familiar "dial-up networking" user interface.

PPTP Support

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks. PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet.

Dynamic DNS Support

With dynamic DNS support, you can have a static hostname alias for a dynamic IP address, allowing the host to be more easily accessible from various locations on the Internet.

Auto-negotiating 10/100 Mbps Ethernet

The LAN interface automatically detects if it is on a 10 or a 100 Mbps Ethernet, providing the SOHO and professional users a higher bandwidth.

SUA (Single User Account) / NAT (Network Address Translation)

SUA enables multiple users to share a single ISP account, thereby accessing the Internet for the cost of a single IP address.

DHCP (Dynamic Host Configuration Protocol)

The Prestige supports DHCP Server and Client (RFC-2131 and RFC-2132). The Prestige's DHCP server capability allows you to automatically assign TCP/IP settings to a workstation on your LAN. The Prestige's DHCP client capability allows it to get automatically its IP address from the ISP on the WAN.

Full Network Management

This feature allows you to access SMT (System Management Terminal) through the console port or telnet connection.

RoadRunner Support

In addition to standard cable modem services, the Prestige supports Time Warner's RoadRunner Service.

Time and Date Setting

This new feature (**Menu 24.10**) allows you to get the current time and date from an external server when you power up your Prestige. The real time is then displayed in the Prestige error logs. If you do not choose a time service protocol that your timeserver will send when the Prestige powers up you can enter the time manually but each time the system is booted, the time and date will be reset to **2000/1/1 0:0:0**.

Logging and Tracing

The Prestige has the following logging and tracing features:

- Built-in message logging and packet tracing.
- UNIX syslog facility support.

Upgrade Prestige Firmware via LAN

The firmware of the Prestige 316 can be upgraded via the LAN.

Embedded FTP and TFTP Servers

The Prestige's embedded FTP and TFTP Servers enable faster firmware upgrade as well as configuration file backup and restoration.

IP Alias

The ability to partition physical network into logical network over the same Ethernet interface is referred as IP Alias functionality.

1.3 Applications for Prestige 316

1.3.1 Broadband Internet Access via Cable or DSL Modem

A cable modem or DSL modem can connect to the Prestige 316 for broadband Internet access via Ethernet port on the modem. It not only provides high speed Internet access but secured internal network protection and management as well.

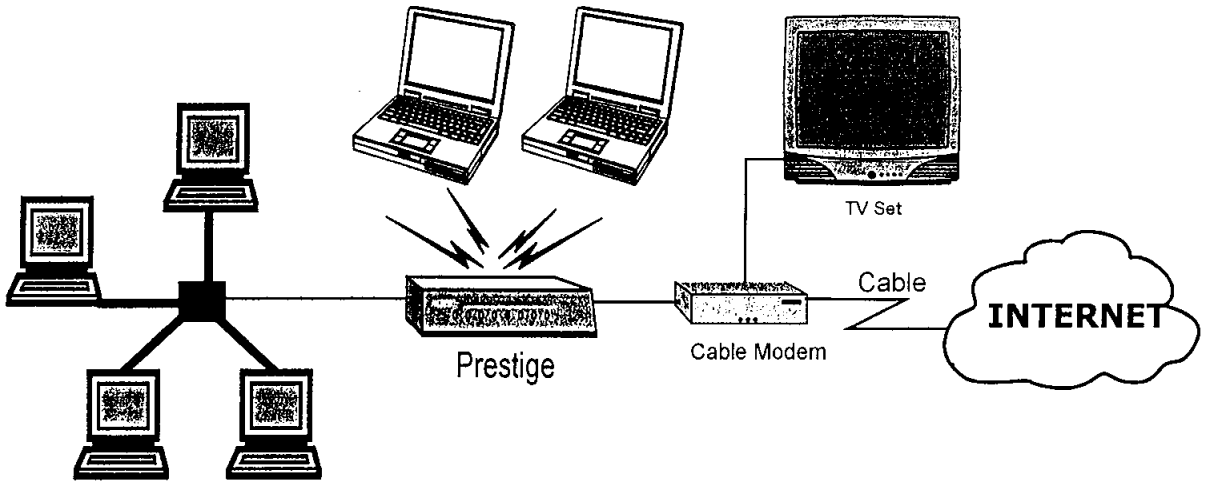

Figure 1-1 Internet Access via Cable with Wireless LAN Structure

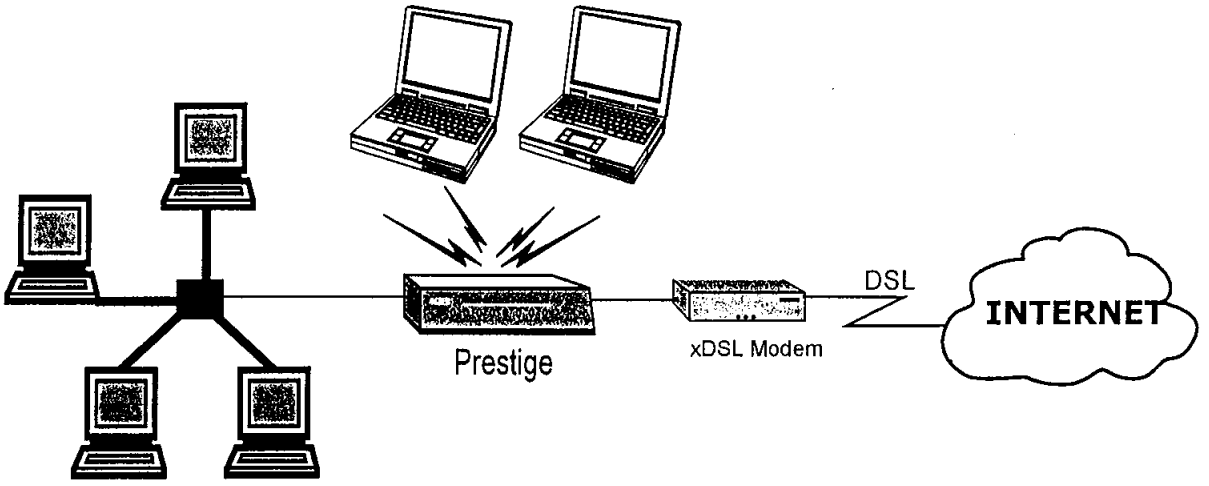

Figure 1-2 Internet Access via DSL with Wireless LAN Structure

Chapter 2
Hardware Installation and Initial Setup

This chapter shows you how to connect the hardware and perform the initial setup.

2.1 Front Panel LEDs and Back Panel Ports

2.1.1 Front Panel LEDs

The LEDs on the front panel indicate the operational status of the Prestige.

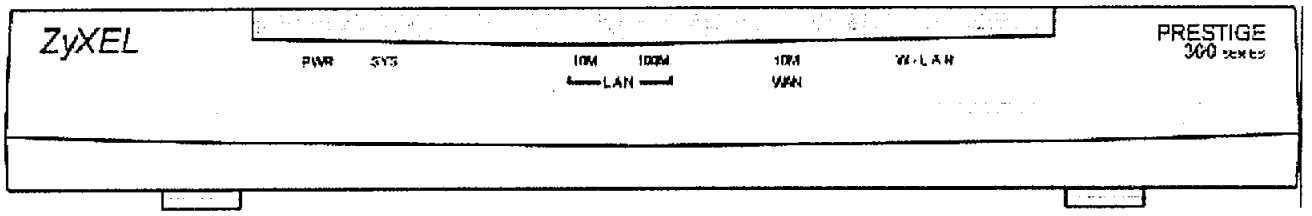

Figure 2-1 Front Panel

The following table describes the LED functions:

Table 2-1 LED Functions

LEDs	FUNCTION	INDICATOR STATUS	ACTIVE	DESCRIPTION
PWR	Power	Green	On	The power adapter is connected to the Prestige.
SYS	System		Off	The system is not ready or failed.
			On	The system is ready and running.
			Flashing	The system is rebooting.
10M LAN	LAN	Green	Off	The 10M LAN is not connected.
			On	The Prestige is connected to a 10 Mbps LAN.
			Flashing	The 10M LAN is sending/receiving packets.
100M LAN		Orange	Off	The 100M LAN is not connected.

LEDs	FUNCTION	INDICATOR STATUS	ACTIVE	DESCRIPTION
			On	The Prestige is connected to a 100 Mbps LAN.
			Flashing	The 100M LAN is sending/receiving packets.
10M WAN	WAN	Green	Off	The WAN link is not ready, or has failed.
			On	The WAN link is ready.
			Flashing	The 10M WAN link is sending/receiving packets.
W-LAN	Wireless LAN	Green	Off	The wireless LAN is not ready, or has failed.
			On	The wireless LAN is ready.
			Flashing	The wireless LAN is sending/receiving packets.

2.2 Prestige 316 Rear Panel and Connections

The following figure shows the rear panel of your Prestige 316 and the connection diagram.

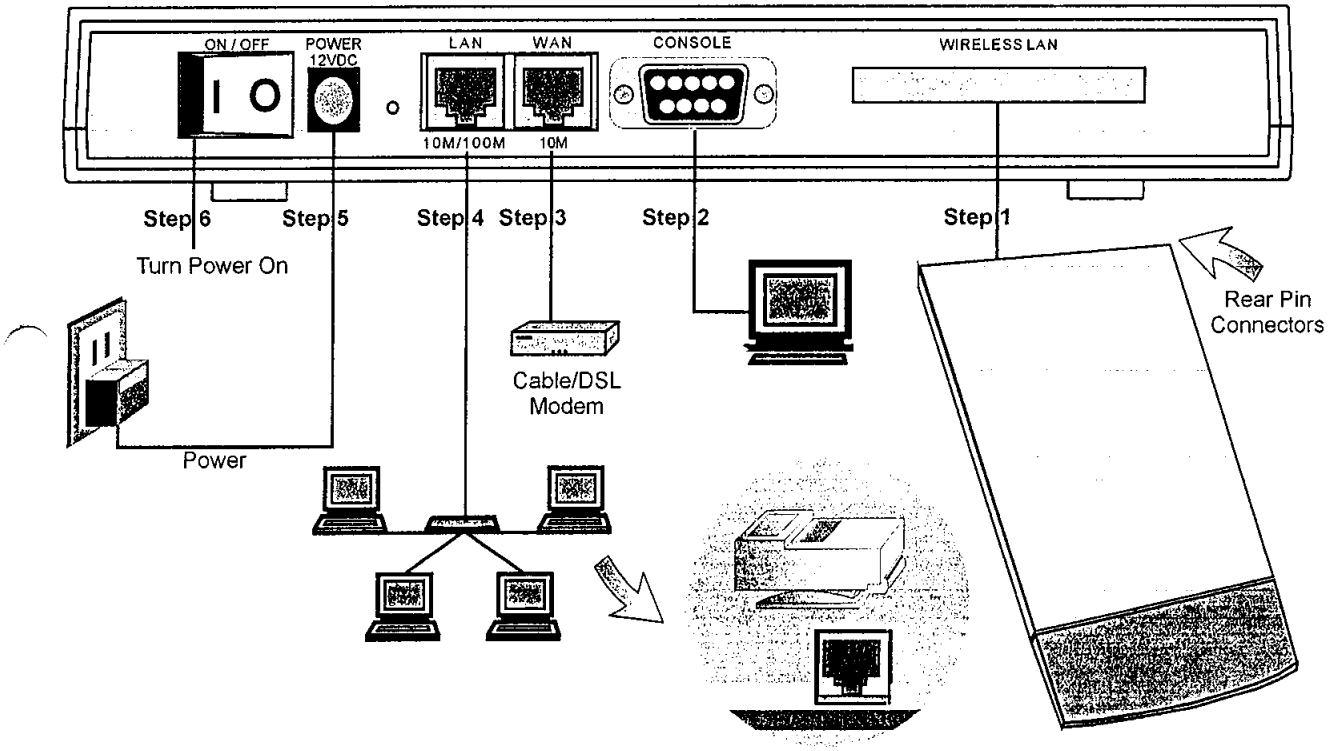

Figure 2-2 Prestige 316 Rear Panel and Connections

LEDs	FUNCTION	INDICATOR STATUS	ACTIVE	DESCRIPTION
			On	The Prestige is connected to a 100 Mbps LAN.
			Flashing	The 100M LAN is sending/receiving packets.
10M WAN	WAN	Green	Off	The WAN link is not ready, or has failed.
			On	The WAN link is ready.
			Flashing	The 10M WAN link is sending/receiving packets.
W-LAN	Wireless LAN	Green	Off	The wireless LAN is not ready, or has failed.
			On	The wireless LAN is ready.
			Flashing	The wireless LAN is sending/receiving packets.

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The following figure shows the rear panel of your Prestige 316 and the connection diagram.

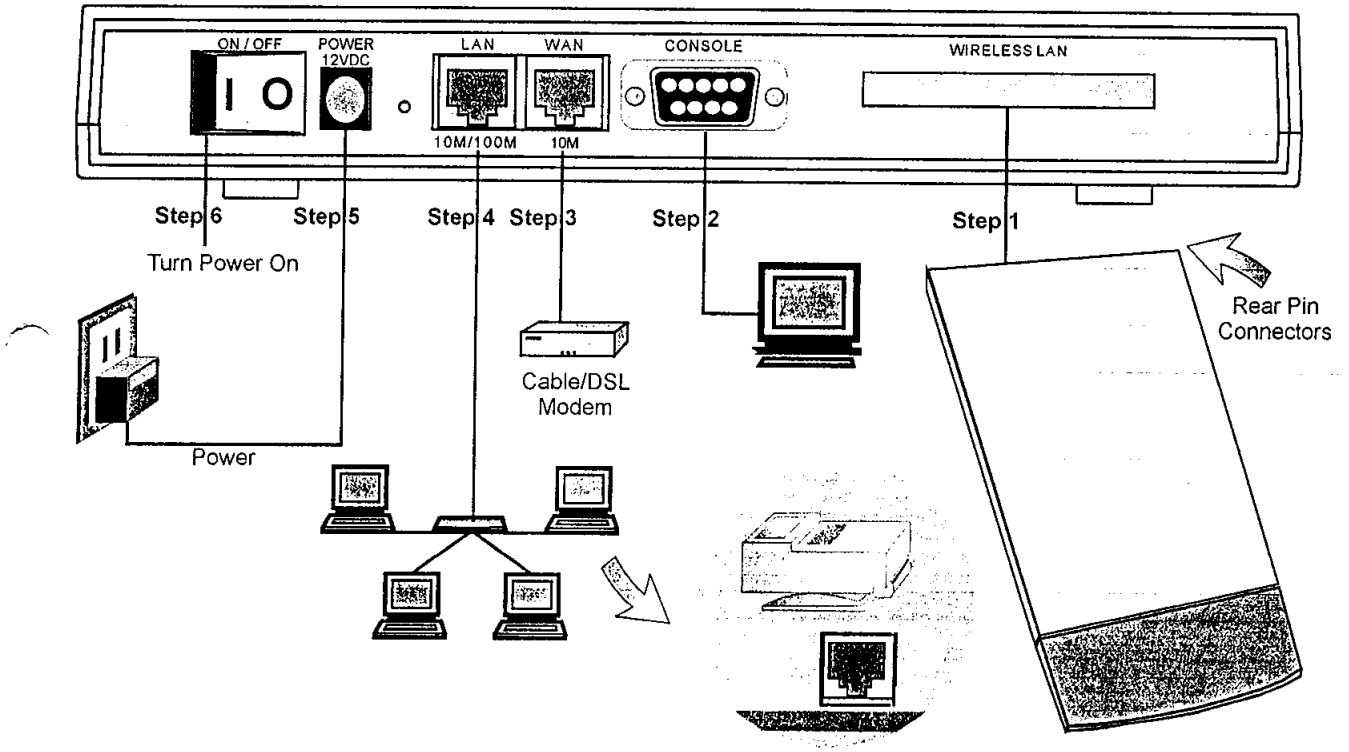
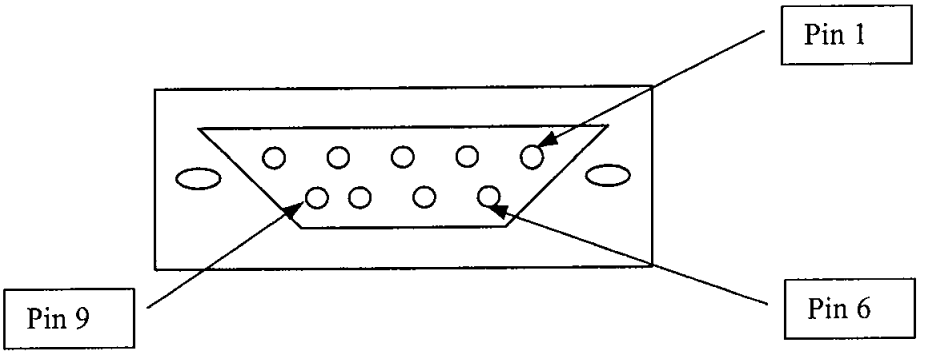


Figure 2-2 Prestige 316 Rear Panel and Connections

Appendix B
Hardware Specifications

Power Specification	I/P AC 120V / 60Hz; O/P DC 12V 1200 mA
MTBF (Mean Time Between Failure)	100000 hrs
Operating Temperature	0° C ~ 40° C
Ethernet Specification for WAN	10 Mbit Half Duplex
Ethernet Specification for LAN	10/100 Mbit Half / Full Auto-negotiation
Console Port RS–232C	Pin 1 = NON; Pin 2 = DTE-RXD; Pin 3 = DTE-TXD; Pin 4 = DTE-DTR; Pin 5 = GND; Pin 6 = DTE-DSR; Pin 7 = DTE-RTS; Pin 8 = DTE-CTS; Pin 9 = NON. See next figure.



WAN/LAN Cable Pin Layout: Straight-Through			Crossover		
(Switch)		(Adapter)	(Switch)		(Switch)
1 IRD +	———	1 OTD +	1 IRD +		1 IRD +
2 IRD –	———	2 OTD –	2 IRD –		2 IRD –
3 OTD +	———	3 IRD +	3 OTD +		3 OTD +
6 OTD –	———	6 IRD –	6 OTD –		6 OTD –