

# Cable/DSL Router

---

## AT-AR221E

### Installation Guide

Copyright. 2003 Allied Telesyn, Inc.

960 Stewart Drive Suite B, Sunnyvale, CA 94085 USA

All rights reserved. No part of this publication may be reproduced without prior written permission from Allied Telesyn, Inc. All product names, company names, logos or other designations mentioned herein are trademarks or registered trademarks of their respective owners. Allied Telesyn, Inc. reserves the right to make changes in specifications and other information contained in this document without prior written notice. The information provided herein is subject to change without notice. In no event shall Allied Telesyn, Inc. be liable for any incidental, special, indirect, or consequential damages whatsoever, including but not limited to lost profits, arising out of or related to this manual or the information contained herein, even if Allied Telesyn, Inc. has been advised of, known, or should have known, the possibility of such damages.

# Electrical Safety and Emission Statement

Standards: This product meets the following standards.

## U.S. Federal Communications Commission

This device complies with Part 15 of the 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 operation.

Note: 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 or more 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.


## Canadian Department of Communications


This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.


Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.


**CE Marking Warning:** This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.


**Important:** Appendix A contains translated safety statements for installing this equipment. When you see the  go to Appendix A for the translated safety statement in your language.


**Wichtig:** Anhang A enthält übersetzte Sicherheitshinweise für die Installation dieses Geräts. Wenn Sie  sehen, schlagen Sie in Anhang A den übersetzten Sicherheitshinweis in Ihrer Sprache nach.


**Vigtigt:** Tillæg A indeholder oversatte sikkerhedsadvarsler, der vedrører installation af dette udstyr. Når De ser symbolet  , skal De slå op i tillæg A og finde de oversatte sikkerhedsadvarsler i Deres eget sprog.


**Belangrijk:** Appendix A bevat vertaalde veiligheidsopmerkingen voor het installeren van deze apparatuur. Wanneer u de  ziet, raadpleeg Appendix A voor vertaalde veiligheidsinstructies in uw taal.


**Important :** L'annexe A contient les instructions de sécurité relatives à l'installation de cet équipement. Lorsque vous voyez le symbole  , reportez-vous à l'annexe A pour consulter la traduction de ces instructions dans votre langue.


**Tärkeää:** Liite A sisältää tämän laitteen asentamiseen liittyvät käännetyt turvaohjeet. Kun näet  -symbolin, katso käännettyä turvaohjetta liitteestä A.

**Importante:** l'Appendice A contiene avvisi di sicurezza tradotti per l'installazione di questa apparecchiatura. Il simbolo  ,indica di consultare l'Appendice A per l'avviso di sicurezza nella propria lingua.

**Viktig:** Tillegg A inneholder oversatt sikkerhetsinformasjon for installering av dette utstyret. Når du ser  , åpner du til Tillegg A for å finne den oversatte sikkerhetsinformasjonen på ønsket språk.

**Importante:** O Anexo A contém advertências de segurança traduzidas para instalar este equipamento. Quando vir o símbolo  , leia a advertência de segurança traduzida no seu idioma no Anexo A.

**Importante:** El Apéndice A contiene mensajes de seguridad traducidos para la instalación de este equipo. Cuando vea el símbolo  , vaya al Apéndice A para ver el mensaje de seguridad traducido a su idioma.

**Obs!** Bilaga A innehåller översatta säkerhetsmeddelanden avseende installationen av denna utrustning. När du ser  , skall du gå till Bilaga A för att läsa det översatta säkerhetsmeddelandet på ditt språk.

# Table of Contents

Electrical Safety and Emission Statement .....	1
<b>Preface</b> .....	4
Purpose of This Guide .....	4
How This Guide is Organized.....	4
Document Conventions.....	5
Where to Find Related Guides .....	6
Contacting Allied Telesyn Technical Support .....	6
Returning Products .....	8
FTP Server .....	8
For Sales or Corporate Information .....	8
Tell Us What You Think .....	14
<b>Chapter 1</b>	
<b>Introduction</b> .....	15
Router Features .....	15
Package Contents .....	17
<b>Chapter 2</b>	
<b>Installation</b> .....	18
Installing the Hardware .....	18
Reviewing Safety Precautions .....	18
Powering the Device .....	19
POST (Power-On-Self-Test) .....	19
Connecting the Router to Computers and Network.....	19
Modem Connection .....	19
Setting Up a Client Computer .....	21
Setting Up the Router.....	21
<b>Chapter 3</b>	
<b>Configuration Wizard</b> .....	22
Web Interface .....	22
PPPoE.....	23
Dynamic IP.....	24
Dynamic IP (Road Runner) .....	25
Static (Fixed) IP.....	26
PPTP.....	27
<b>Chapter 4</b>	
<b>Basic Settings</b> .....	28
PPPoE.....	29
Dynamic IP.....	30
Dynamic IP (Road Runner) .....	31
Static (Fixed) IP.....	32
PPTP.....	33
DHCP Server.....	34
Change Password.....	35

<b>Chapter 5</b>	
<b>Advanced Configuration</b> .....	36
Virtual Server.....	36
Special Applications.....	37
DMZ and FTP (Miscellaneous Items).....	38
Packet Filters.....	39
Domain Filters.....	40
URL Blocking.....	41
MAC Control.....	42
Remote Administrator (Miscellaneous) .....	43
System Time.....	44
System Log .....	45
Dynamic DNS .....	46
SNMP .....	47
Routing .....	48
Schedule Rule .....	49
View Log .....	50
Firmware Upgrade .....	51
Backup Settings .....	52
Reset to Defaults .....	52
Reboot .....	52
Wake-on-LAN (Miscellaneous).....	53
<b>Chaper 6</b>	
<b>System Status and Help</b> .....	54
System Status.....	54
Help.....	54
<b>Chapter 7</b>	
<b>Setting Up Client Computers for Internet Access</b> .....	55
Client Computer Requirements .....	55
Setting up Windows 95/98 PC Clients .....	55
Configuring a Client Computer Using the DHCP Server .....	56
Configuring a Client Computer Manually .....	56
Setting Up Windows NT 4.0 Clients .....	56
Configuring a Client Computer Using the DHCP Server .....	56
Configuring a Client Computer Manually .....	58
<b>Chapter 8</b>	
<b>Troubleshooting</b> .....	60
Power LED OFF .....	60
Status LED Never Blinks or LED Stays ON .....	60
Testing the LAN Path to Your Router .....	60
Testing the LAN Path from your PC to a Remote Device .....	60
<b>Appendix A</b>	
<b>Specifications</b> .....	62
<b>Appendix B</b>	
<b>Translated Electrical Safety and Emission Information</b> .....	67

# Preface

---

## Purpose of This Guide

This guide is intended for network administrators who are responsible for installing and maintaining the AT-AR221E Cable/DSL Router.

## How This Guide is Organized

---

This guide contains the following chapters and appendices:

Chapter 1, **Introduction**, describes the features, functions, LEDs, and ports on the router.

Chapter 2, **Installation**, describes how to install the router.

Chapter 3, **Configuration Wizard**, describes the procedures for accessing the router through its Web interface and for quickly configuring the router.

Chapter 4, **Basic Settings**, describes the procedures for manually configuring the basic parameters.

Chapter 5, **Advanced Configuration**, describes the procedures for entering configurations on advanced router features.

Chapter 6, **System Status and Help** describes the procedures for getting on-line help with the router.

Chapter 7, **Setting Up Client Computers for Internet Access**, describes the procedures for configuring a Windows client.

Chapter 8, **Troubleshooting**, describes procedures for resolving error conditions on the router.

Appendix A, **Specifications**, provides router specifications.

Appendix B, **Translated Electrical Safety and Emission Information**, contains multi-language translations of the cautions and warnings in this manual.

## Document Conventions

---

This guide uses several conventions that you should become familiar with before you begin to install the product:



---

**Note**

A note provides additional information.

---

---



---

**Warning**

A warning indicates that performing or omitting a specific action may result in bodily injury.

---

---



---

**Caution**

A caution indicates that performing or omitting a specific action may result in equipment damage or loss of data.

---

---

## Where to Find Related Guides

---

The Allied Telesyn web site at [www.alliedtelesyn.com](http://www.alliedtelesyn.com) under the support section contains the most recent documentation for all of our products. All web-based documents relating to this product and other Allied Telesyn products can be downloaded from the web site.

## Contacting Allied Telesyn Technical Support

---

You can contact Allied Telesyn technical support through the company's web site [www.alliedtelesyn.com](http://www.alliedtelesyn.com) under the support section or by telephone or fax.

### Telephone and Fax Support

#### EUROPEAN SUPPORT NUMBERS

Telephone support is available Monday through Friday between 0900 and 1730 local time (excluding national holidays).

#### **Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, The Netherlands, Norway, Sweden, Switzerland and the United Kingdom**

Free phone 00 800 287 877 678 or +31 20 711 4333

[europe\\_support@alliedtelesyn.com](mailto:europe_support@alliedtelesyn.com)

#### **Spain:**

Free phone 00 800 287 877 67 or +31 20 711 4333

[europe\\_support@alliedtelesyn.com](mailto:europe_support@alliedtelesyn.com)

#### **Finland:**

Free phone: 990 800 287 877 67 or +31 20 711 4333

[europe\\_support@alliedtelesyn.com](mailto:europe_support@alliedtelesyn.com)

#### **Croatia and Slovenia:**

Support Telephone number: +385 1 382 1341

Support Fax Number: + 385 1 382 1340

Support Email Address: [AThelpdesk\\_Croatia@alliedtelesyn.com](mailto:AThelpdesk_Croatia@alliedtelesyn.com)

#### **Czech Republic:**

Support Telephone number: +420 296 538 888

Support Fax Number: +420 296 538 889

Support Email Address: [Czech\\_support@alliedtelesyn.com](mailto:Czech_support@alliedtelesyn.com)



**Hungary:**

Support Telephone number: +36 | 382 6385

Support Fax number: +36 | 382 6398

Support Email Address: Hungary\_Helpdesk@alliedtelesyn.com

**Poland:**

Support Telephone number: +48 22 535 9670

Support Fax number: +48 22 535 9671

Support Email Address: Polska\_pomoc@alliedtelesyn.com

**Serbia, Montenegro, Macedonia, Bosnia and Herzegovina and Bulgaria:**

Support Telephone number: +381 | 11 32 35 639

Support Fax Number: +381 | 11 3235 992

Support Email Address: Yug.Servis@alliedtelesyn.com

**Russia and former Soviet Union Countries:**

Support Telephone number: +7-095-935 8585

Support Fax Number: +7-095-935 8586

Support Email Address : support\_CIS@alliedtelesyn.ru

**Ukraine:**

Support Telephone number: +7-095-935 8585

Support Fax Number: +7-095-935 8586

Support Email Address : Ukraine support@alliedtelesyn.com

All other countries not listed above should refer their technical support request to:

Support Telephone number: +31 20 711 4333

Support Email Address: europe\_support@alliedtelesyn.com

**Americas:**

Technical Support by Phone or Fax (8-5 PST M-F)

Toll-free: | 800 428 4835

Fax: | 425 481 3790

\*Support for Puerto Rico and the US Virgin Islands is provided through our Technical Support Center in Latin America.

México

Email soporte\_mexico@alliedtelesyn.com

Teléfono +52 55 5559 0611

## Returning Products

---

Products for return or repair must first be assigned a Return Materials Authorization (RMA) number. RMA policy varies from country to country. Please check the applicable RMA policy at [www.alliedtelesyn.com](http://www.alliedtelesyn.com). For Europe, you can also contact our European Customer Service centre by email at [rma\\_europe@alliedtelesyn.com](mailto:rma_europe@alliedtelesyn.com).

## FTP Server

---

If you need management software for an Allied Telesyn managed device, you can download the software by connecting directly to our FTP server at [ftp.alliedtelesyn.com](ftp://ftp.alliedtelesyn.com). At login, enter "anonymous" as the user name and your e-mail address as the password.

## For Sales or Corporate Information

---

### European & Latin America Headquarters

#### Allied Telesis International SA

Via Motta 24

6830 Chiasso

Switzerland

Tel: +41 91 6976900

Fax: +41 91 6976911

#### Allied Telesis International Services

Piazza Tirana n.24/4 B

20147 Milano

Italy

Tel: +39 02 4141121

Fax: +39 02 41411261

## REGIONAL LOCATIONS

### Austria & Eastern Europe

Allied Telesyn Vertriebsgesellschaft m.b.H.

Lainzer Strasse 16/5-6

1130, Vienna

Tel: +43-1-876 24 41

Fax: +43-1-876 25 72

**Poland**

Allied Telesyn Vertriebsgesellschaft m.b.H.

Sp. z o.o. Oddział w Polsce

ul. Elektoralna 13

00-137 Warszawa

Tel: +48 22 620 82 96

Fax: +48 22 654 48 56

**Romania**

Allied Telesyn Vertriebsgesellschaft m.b.H.

str. Thomas Masaryk 23

Sector 2, Bucharest 0209

Tel: +40-21-211-1817/8245

Fax: +40-21-210-5610

**Russia**

Allied Telesyn International

Ul. Korovij Vall

Dom 7 Str. I Office 190

I 19049 Moscow

Tel: +7095 9358585

Fax: +7095 9358586

**Serbia & Montenegro**

Allied Telesyn Vertriebsgesellschaft m.b.H.

Krunska 6

I 1000 Belgrade

Tel & Fax: +381 11 3033 208

+381 11 3033 209

+381 11 3235 639

**France**

Allied Telesyn International SAS

12, avenue de Scandinavie

Parc Victoria, Immeuble "Le Toronto"

91953 Courtaboeuf Cédex - Les Ulis

Tel: +33 1 60 92 15 25

Fax: +33 1 69 28 37 49

**Greece**

Allied Telesyn International S.r.l

Kiriazi 14-16

145 62 Kifisia

Tel: +30 210 6234 200

Fax: +30 210 6234 209

**Italy – North**

Allied Telesyn International S.r.l.

Via Anna Kuliscioff, 37

20152 Milano

Tel: +39 02 41304.1

Fax: +39 02 41304.200

**Italy – East**

Tel: +39 348 1522583

Tel & Fax: +39 049 8868175

**Italy – South**

Allied Telesyn International S.r.l.

Via Troilo il Grande 3

00131 Roma

Tel: +39 06 41294507

Fax: +39 06 41404801

**Turkey**

Allied Telesyn International

6. Cadde 61/2 Öveçler

06460 Ankara

Tel: +90 312 472 1054/55

Fax: +90 312 472 1056

**Germany – North**

Allied Telesyn International GmbH

Kapweg 4

13405 Berlin

Tel: +49-30-435 900-0

Fax: +49-30-435 900-300

Toll Free (Sales): 00 800 255 43310

Toll Free (Technical Support): 00 800 287 877678

### **Germany – South**

Allied Telesyn International GmbH

Zeppelinstr. 1

85399 Hallbergmoos

Tel: +49-81 1-999 37-0

Fax: +49-81 1-999 37-22

### **Belgium & Luxembourg**

Allied Telesyn International

Research Park

Kranenberg 6, 1731 Zellik, Belgium

Tel: +32 2 481 60 68

Fax: +32 2 481 60 75

### **Denmark**

Allied Telesyn International

Jyllinge ErhvervsCenter

Møllehaven 8

DK-4040 Jyllinge

Tel: +45 46734835

Fax: +45 46734837

### **Finland**

Allied Telesyn International Ltd.

Metsänneidonkuja 10

02130 ESPOO

Tel: +358 9 7255 5290

Fax: +358 9 7255 5299

**Iceland** +47 22 70 04 70

Ireland (Freephone) | 800 409 127

### **The Netherlands**

Allied Telesyn International BV

Hoeksteen 26

2132 MS Hoofddorp

Tel: +31 20 6540 246

Fax: +31 20 6540 249

**Norway**

Allied Telesyn International

Ole Deviksvai 4

0666 Oslo

Tel: +47 22 70 04 70

Fax: +47 22 70 04 01

**Sweden**

Allied Telesyn International

Byängsgränd 14

120 40 Årsta

Tel: +46 8 13 14 14

Fax: +46 8 681 04 45

**United Kingdom**

Allied Telesyn International Ltd.

100 Longwater Avenue

GreenPark

Reading, RG2 6GP

Tel: +44 118 920 9800

Fax: +44 118 975 2456

**Latin America - Support Office**

Allied Telesyn International

19800 North Creek Parkway, Suite 200

Bothell, WA 98011 USA

Tel: +1 425 481 3852

Fax: +1 425 489 9191

Toll Free (Mexico & Puerto Rico): (95-800) 424 5012 ext. 3852

**Latin America – Mexico**

Allied Telesyn International

AV. Insurgentes Sur # 800, Piso 8

Col. Del Valle

México, DF, 03100

Tel: +52 55 5448 4989

Fax: +52 55 5448 4910

**Portugal**

Allied Telesyn International

Centro de Escritórios das Laranjeiras

Praça Nuno Rodrigues dos Santos, N° 7 Sala 211

1600-171 Lisbon

Tel: +351 21 721 74 00

Fax: +351 21 727 91 26

**Spain**

Allied Telesyn International S.L.U

Plaza de España

18-4ª Ofic. 3, 28008 Madrid

Tel: +34 91 559 1055

Fax: +34 91 559 2644

**Allied Telesyn International, Corp.**

19800 North Creek Parkway, Suite 200

Bothell, WA 98011

Tel: 1 (425) 487-8880

Fax: 1 (425) 489-9191

**Allied Telesyn International, Corp.**

960 Stewart Drive, Suite B

Sunnyvale, CA 94085

Tel: 1 (800) 424-4284 (USA and Canada)

Fax: 1 (408) 736-0100

For current information, please visit our web site : [www.alliedtelesyn.com](http://www.alliedtelesyn.com)

## Tell Us What You Think

---

If you have any comments or suggestions on how we might improve this or other Allied Telesyn documents, please contact us at [www.alliedtelesyn.com](http://www.alliedtelesyn.com).



# Chapter I

## Introduction

---

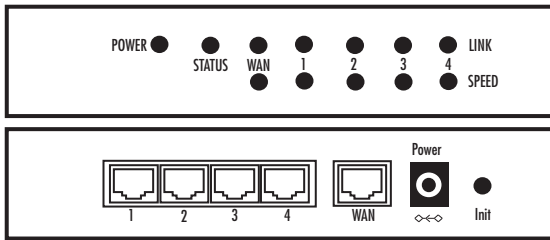
Thank you for purchasing the AT-AR221E Cable/DSL Router with an integral 4- port switch. This easy-to-use router offers small offices and home offices an economical way to connect their entire LAN to the Internet using an external DSL/Cable modem.

## Router Features

---

- 1 High speed Internet access - Includes a WAN port for connection to an external DSL/Cable modem for high speed Internet access (20~200 times faster than your legacy 56K modem)
  
- 1 Built-in four-port 10/100 Mbps Ethernet Switch - Provides complete and fast connectivity for small offices.
  
- 1 Shared single ISP account - Provides an affordable Internet access for all the computers in your office using a single ISP account, via Network Address Translation (NAT). NAT is always enabled.
  
- 1 DHCP (Dynamic Host Configuration Protocol) - Simplifies setup and management of all you network resources.
  
- 1 PPPoE & PPTP - Allows for flexible use and configuration of ADSL.
  
- 1 Stateful Inspection Firewall – To protect your computer data against un-authorized access via the Internet.
  
- 1 Web-based management - Includes an intuitive web-based configuration and administration interface to simplify router management.
  
- 1 SNMP based management – Allows the router to be managed as part of a large corporate network.
  
- 1 DNS Server - Supports two DNS servers that relay DNS entries to speed up the Internet connection.
  
- 1 Virtual Server - Allows for a Virtual Server configuration (for example, an FTP Server) to allow remote access by outside users.
  
- 1 Access control (packet filtering) - Monitors and blocks specific packets or applications.

This illustration **figure 1**, shows the front and rear panels of the router.



**Figure 1.** Router front and rear panels.

LED	Colour	Function/Description
Power	Green	Steady on when power is on.
Status	Orange	Flashing in normal operation
WAN (WAN port) Link/Act	Green	Steady on when ADSL/Cable modem is properly connected Flashing when WAN port has data traffic
100M	Green	Steady on when WAN port connected at 100Mbps Off – when WAN port connected at 10Mbps
LAN (1-4 LAN ports) Link/Act	Green	Steady on when LAN port is properly connected Flashing when LAN port has data traffic
100M	Green	Steady on when LAN port connected at 100Mbps Off – when LAN port connected at 10Mbps

**Init.** Press and hold the Initialize button. The Status LED will stop flashing, and then flash 6 times. Then release the button.

**WAN.** This port is for connecting to the Wide Area Network using an ADSL or Cable Modem.

**LAN 1 - 4.** These ports are used to connect computers and peripherals to the router.

**Power.** This socket is used to connect the external power supply to the router.

## Package Contents

---

Check your router package for the following items. If an item is missing or damaged, contact your Allied Telesyn sales representative for assistance.



**Figure 2.** Package contents.

- 1 | x Broadband Router
- 1 | x AC/DC power adapter
- 1 | x Ethernet Cable
- 1 | x This installation guide

# Chapter 2

## Installation

---

### Installing the Hardware

---


Perform the following procedures to install the router.

#### Reviewing Safety Precautions

Please review the following safety precautions before you begin to install the device in your network. Refer to Appendix B for translated safety statements in your language.



#### Warning

**Lightning Danger:** Do not work on this equipment or cables during periods of lightning activity.  1




#### Warning

**Power cord is used as a disconnection device:** To de-energize equipment, disconnect the power cord.  2




#### Warning

**Electrical-Type Class I Equipment:** This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.  3




#### Caution

**Pluggable Equipment:** The socket outlet should be installed near the equipment and should be easily accessible.  4




#### Caution

**Air vents:** The air vents must not be blocked on the unit and must have free access to the room ambient air for cooling.  5




#### Caution

**Operating Temperature:** This product is designed for a maximum ambient temperature of 40°C.  6



#### Caution

**All Countries:** Install this product in accordance with local and National Electric Codes.  7

## Powering the Device

---

1. Plug the power adapter to an AC power outlet.
2. Connect the output of the power supply to the power connector on the rear of the device.

The Power LED turns on immediately. The device then immediately runs a series of hardware diagnostics to ensure that the unit can operate properly.

## POST (Power-On-Self-Test)

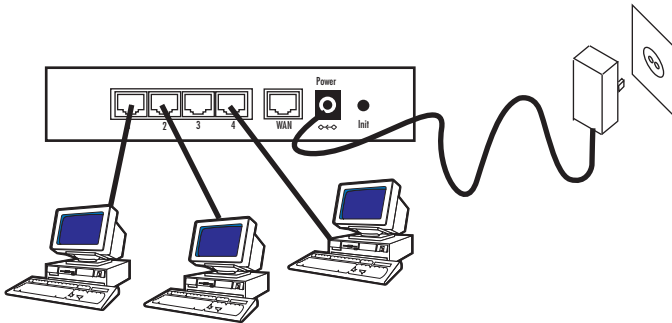
---

This series of hardware diagnostics is called Power-On-Self-Test (POST).

While the POST is running, watch the front panel of the router. 100M and Link/Act LEDs flash in sequence. If the POST succeeds without encountering any problems, the 100M and Link/Act LEDs turn OFF.

## Connecting the Router to Computers and a Network

The device features a built-in 4-port 10M/100M Ethernet switch. Any of the Ethernet ports can be connected to a computer that has an Ethernet card or NIC (Network Interface Card).



**Figure 3.** Connecting computers to the router

### Modem Connection

The device has one WAN port that connects to an external DSL/Cable modem for Internet access. The following hardware items are needed for the modem connection:

- 1 An external DSL/Cable modem with an Ethernet RJ-45 connector.
- 1 An RJ-45 to RJ-45 cable for connecting the modem to the router.

Figure 4 illustrates a typical network topology using the router.

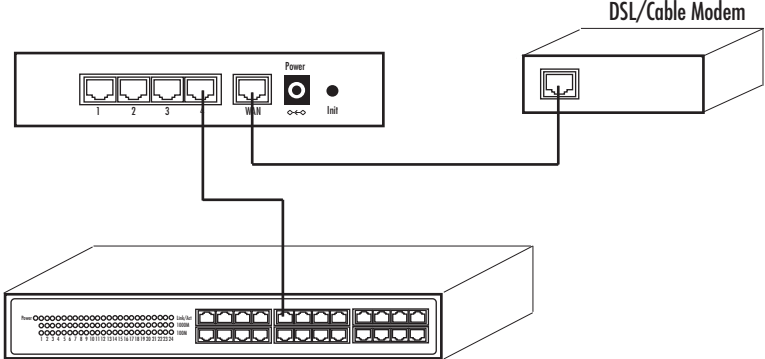


Figure 4. Network Topology Example

## Setting Up a Client Computer

---

To access the router's Web-based management interface, you need a computer that supports the TCP/IP protocol and has a Web browser.

This workstation must be in the same subnet as the router.

The default IP address of the router is **192.168.123.254**.

The default network mask is **255.255.255.0**.

The router features a standalone DHCP server feature that can configure a client workstation's TCP/IP settings automatically. Alternatively, you can manually configure the client workstation's TCP/IP settings as follows:

IP address of **192.168.123.1**

Network mask of **255.255.255.0**

The router's IP address as the client workstation's DNS (Domain Name System) device.

The router's IP address as the client workstation's default gateway.

**For detailed information on the DHCP server feature, refer to Chapter 4.**

## Setting Up the Router

---

To establish an Internet connection to your ISP (Internet Service Provider) via a DSL/Cable modem, set up the modem and the ISP information on the router. Use a Web browser from a management station to open the Quick Setup interface. This procedure is described in Chapters 3 & 4.

## Chapter 3

### Configuration Wizard

---

The router features a Web-based management wizard. This allows the router to be quickly and easily programmed.

#### Web Interface

##### Note

The Web browser software (Netscape Communicator and Microsoft Internet Explorer) are included in the CD shipped with the router. The browsers can also be downloaded from Netscape Communications' web site at <<http://www.netscape.com>> and Microsoft's web site at <<http://www.microsoft.com>>.

The router is pre-configured from the factory with the default IP address **192.168.123.254**.

1. Start your web browser on a workstation that has the TCP/IP protocol. (The workstation and the router must be on the same IP subnet.)
2. Type the router's IP address in the URL field. For example: <http://192.168.123.254> and press Enter.

The router's default IP address **192.168.123.254**. If the IP address of the router has been changed, then enter the current one.

The Login window shown in Figure 5 is displayed.

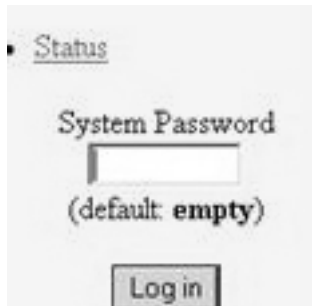


Figure 5. Login Window

3. Do not type anything into the Password field and click OK.

##### Note

The router is factory-configured with the default password left blank. The Introduction page is displayed. You can start configuring the router.

4. Click the **Wizard** item in the left-side window to start the utility.



## PPPoE

This is a 'dial-up type' connection type provided by some ISPs. Note that if you select the PPPoE option, then please remove any existing PPPoE application on all PCs attached to the LAN.

The screenshot shows the web interface of an AT-AR221E router. On the left is a navigation menu with options: Status, Wizard, Basic Settings, Forwarding Rules, Security Settings, Advanced Settings, and Toolbox. A 'Logout' button is at the bottom of the menu. The main content area is titled 'AT-AR221E, Cable/DSL Router' and contains a 'Setup Wizard - PPP over Ethernet' window. This window has five fields: 'LAN IP Address' (with the value 192.168.123.254), 'Account', 'Password', 'Primary DNS' (with the value 0.0.0.0), and 'Secondary DNS' (with the value 0.0.0.0). At the bottom right of the wizard window are three buttons: '< Back', 'Undo', and 'Next >'.

Figure 6. PPPoE Wizard

**LAN IP Address:** Enter the IP address of the Router (default = 192.168.123.254)

**Account:** Enter your User Name provided by your ISP. Leave this blank if you have not been given a User Name by your ISP.

**Password:** Enter your Password provided by your ISP.

**Specify DNS Server Address:** Your ISP will provide you with at least one DNS IP Address. Multiple DNS IP settings are common. The first available DNS entry is used in most cases.

## Dynamic IP (DHCP obtain IP automatically)

This is the default option for the Router. If your ISP automatically assigned the IP addresses and other values to the Router, leave it there without making any change.

The screenshot shows the 'Setup Wizard - Dynamic IP Address' interface. On the left is the 'Administrator's Main Menu' with the following items: Status, Wizard, + Basic Setting, + Forwarding Rules, + Security Setting, + Advanced Setting, + Toolbox, and a Log out button. The main content area displays the wizard steps: 'LAN IP Address' (192.168.123.254), 'Host Name' (optional), and 'WAN's MAC Address' (00-50-10-1A-11-31) with a 'Clone MAC' button. At the bottom right are '< Back', 'Undo', and 'Next >' buttons.

Figure 7. Dynamic IP Wizard

**LAN IP Address:** Enter the IP address of the Router (default = **192.168.123.254**)

**Host Name:** This entry is required by certain ISPs. Leave this blank if you have not been given this parameter by your ISP.

**WAN's MAC Address:** This is the MAC address of the Router. Clicking on Clone MAC will program the WAN port of the router with the MAC address of your PC.

## Dynamic IP Address (Road Runner)

The screenshot shows the web interface of an AT-AR221E router. On the left is the 'Administrator's Main Menu' with links for Status, Wizard, Basic Setting, Forwarding Rules, Security Setting, Advanced Setting, and Toolbox, along with a Log out button. The main content area is titled 'AT-AR221E, Cable/DSL Router' and displays the 'Setup Wizard - Dynamic IP Address (Road Runner)'. The wizard has a dark header and a white body with four fields: 'LAN IP Address' with the value '192.168.123.254', 'Account', 'Password', and 'Login Server' with '(optional)' text. At the bottom right of the wizard are three buttons: '< Back', 'Undo', and 'Next >'.

Figure 8. Dynamic IP (Road Runner) Wizard

**LAN IP Address:** Enter the IP address of the Router (default = 192.168.123.254)

**Account:** Enter your User Name provided by your ISP. Leave this blank if you have not been given a User Name by your ISP.

**Password:** Enter your Password provided by your ISP.

**Login Server:** Enter the Server Address provided by your ISP.

## Fixed (Static) IP

The Public IP Address and Subnet Mask of the Router are used by external users of the Internet (including your ISP). If you have been assigned a Fixed IP address by your ISP, select this item and enter the IP Address and Subnet Mask provided.

The screenshot shows the web interface of an AT-AR221E Cable/DSL Router. On the left is the 'Administrator's Main Menu' with options: Status, Wizard, Basic Setting, Forwarding Rules, Security Setting, Advanced Setting, and Tanhox. A 'Log out' button is at the bottom of the menu. The main content area is titled 'AT-AR221E, Cable/DSL Router' and contains a 'Setup Wizard - Static IP Address' window. This window has a table of configuration fields:

Field	Value
▶ LAN IP Address	192.168.123.254
▶ Static IP Address	0.0.0.0
▶ Static Subnet Mask	255.255.255.0
▶ Static Gateway	0.0.0.0
▶ Static Primary DNS	0.0.0.0
▶ Static Secondary DNS	0.0.0.0

At the bottom right of the wizard window are three buttons: '< Back', 'Undo', and 'Next >'.

Figure 9. Fixed (Static) IP Wizard

**Specify WAN IP Address:** Enter the IP address provided by your ISP.

**Subnet Mask:** Enter the Subnet Mask values provided by your ISP.

**Default Gateway IP Address:** Your ISP will provide you with the Default Gateway IP Address. This is sometimes called the 'Next-hop'.

**Domain Name Server (DNS):** Your ISP will provide you with at least one DNS IP Address. Multiple DNS IP settings are common. The first available DNS entry is used in most cases.

## PPTP

This is a 'dial-up type' connection type provided by some ISPs.

The screenshot shows the web interface of an AT-AR221E router. On the left is the 'Administrator's Main Menu' with options: Status, Wizard, Basic Setting, Forwarding Rules, Security Setting, Advanced Setting, and Toolbox. A 'Log out' button is at the bottom of the menu. The main content area is titled 'AT-AR221E, Cable/DSL Router' and displays a 'Setup Wizard - PPTP' window. This window contains a list of configuration fields with their current values: LAN IP Address (192.168.123.254), My IP Address (0.0.0.0), My Subnet Mask (255.255.255.0), Server IP Address (0.0.0.0), PPTP Account (empty), and PPTP Password (empty). At the bottom right of the wizard are buttons for '< Back', 'Undo', and 'Next >'.

Figure 10. PPTP Wizard

**LAN IP Address:** Enter the IP address of the Router (default = **192.168.123.254**)

**My IP Address:** The IP address of the PPTP Client you want to negotiate with the PPTP server

**My Subnet Mask:** The subnet mask of the PPTP Client

**Server IP Address:** The address of the PPTP Server

**PPTP Account:** The login name on the PPTP Server

**PPTP Password:** The password of the user account

# Chapter 4

## Basic Settings

This chapter explains how to use the Basic Setting utility to configure the Internet access settings of the router.

### To use the Basic Setting utility:

1. Launch your browser and enter the router's IP address in the URL field using the following format:

**http://192.168.123.254**

The IP address shown is the default IP address of your router.

### Note

The router is pre-configured at the factory with a default IP address of 192.168.123.254. If this IP address is already being used by another device on your network, you must turn off the other network device until you have assigned the router a new IP address.

The first Web page you see is the Login screen, as shown in Figure 11.

**AT-AR221E, Cable/DSL Router**

Allied Telesyn

**User's Main Menu**

System Password

**System Status**

Item	WAN Status	Sidenote
Remaining Lease Time	00:00:00	
IP Address	0.0.0.0	
Subnet Mask	0.0.0.0	
Gateway	0.0.0.0	Unreachable
Domain Name Server	0.0.0.0	

Statistics of WAN	Inbound	Outbound
Octets	0	0
Unicast Packets	0	0
Non-unicast Packets	0	0

Device Time: Tue Sep 23 00:00:07 2003 Firmware Version: R1.00E

**Figure 11.** Login Screen.

2. Enter the administrator's password (the default has no password set).
3. Click the **Basic Settings** item in the left-side window to start the utility.

## PPPoE

Select **Primary Settings** from under the **Basic Settings**, and select **PPPoE** as the WAN type.

**AT-AR221E, Cable/DSL Router**

**Primary Setup**

Item	Setting
▶ LAN IP Address	192.168.123.254
▶ WAN Type	PPPoE over Ethernet <input type="button" value="Change..."/>
▶ PPPoE Account	<input type="text"/>
▶ PPPoE Password	<input type="text"/>
▶ Primary DNS	0.0.0.0
▶ Secondary DNS	0.0.0.0
▶ Maximum Idle Time	300 seconds <input type="checkbox"/> Auto-reconnect

Saved! The change doesn't take effective until rebooting!

Figure 12. PPPoE Setup

**LAN IP Address:** Enter the IP address of the Router (default = 192.168.123.254)

**PPPoE Account:** Enter your User Name provided by your ISP. Leave this blank if you have not been given a User Name by your ISP.

**Password:** Enter your Password provided by your ISP.

**Specify DNS Server Address:** Your ISP will provide you with at least one DNS IP Address. Multiple DNS IP settings are common. The first available DNS entry is used in most cases.

**Maximum Idle Time:** If Dial-on-demand is enabled, this parameter is the number of minutes that the WAN connection is kept active after the last data was sent. When this time period is exceeded, this WAN link will be dropped. This feature ensures that when frequent data traffic is sent or received by the WAN link, that the Dial-on-demand startup delay does not impede the throughput for the user. Set to 0 will disable this feature.

**Auto-reconnect:** If this box is left blank, then the connection will always be active. If the box is checked, then the router will start a WAN connection whenever there is data to be transferred. This allows the router to be used with ISP accounts when the ISP bills per second of usage.

**Note:** Do NOT set Auto-reconnect to enable, and Maximum Idle Time = 0.

## Dynamic IP

Select **Primary Settings** from under the **Basic Settings**, and select **Dynamic IP** as the WAN type.

Allied Telesyn  
Administrator's Main Menu

- Status
- Wizard
- Basic Setting
  - o Primary Setup
  - o DHCP Server
  - o Change Password
- + Forwarding Rules
- + Security Setting
- + Advanced Setting
- + Toolbox
  - Log out

### AT-AR221E, Cable/DSL Router

#### Primary Setup

Item	Setting
▶ LAN IP Address	192.168.123.254
▶ WAN Type	Dynamic IP Address <input type="button" value="Change.."/>
▶ Host Name	<input type="text"/> (optional)
▶ WAN's MAC Address	00-50-18-1A-11-31 <input type="button" value="Clone MAC"/>
▶ Renew IP Forever	<input type="checkbox"/> Enable ( <i>Auto-reconnect</i> )

Saved! The change doesn't take effective until re-booting!

**Figure 13.** Dynamic IP Setup

**LAN IP Address:** Enter the IP address of the Router (default = **192.168.123.254**)

**Host Name:** This entry is required by certain ISPs. Leave this blank if you have not been given this parameter by your ISP.

**WAN's MAC Address:** This is the MAC address of the Router. Clicking on Clone MAC will program the WAN port of the router with the MAC address of your PC.

**Renew IP Forever:** When enabled, the router will automatically renew its IP address when the address lease time has expired.



## Dynamic IP (Road Runner)

Select **Primary Settings** from under the **Basic Settings**, and select **Dynamic IP (Road Runner)** as the WAN type.

**Allied Telesyn**  
**Administrator's Main Menu**

- Status
- Wizard
- Basic Setting
  - Primary Setup
  - DHCP Server
  - Change Password
- + Forwarding Rules
- + Security Setting
- + Advanced Setting
- + Toolbox

**AT-AR221E, Cable/DSL Router**

### Primary Setup

Item	Setting
▶ LAN IP Address	192.168.123.254
▶ WAN Type	Dynamic IP Address <input type="button" value="Change..."/>
▶ Account	<input type="text"/>
▶ Password	<input type="text"/>
▶ Login Server	<input type="text"/> (optional)
▶ Renew IP Forever	<input type="checkbox"/> Enable (Auto-reconnect)

Saved! The change doesn't take effective until rebooting!

Figure 14. Dynamic IP (Road Runner) Setup

**LAN IP Address:** Enter the IP address of the Router (default = **192.168.123.254**)

**Account:** Enter your User Name provided by your ISP. Leave this blank if you have not been given a User Name by your ISP.

**Password:** Enter your Password provided by your ISP.

**Renew IP Forever:** When enabled, the router will automatically renew its IP address when the address lease time has expired.

## Static IP

Select **Primary Settings** from under the **Basic Settings**, and select **Static IP** as the WAN type.

**AT-AR221E, Cable/DSL Router**

**Primary Setup**

Item	Setting
▶ LAN IP Address	192.168.123.254
▶ WAN Type	Static IP Address <input type="button" value="Change..."/>
▶ WAN IP Address	0.0.0.0
▶ WAN Subnet Mask	255.255.255.0
▶ WAN Gateway	0.0.0.0
▶ Primary DNS	0.0.0.0
▶ Secondary DNS	0.0.0.0

Saved! The change doesn't take effective until re-booting!

**Figure 15.** Static (Fixed) IP Setup

**LAN IP Address:** Enter the IP address of the Router (default = **192.168.123.254**)

**Specify WAN IP Address:** Enter the IP address provided by your ISP.

**WAN Subnet Mask:** Enter the Subnet Mask values provided by your ISP.

**WAN Default Gateway IP Address:** Your ISP will provide you with the Default Gateway IP Address. This is sometimes called the 'Next-hop'.

**Domain Name Server (DNS):** Your ISP will provide you with at least one DNS IP Address. Multiple DNS IP settings are common. The first available DNS entry is used in most cases.

Select **Primary Settings** from under the **Basic Settings**, and select **PPTP** as the WAN type.

Item	Setting
▶ LAN IP Address	192.168.123.254
▶ WAN Type	PPTP <input type="button" value="Change..."/>
▶ My IP Address	0.0.0.0
▶ My Subnet Mask	255.255.255.0
▶ Server IP Address	0.0.0.0
▶ PPTP Account	<input type="text"/>
▶ PPTP Password	<input type="text"/>
▶ Connection ID	<input type="text"/> (optional)
▶ Maximum Idle Time	300 seconds <input type="checkbox"/> Auto-reconnect

Figure 16. PPTP Setup

**LAN IP Address:** Enter the IP address of the Router (default = 192.168.123.254)

**My IP Address:** The IP address of the PPTP Client you want to negotiate with the PPTP server.

**My Subnet Mask:** The subnet mask of the PPTP Client

**Server IP Address:** The address of the PPTP Server

**PPTP Account:** The login name on the PPTP Server

**PPTP Password:** The password of the user account

**Connection ID:** Optional information needed by some ISPs

**Maximum Idle Time:** If Dial-on-demand is enabled, this parameter is the number of minutes that the WAN connection is kept active after the last data was sent. When this time period is exceeded, this WAN link will be dropped. This feature ensures that when frequent data traffic is sent or received by the WAN link, that the Dial-on-demand startup delay does not impede the throughput for the user. Set to 0 will disable this feature.

**Auto-reconnect:** If this box is left blank, then the connection will always be active. If the box is checked, then the router will start a WAN connection whenever there is data to be transferred. This allows the router to be used with ISP accounts when the ISP bills per second of usage.

## DHCP Server

DHCP allows you to configure the TCP/IP settings of the computers automatically on the LAN, such as the IP addresses and the subnet mask. The router has DHCP incorporated in it. You can use the DHCP server to simplify the setup of TCP/IP networks. The server can provide the following settings to the client computers:

- 1 IP addresses
- 1 Subnet masks
- 1 Default gateway (which is the IP address of the router)
- 1 DNS (Domain Name System) server

Select **DHCP Server** from under the **Basic Settings**.

The screenshot shows the DHCP Server configuration interface for the AT-AR221E, Cable/DSL Router. The interface includes a navigation menu on the left with options like Status, Wizard, Basic Setting, Primary Setup, DHCP Server, Change Password, Forwarding Rules, Security Setting, Advanced Setting, and Toolbox. The main content area displays a table with the following settings:

Item	Setting
▶ DHCP Server	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
▶ IP Pool Starting Address	<input type="text" value="100"/>
▶ IP Pool Ending Address	<input type="text" value="199"/>
▶ Domain Name	<input type="text"/>

At the bottom of the table, there are buttons for Save, Undo, More>>, Clients List..., Fixed Mapping..., and Help.

Figure 17. DHCP Setup

**Enable DHCP Server:** Select “Enable” to use the DHCP server option of the router. If you already have a DHCP server in your network, set the router’s DHCP option to “Disable”.

**IP Pool Address Range:** Enter range of numbers, from 0 to 253, for the DHCP server to use when assigning IP Addresses to the attached LAN devices.

**Lease Time:** Enter the time that the IP addresses remain valid, before being timed-out by the router. A recommended value for this setting is 2 hours.

**Domain Name:** This is an optional entry for a Domain name server, which will be passed to clients on the local LAN.

## Change Password

Select **Change Password** from under the **Basic Settings**. This allows the network administrator to change the login password for the router.

The screenshot shows the web interface for an AT-AR221E Cable/DSL Router. The page title is "Change Password". On the left is a navigation menu with the following items: Status, Wizard, Basic Setting (with sub-items: Primary Setup, DHCP Server, Change Password), Forwarding Rules, Security Setting, Advanced Setting, and Toolbox. A "Log out" button is at the bottom of the menu. The main content area has a table with two columns: "Item" and "Setting".

Item	Setting
Old Password	<input type="text"/>
New Password	<input type="text"/>
Reconfirm	<input type="text"/>

Below the table are two buttons: "Save" and "Undo".

**Figure 18.** Change Password

**Old Password:** If you need to change the password, then you must enter the present password in this box.

**Password:** If the administrator needs to change the password, type in the new password here.

**Re-type Password:** If the administrator needs to change the password, this box must match the contents of the Password.

## Chapter 5

### Advanced Settings

#### Virtual Server

In some situations you might want users on the Internet to be able to access servers on your LAN, such as an email server or a Web server. Access is accomplished by creating “virtual servers.” Each virtual server has its own IP address and shares a single public IP address. Each server is defined by the service type (TCP or UDP) and a TCP/UDP port number.

To view the existing virtual servers or to create a new virtual server, click the Virtual Server item in the left-side window.

Select **Virtual Server** from under the **Forwarding Rules**, in the left hand window.

AT-AR221E, Cable/DSL Router

Virtual Server

ID	Service Ports	Server IP	Enable	Use Rule#
1		192.168.123.	<input type="checkbox"/>	\$SrA
2		192.168.123.	<input type="checkbox"/>	\$SrB
3		192.168.123.	<input type="checkbox"/>	\$SrC
4		192.168.123.	<input type="checkbox"/>	\$SrD
5		192.168.123.	<input type="checkbox"/>	\$SrE
6		192.168.123.	<input type="checkbox"/>	\$SrF
7		192.168.123.	<input type="checkbox"/>	\$SrG
8		192.168.123.	<input type="checkbox"/>	\$SrH
9		192.168.123.	<input type="checkbox"/>	\$SrI
10		192.168.123.	<input type="checkbox"/>	\$SrJ
11		192.168.123.	<input type="checkbox"/>	\$SrK
12		192.168.123.	<input type="checkbox"/>	\$SrL
13		192.168.123.	<input type="checkbox"/>	\$SrM
14		192.168.123.	<input type="checkbox"/>	\$SrN
15		192.168.123.	<input type="checkbox"/>	\$SrO
16		192.168.123.	<input type="checkbox"/>	\$SrP

Figure 19. Virtual Server Setup

Example:

ID	Service Port	Server IP	Enable	Comment
1	80	192.168.123.1	Yes	Web Server
2	21	192.168.123.2	Yes	FTP Server
3	23	192.168.123.3	Yes	Telnet Server

In the example above, ID=1 allows data sent to WAN IP address on port 80 to be re-directed to the Web Server at 192.168.123.1 on the local LAN.

## Special Applications

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, then enter the public ports associated with the trigger port to open them for inbound traffic.

Select **Special Applications** from under the **Forwarding Rules**, in the left hand window.

The screenshot shows the 'Special Applications' configuration page for the AT-AR221E router. The interface includes a sidebar menu on the left with the following items: Status, Wizard, + Basic Setting, - Forwarding Rules (expanded), Virtual Server, Special AP, Miscellaneous, + Security Setting, + Advanced Setting, and + Toolbox. The main content area features a table with the following structure:

ID	Trigger	Incoming Ports	Enable
1	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
2	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
3	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
4	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
5	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
6	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
7	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
8	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Below the table, there is a 'Popular applications' dropdown menu with the text '- select one -', a 'Copy to ID' button, and a small ID dropdown. At the bottom of the page are 'Save', 'Undo', and 'Help' buttons.

Figure 20. Special Applications

Example:

ID	Trigger Port	Public Port	Comment
1	28800	2300-2400,47624	MSN Game Zone
2	28800	2300-2400,47624	MSN Game Zone
3	6112	6112	Battle.net

## Miscellaneous Items (DMZ, and FTP)

Select **Miscellaneous Items** from under the **Forwarding Rules**, in the left hand window.

AT-AR221E, Cable/DSL Router

Miscellaneous Items

Item	Setting	Enable
▶ IP Address of DMZ Host	192.168.123	<input type="checkbox"/>
▶ Non-standard FTP port	0	

Save Undo Help

Figure 21. DMZ and FTP Port

### IP Address of DMZ Host.

**Note:** To use this application, you should obtain a Fixed (Static) Public IP Address from your ISP.

The Host application allows unrestricted 2-way communication between a single LAN PC and other Internet users or servers. This application is useful for supporting special-purpose services such as video-conferencing and gaming, that require proprietary client software and/or 2-way user communication.

**Note:** In order to provide unrestricted access, the Firewall provided by the Broadband Access Router to protect this port is disabled, thus creating a potentially serious security risk. It is recommended that this application should be disabled when it is not in use by entering not checking the "Enable DMZ" field.

**Non-standard FTP port** You have to configure this item if you want to access an FTP server whose port number is not 21. This setting will be lost after rebooting.



## Packet Filters

Packet filtering allows you to block users from accessing specific services (or applications) on the Internet. For example, the administrator can deny the users access to SMTP/POP3 email services on the Internet, while allowing them access to the Web/HTTP services. By default, packet filtering is disabled.

Select **Packet Filters** from under **Security Settings** in the left hand window.

The screenshot shows the web interface for the AT-AR221E, Cable/DSL Router. The page title is "Outbound Packet Filter". On the left is a navigation menu with "Security Setting" expanded to "Packet Filters". The main content area has a "Setting" section with radio buttons for "Allow all to pass except those match the following rules." (selected) and "Deny all to pass except those match the following rules.". Below this is a table with 8 rows for rule configuration. At the bottom, there are buttons for "Save", "Undo", "Inbound Filter...", "NACLevel...", and "Help", along with a "Schedule rule" dropdown set to "(03)Always" and a "Copy to ID" dropdown.

ID	Source IP : Ports	Destination IP : Ports	Enable	Use Rule#
1	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F0
2	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F1
3	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F2
4	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F3
5	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F4
6	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F5
7	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F6
8	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	\$F7

Figure 22. Packet Filters

To block a particular IP address, enter the IP address, and the time and days that you would like the protocols to be blocked. (Note, the Simple Network Time Protocol should be enabled for this to function).

## Domain Filters

Select **Domain Filters** from under **Security Settings** in the left hand window

Allied Telesyn  
Administrator's Main Menu

- Status
- Wizard
- + Basic Setting
- + Forwarding Rules
- Security Setting
  - o Packet Filters
  - o **Domain Filters**
  - o URL Blocking
  - o MAC Control
  - o Miscellaneous
- + Advanced Setting
- + Toolbox
  - Log out

### AT-AR221E, Cable/DSL Router

#### Domain Filter

Item	Setting
Domain Filter	<input type="checkbox"/> Enable
Log DNS Query	<input type="checkbox"/> Enable
Privilege IP Addresses Range	From <input type="text"/> To <input type="text"/>

ID	Domain Suffix	Action	Enable
1	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
2	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
3	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
4	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
5	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
6	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
7	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
8	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
9	<input type="text"/>	<input type="checkbox"/> Drop <input type="checkbox"/> Log	<input type="checkbox"/>
10	*(all others)	<input type="checkbox"/> Drop <input type="checkbox"/> Log	-

Save Undo Help

Figure 23. Domain Filters

**Domain Filters:** Allows you to prevent users under this device from accessing specific URL's

## URL Blocking

URL Blocking will block computers on the LAN ports from connecting to pre-defined Websites.

Select **URL Blocking** from under **Security Settings** in the left hand window

AT-AR221E, Cable/DSL Router

URL Blocking

Item Setting

URL Blocking  Enable

ID	URL	Enable
1	<input type="text" value="\$ULA"/>	<input type="checkbox"/>
2	<input type="text" value="\$ULB"/>	<input type="checkbox"/>
3	<input type="text" value="\$ULC"/>	<input type="checkbox"/>
4	<input type="text" value="\$ULD"/>	<input type="checkbox"/>
5	<input type="text" value="\$ULE"/>	<input type="checkbox"/>
6	<input type="text" value="\$ULF"/>	<input type="checkbox"/>
7	<input type="text" value="\$ULG"/>	<input type="checkbox"/>
8	<input type="text" value="\$ULH"/>	<input type="checkbox"/>
9	<input type="text" value="\$ULI"/>	<input type="checkbox"/>
10	<input type="text" value="\$ULJ"/>	<input type="checkbox"/>

Save Undo Help

Figure 24. URL Blocking

**URL Blocking:** Check "Enable" or "Disable" to make this function active or inactive.

**URL:** If any part of the Website's URL matches the pre-defined word, the connection will be blocked. For example, you can use pre-defined word "sex" to block all websites if their URLs contain pre-defined word "sex".

**Enable:** Checked to enable each rule.

## MAC Control

The Router provides two MAC Address Control features for up to 32 MAC addresses:

- 1 **Fixed IP Mapping** – This will assigned a fixed IP address to a specified client (by MAC address)
- 1 **Connection Control** – This allows or denies clients to connect to this device and the Internet.

Select **MAC Control** from under **Security Settings** in the left hand window

**AT-AR221E, Cable/DSL Router**

### MAC Address Control

Item	Setting
▶ MAC Address Control	<input type="checkbox"/> Enable
<input type="checkbox"/> Connection control	Clients with <b>C</b> checked can connect to this device, and <input type="text" value="allow"/> unspecified MAC addresses to connect.

ID	MAC Address	IP Address	C
1	<input type="text"/>	192.168.123. <input type="text"/>	<input type="checkbox"/>
2	<input type="text"/>	192.168.123. <input type="text"/>	<input type="checkbox"/>
3	<input type="text"/>	192.168.123. <input type="text"/>	<input type="checkbox"/>
4	<input type="text"/>	192.168.123. <input type="text"/>	<input type="checkbox"/>

DHCP clients:  Copy to:

Figure 25. MAC Address Control.

**MAC Address Control:** 'Enable' if you want the Router to perform MAC Address Control.

**Connection Control:** 'Enable' if you want the Router to 'allow' or 'block' Clients from connecting to the Internet. Choose "allow" or "deny" to allow or deny clients whose MAC addresses are not listed in the "Control table".

**MAC Address:** Indicates a specific client's MAC address.

**IP Address:** Expected IP address of the corresponding client. Leave it blank if you don't want to assign a specified IP address to the corresponding client.

**C:** When "Connection control" is enabled, checking "C" will allow the corresponding client to "Connect" to this device.

## Remote Administrator (Miscellaneous)

Select **Miscellaneous** from under **Security Settings** in the left hand window.

The screenshot shows the web interface for an AT-AR221E, Cable/DSL Router. The left sidebar contains a navigation menu with the following items: Status, Wizard, Basic Setting, Forwarding Rules, Security Setting (with sub-items: Packet Filters, Domain Filters, URL Blocking, MAC Control, and Miscellaneous), Advanced Setting, and Toolbox. The main content area is titled "Miscellaneous Items" and contains a table with three columns: Item, Setting, and Enable. The table lists three settings: Remote Administrator Host / Port (set to 0.0.0.0 / 88), Administrator Time-out (set to 600 seconds), and Discard PING from WAN side. Below the table are buttons for Save, Undo, and Help.

Item	Setting	Enable
▶ Remote Administrator Host / Port	0.0.0.0 / 88	<input type="checkbox"/>
▶ Administrator Time-out	600 seconds (0 to disable)	
▶ Discard PING from WAN side		<input type="checkbox"/>

Save Undo Help

**Figure 26.** Remote Administration security settings.

**Remote Administrator Host:** Setting this to 'Enable' will allow users on the WAN port to manage the router. If the address is set as 0.0.0.0, then any device on the WAN port can become the administrator. If a unique IP address is specified, then only a device with the same IP address can access the router via the WAN port. Setting the subnet bits "/nn" will allow a group of administrators to have access.

**Note:** When Remote Administration is enabled, the web server port will be shifted to 88.

**Administrator Time-out:** If there is no admin activity via the WAN port for X seconds, then the administrator is logged out. Setting this value to zero disables this function.

**Discard PING from WAN side:** When this feature is enabled, any host on the WAN cannot ping this product.

## System Time

This allows the Router to synchronise its system clock to an external clock source on the Internet. This is useful if the administrator is required to log the routers actions in real time.

Select **System Time** from under **Advanced Settings** in the left hand window.

The screenshot displays the configuration interface for the AT-AR221E, Cable/DSL Router. The main heading is "System Time". The interface is organized into a table with two columns: "Item" and "Setting".

Item	Setting
<input type="checkbox"/> Get Date and Time by NTP Protocol	<input type="button" value="Sync Now!"/>
Time Server	<input type="text" value="time.nist.gov"/>
Time Zone	<input type="text" value="(GMT-08:00) Pacific Time (US &amp; Canada)"/>
<input type="checkbox"/> Set Date and Time using PC's Date and Time	
PC Date and Time:	<input type="text" value="24 October 2003 10:23:36"/>
<input checked="" type="checkbox"/> Set Date and Time manually	
Date	Year: <input type="text" value="2003"/> Month: <input type="text" value="Apr"/> Day: <input type="text" value="1"/>
Time	Hour: <input type="text" value="0"/> (0-23) Minute: <input type="text" value="0"/> (0-59) Second: <input type="text" value="0"/> (0-59)

At the bottom of the configuration area, there are three buttons: , , and .

Figure 27. System Time.

**Enable NTP:** Checking this box will force the router to synchronise its internal system clock against an external Simple Network Time Protocol server.

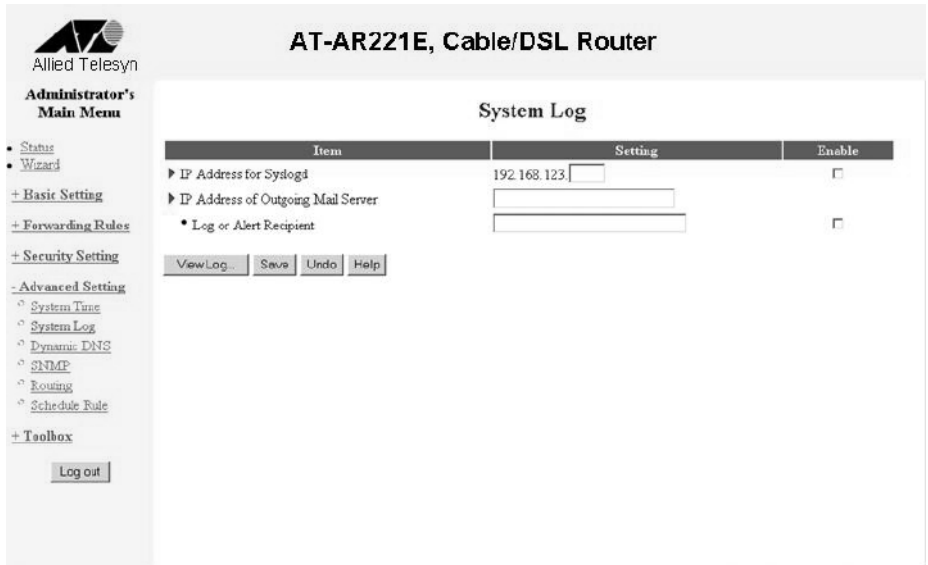
**Time Server:** Enter the IP address of the SNTP server.

Alternatively, the time can be set by the PC or manually.

## System Log

The router supports two methods of system logging, syslog (UDP) and SMTP (TCP).

Select **System Log** from under **Advanced Settings** in the left hand window.



AT-AR221E, Cable/DSL Router

System Log

Item	Setting	Enable
▶ IP Address for Syslog	192.168.123.	<input type="checkbox"/>
▶ IP Address of Outgoing Mail Server		<input type="checkbox"/>
• Log or Alert Recipient		<input type="checkbox"/>

View Log Save Undo Help

Figure 28. System Log.

**IP Address for Syslog:** Host IP of destination where syslogs file will be sent.

Check **Enable** to enable this function.

**IP Address of Outgoing Mail Server:** Input the IP Address of Outgoing Mail Server.

For example, "192.168.1.100".

**Log or Alert Recipient:** The recipients who will receive these logs. Check **Enable** to enable Email alert (send syslog via email).

## Dynamic DNS

Select **Dynamic DNS** from under **Advanced Settings** in the left hand window.

AT-AR221E, Cable/DSL Router

Dynamic DNS

Item	Setting
▶ DDNS	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
▶ Provider	<input type="text" value="DynDNS.org(Dynamic)"/>
▶ Host Name	<input type="text"/>
▶ Username / E-mail	<input type="text"/>
▶ Password / Key	<input type="text"/>

Save Undo Help

Figure 29. Dynamic DNS

**DDNS:** Disable / Enable - Select Enable to enable DDNS.

**Provider:** Enter the name of you Dynamic DNS provider.

**Host Name:** You can register a domain name to the DDNS provider.

**Username / E-mail:** This field is required by DDNS provider to authenticate its users. Input username or E-mail according to the DDNS provider.

**Password / Key:** This field is required by the DDNS provider. Input the password or key according to the DDNS provider.



## SNMP

Select **SNMP** from under **Advanced Settings** in the left hand window.

Allied Telesyn

### AT-AR221E, Cable/DSL Router

#### SNMP Setting

Item	Setting
▶ Enable SNMP	<input checked="" type="checkbox"/> Local <input type="checkbox"/> Remote
▶ Get Community	<input type="text" value="public"/>
▶ Set Community	<input type="text" value="private"/>

Administrator's Main Menu

- Status
- Wizard
- + Basic Setting
- + Forwarding Rules
- + Security Setting
- Advanced Setting
  - System Tune
  - System Log
  - Dynamic DNS
  - **SNMP**
  - Routing
  - Schedule Rule
- + Toolbox

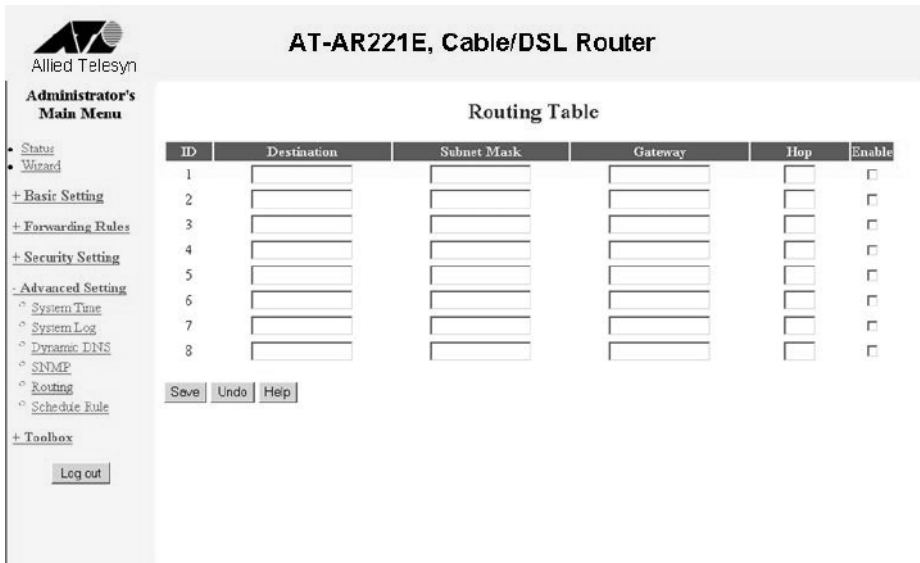
Figure 30. SNMP Setup

**Enable SNMP:** You must check either Local or Remote or both to enable SNMP function. If Local is checked, this device will respond to requests from the LAN. If Remote is checked, this device will respond to requests from the WAN.

## Routing

Only users with an excellent understanding of router protocols should attempt to change settings in this area. This may be required if you have more than one router on your LAN.

Select **Routing** from under **Advanced Settings** in the left hand window.



The screenshot shows the web interface for the AT-AR221E, Cable/DSL Router. The title is "AT-AR221E, Cable/DSL Router". The page is titled "Routing Table". On the left is the "Administrator's Main Menu" with a tree view containing: Status, Wizard, + Basic Setting, + Forwarding Rules, + Security Setting, - Advanced Setting (with sub-items: System Time, System Log, Dynamic DNS, SNMP, Routing, Schedule Rule), and + Toolbox. A "Log out" button is at the bottom of the menu. The main content area contains a table with 6 columns: ID, Destination, Subnet Mask, Gateway, Hop, and Enable. There are 8 rows of input fields. Below the table are "Save", "Undo", and "Help" buttons.

ID	Destination	Subnet Mask	Gateway	Hop	Enable
1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

Save Undo Help

Figure 31. Routing Setup

Enter the information on the static routes in the following fields.

**Destination IP Address:** Enter the Destination network address here.

**Subnet Mask:** Enter the Destination network Subnet Mask here.

**Gateway:** Enter the Gateway (Next Hop) for the static route.

## Schedule Rule

The Schedule Rule allows the time of day of tasks to be programmed. These Rules are used in allowing access to the Website out of office hours.

Select **Schedule Rule** from under **Advanced Settings** in the left hand window.

The screenshot shows the web interface for the AT-AR221E, Cable/DSL Router. The page title is "AT-AR221E, Cable/DSL Router" and the sub-page title is "Schedule Rule". On the left is an "Administrator's Main Menu" with options: Status, Wizard, Basic Setting, Forwarding Rules, Security Setting, Advanced Setting (with sub-options: System Time, System Log, Dynamic DNS, SNMP, Routing, Schedule Rule), and Toolbox. A "Log out" button is at the bottom of the menu. The main content area has a "Schedule Rule" section with a table:

Item	Setting
► Schedule	<input type="checkbox"/> Enable

Below this is another table with columns "Rule#", "Rule Name", and "Action". At the bottom of the main content area are three buttons: "Save", "Add New Rule...", and "Help".

**Figure 32.** Schedule Rule.

**Schedule Enable:** Selected if you want to Enable the Scheduler.

**Edit:** To edit the schedule rule.

**Delete:** To delete the schedule rule.

**Add New Rule** - Click "Add New Rule" to enter "Schedule Rule Setting".

## View Log

This allows the users to see all the log events and actions performed by the Router.

Select **View Log** from under **Toolbox** in the left hand window.

**Allied Telesyn**  
**AT-AR221E, Cable/DSL Router**

**Administrator's Main Menu**

- Status
- Wizard
- + Basic Setting
- + Forwarding Rules
- + Security Setting
- + Advanced Setting
- Toolbox
  - View Log
  - Firmware Upgrade
  - Backup Setting
  - Reset to Default
  - Reboot
  - Miscellaneous

---

**System Log**

WAN Type: PPP over Ethernet (R1.00E)  
Display time: Tue Apr 01 00:19:38 2003

\*PADI:3com sent  
\*PADI:3com sent  
\*DDOS:triggered internally  
01 April 2003 00:16:22 PPPoE start to dial-up  
\*PADI sent  
\*PADI sent  
\*PADI sent  
\*DDOS:TCP trigger from 192.168.123.103:1620 to 149.35.56.15:402  
01 April 2003 00:16:27 PPPoE start to dial-up  
\*PADI:3com sent  
\*PADI:3com sent  
\*PADI:3com sent  
\*DDOS:TCP trigger from 192.168.123.103:1620 to 149.35.56.15:402  
01 April 2003 00:16:36 PPPoE start to dial-up  
\*PADI sent  
\*PADI sent  
\*PADI sent  
\*DDOS:triggered internally  
01 April 2003 00:17:02 PPPoE start to dial-up  
\*PADI:3com sent  
\*PADI:3com sent  
\*PADI:3com sent  
\*DDOS:triggered internally  
01 April 2003 00:17:05 PPPoE start to dial-up  
\*PADI sent

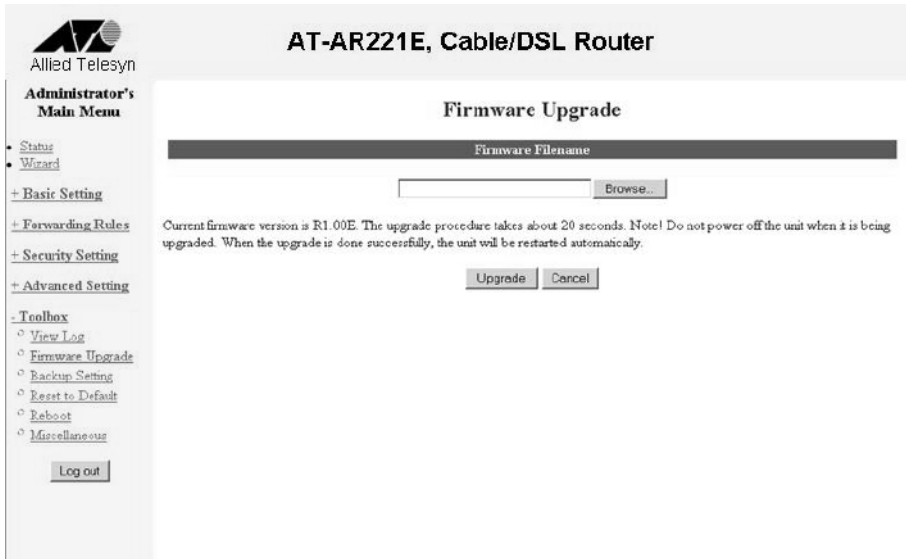
Figure 33. Log file.

## Firmware Upgrade

---

This allows the firmware of the router to be upgraded.

Select **Firmware Upgrade** from under **Toolbox** in the left hand window.



**Figure 34.** Firmware Upgrade.

1. Use the **"Browse"** button to select the image upgrade file on the local computer.
2. Select the **"Update"** button.
3. **Wait at least 1 minute for the Router to upload the new image firmware, and re-boot itself.**

## **Backup Settings**

---

This allows the configuration of the router to be saved on a local computer.

Select **Backup Settings** from under **Toolbox** in the left hand window.

## **Reset to Default**

---

Checking this box and then selecting "**Apply**" will restore the router back to the factory default settings.

## **Reboot**

---

This allows the router to be reset, without changing any of the parameters programmed by the user.

Select **Reboot** from under **Toolbox** in the left hand window.

## Wake-on-LAN (Miscellaneous)

Select **Miscellaneous** from under **Toolbox** in the left hand window.

The screenshot shows the web interface for an AT-AR221E, Cable/DSL Router. The page title is "Miscellaneous Items". On the left is a navigation menu with the following items: Status, Wizard, Basic Setting, Forwarding Rules, Security Setting, Advanced Setting, Toolbox (expanded), View Log, Firmware Upgrade, Backup Setting, Reset to Default, Reboot, and Miscellaneous. A "Log out" button is at the bottom of the menu. The main content area has a table with two columns: "Item" and "Setting". The table contains one row: "MAC Address for Wake-on-LAN" with an empty text input field and a "Wake up" button. Below the table are "Save", "Undo", and "Help" buttons.

Item	Setting
MAC Address for Wake-on-LAN	<input type="text"/> Wake up

Figure 35. Wake-on-LAN

**MAC Address for Wake-on-LAN:** Wake-on-LAN is a technology that enables you to power up a networked device on the LAN ports remotely. Enter the MAC address of the device that should be woken, when the router receives a WOL packet.

## Chapter 6

### System Status and Help

---

#### System Status

The System Status selection in the selection window on the left hand side displays basic information about the router.

Select **Status** from the left hand window displays the information shown below.

- 1 WAN Port IP Address

- 1 WAN Port Statistics

#### Help Feature

The router's management interface provides an easy-to-use help function. Click the Help button in each configuration page for procedures to configure every parameter and to display definitions of the parameters. You can also click the Help item on the selection window to view overall help information.



## Chapter 7

### Setting Up Client Computers for Internet Access

---

#### Client Computer Requirements

A client PC with Windows 95/98/2000/NT or Windows XP must have the following:

- 1 Ethernet (10/100BaseTX or 10BaseT) network interface card
- 1 TCP/IP network protocol

#### Setting up Windows 95/98 PC Clients

Configuring a Client Computer Using the DHCP Server

If you choose to use the server's built-in DHCP server to configure a client PC, the server automatically provides the following TCP/IP configuration information to the PC:

- 1 The PC's IP address
- 1 The PC's subnet mask
- 1 The IP address of the default gateway, which is the IP address of the server itself
- 1 The DNS (Domain Name System)

The configuration procedures are described below:

1. From Windows' Control Panel, double-click on the Network icon to bring up the Network Control Panel.
2. Double-click on TCP/IP in the network component list.
3. Click on the IP Address tab.
4. Select Obtain an IP address automatically.
5. Click on the DNS tab.
6. Select Enable DNS and add the server's IP address to DNS Server Search Order list.
7. Save the changes and then restart the computer.

Your PC is ready to access the Internet through the server.

If you do not want to use the DHCP server to configure the client computer, you must configure the computer manually. The following describes how to configure the IP parameters for a client computer using Windows 95/98.

---

1. From Windows' Control Panel, double-click on the Network icon to bring up the Network Control Panel.
2. Double-click on TCP/IP in the network component list.
3. Click on the IP Address tab.
4. Select Specifying an IP address.
5. Enter the IP address for this PC.
6. Enter the subnet mask. If you kept the default subnet mask setting on the server, enter 255.255.255.0.
7. Click on the Gateway tab.
8. Enter the server's IP address and click Add to insert the entry as the first item in the Installed Gateway list.
9. Click on the DNS tab.
10. Select Enable DNS.
11. Add the server's IP address to DNS Server Search Order list.
12. Save the changes and then restart the computer.

Your PC is ready to access the Internet through the server.

## Setting Up Windows NT 4.0 Clients

Before proceeding with the setup below, make sure that the TCP/IP protocol is already installed on the client computer. Please refer to the Windows NT's manuals for the installation procedures.

---

## Configuring a Client Computer Using the DHCP Server

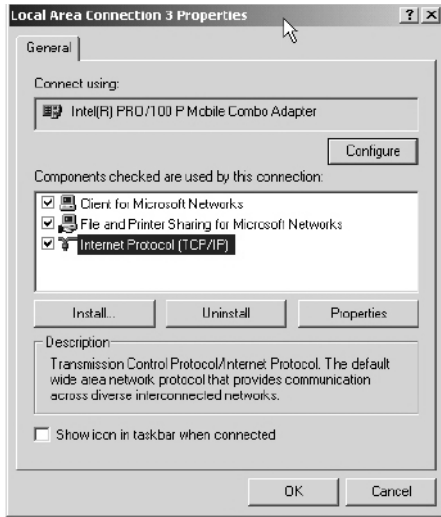
It is recommended that you use the router's built-in DHCP server to configure the TCP/IP settings for Windows NT client computers. The server will provide the following TCP/IP configuration information to your PCs:

---

- 1 The PC's IP address
- 1 The PC's subnet mask
- 1 The IP address of the default gateway, which is the IP address of the server itself
- 1 The DNS (Domain Name System) server

The configuration procedure is described below:

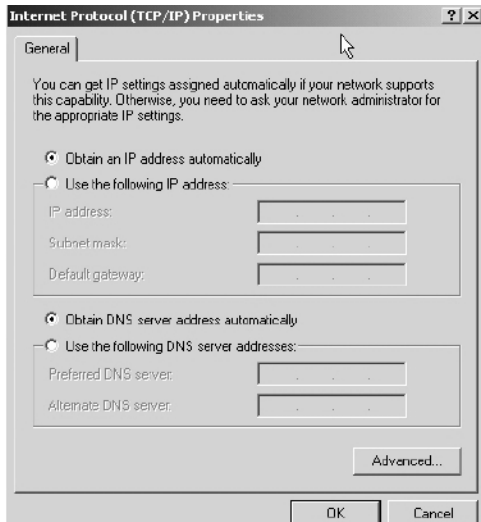
1. From the Windows Control Panel, double click on the Network icon to bring up the Network Control Panel.
2. Click on the Protocols tab.
3. Double-click on TCP/IP Protocol in the Network Protocols list, shown in Figure 36.



**Figure 36.** Network Menu

4. In the TCP/IP Properties window, click on the IP Address tab.
5. Select Obtain an IP address from a DHCP server as shown in Figure 37.

**Figure 37.** Microsoft TCP/IP Properties Menu



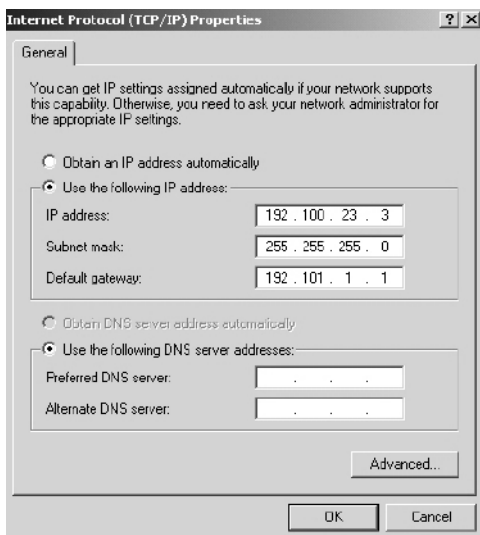
6. Save the changes and then restart the computer.
- Your PC is ready to access the Internet through the server.

## Configuring a Client Computer Manually

If you do not want to use the DHCP server to configure the client computer, you must configure the computer manually. The following procedure describes how to configure the IP parameters for a client computer using Windows NT.

1. From the Windows Control Panel, double-click on the Network icon to bring up the Network Control Panel.
2. Double-click on TCP/IP in the network component list.
3. Click on the IP Address tab.
4. Select the Specifying an IP address as shown in Figure 38.

**Figure 38.** Microsoft TCP/IP Properties Menu



5. Enter the IP address for this PC.
6. Enter the subnet mask. If you kept the default subnet mask setting on the server, then enter 255.255.255.0.
7. Enter the server's IP address into the Default Gateway field.
8. Click on the DNS tab.
9. Add the server's IP address to the DNS Service Search Order list, as shown in Figure 39.

SS

**Figure 39.** Microsoft TCP/IP Properties (DNS) Menu

10. Enter this PC's name to the Host Name field. (You usually do not need to fill in the Domain field.)

11. Save the changes and then restart the computer.

Your PC is ready to access the Internet through the server.

## Chapter 8

### Troubleshooting

---

This chapter provides troubleshooting information.

#### Power LED OFF

If the power and other LEDs are OFF, do the following:

- 1 Make sure the power adapter is properly connected to the router.
- 1 Make sure you are using the 5Vdc power adapter supplied for this product. If the problem persists, there might be a hardware problem. Contact technical support.

#### Status LED Never Blinks or LED Stays ON

If the router is powered ON, the Status LED should constantly blink after the power up sequence. If the Status LED does not blink, first try resetting the router back to factory defaults by pressing and holding the Init button. If the error persists, you might have a hardware problem. Contact technical support.

#### Testing the LAN Path to Your Router

To test the LAN connection to the router, do the following:

- 1 Check the Ethernet wiring connection between your computer and the server.
- 1 Use TCP/IP's PING command to determine if the TCP/IP settings on both your computer and your server are correct. For example, if your computer is a PC with Windows, then open an MS-DOS command window and enter the following commands:

```
ping 192.168.123.254
```

This command assumes that the IP address of the router is 192.168.123.254. If the router does not respond to the ping command, contact technical support.

#### Testing the LAN Path from your PC to a Remote Device

To test the LAN connection to a remote device, type in the PING -n 10 command followed by the IP address of a remote device, such as your ISP's DNS server. If the path is functioning properly, the remote device will send replies in response to the PING command. If no replies are received, do the following:

- 1 Make sure your PC has the IP address of your router as the default gateway. If the IP configuration of your PC is assigned by DHCP, this information will not be visible in the control panel network utility. Start the Run window and run `windowsipcfg` to see if the IP address of the router appears as the Default Gateway.
- 1 Make sure the network address of your PC (the portion of the IP address specified by the netmask) is different from the network address of the remote device.
- 1 Check the System Information table with the Web configuration tool to verify the WAN status. If the WAN status is down, make sure your Cable/DSL modem is connected and operating.

<sup>1</sup> If your ISP assigned a host name to your PC, enter the host name as the router name in the WAN Configuration.

## **Upgrading Firmware**

You can use the web-based interface to upgrade the router's firmware and to restore the configuration values. Upgrading the firmware is explained in Chapter 5.

# Appendix A

## Specifications

---

Model AT-AR221E Cable/DSL Router with 4-port Switch

### Standards

IEEE 802.3,

IEEE 802.3U

### Network Protocols

TCP/IP,

DHCP,

DNS,

NAT,

TFTP,

HTTP,

SNMP

### WAN Port

1 x RJ-45 connector

### LAN Ports

4 x RJ-45 UTP connectors

### LED Indicators

1 x Power

1 x Self Test/Status

10 x LAN Port Status

2 x WAN Port Status

### External Power Adapter

5V DC, 2A

### Operating Temperature

0 – 40°C

### Storage Temperature

-20 – 70°C

### Dimensions W x D x H

153mm x 112.4mm x 31mm

### Weight

230g



## Appendix B

### Translated Electrical Safety and Emission Information

---

**Important:** This appendix contains multiple-language translations for the safety statements in this guide.

**Wichtig:** Dieser Anhang enthält Übersetzungen der in diesem Handbuch enthaltenen Sicherheitshinweise in mehreren Sprachen.

**Vigtigt:** Dette tillæg indeholder oversættelser i flere sprog af sikkerhedsadvarselne i denne håndbog.

**Belangrijk:** Deze appendix bevat vertalingen in meerdere talen van de veiligheidsopmerkingen in deze gids.

**Important:** Cette annexe contient la traduction en plusieurs langues des instructions de sécurité figurant dans ce guide.

**Tärkeää:** Tämä liite sisältää tässä oppaassa esiintyvät turvaohjeet usealla kielellä.

**Importante:** questa appendice contiene traduzioni in più lingue degli avvisi di sicurezza di questa guida.















**Viktig:** Dette tillegget inneholder oversettelser til flere språk av sikkerhetsinformasjonen i denne veiledningen.

**Importante:** Este anexo contém traduções em vários idiomas das advertências de segurança neste guia.

**Importante:** Este apéndice contiene traducciones en múltiples idiomas de los mensajes de seguridad incluidos en esta guía.

**Obs!** Denna bilaga innehåller flerspråkiga översättningar av säkerhetsmeddelandena i denna handledning.

**Standards:** This product meets the following safety standards.

-  **1**  **LIGHTNING DANGER**  
**DANGER:** DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY.
-  **2**  **CAUTION:** POWER CORD IS USED AS A DISCONNECTION DEVICE. TO DE-ENERGIZE EQUIPMENT, disconnect the power cord.
-  **3**  **ELECTRICAL - TYPE CLASS I EQUIPMENT**  
**THIS EQUIPMENT MUST BE EARTHED.** Power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.
-  **4**  **PLUGGABLE EQUIPMENT,** the socket outlet shall be installed near the equipment and shall be easily accessible.
-  **5**  **CAUTION:** Air vents must not be blocked and must have free access to the room ambient air for cooling.
-  **6**  **OPERATING TEMPERATURE:** This product is designed for a maximum ambient temperature of 40° degrees C.
-  **7**  **ALL COUNTRIES:** Install product in accordance with local and National Electrical Codes.

U.S. Federal Communications Commission

This device complies with Part 15 of the 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 operation.

Note: 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 or more 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.

Canadian Department of Communications

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

**Normen:** Dieses Produkt erfüllt die Anforderungen der nachfolgenden Normen.



1



**GEFAHR DURCH BLITZSCHLAG**

**GEFAHR:** Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.



2



**VORSICHT:** DAS NETZKABEL DIENST ZUM TRENNEN DER STROMVERSORGUNG. ZUR TRENNUNG VOM NETZ, KABEL AUS DER STECKDOSE ZIEHEN.



3



**GERÄTE DER KLASSE I**

**DIESE GERÄTE MÜSSEN GEEDET SEIN.** Der Netzstecker darf nur mit einer vorschriftsmäßig geerdeten Steckdose verbunden werden. Ein unvorschriftsmäßiger Anschluß kann die Metallteile des Gehäuses unter gefährliche elektrische Spannungen setzen.



4



**STECKBARES GERÄT:** Die Anschlußbuchse sollte in der Nähe der Einrichtung angebracht werden und leicht zugänglich sein."



5



**VORSICHT**

Die Entlüftungsöffnungen dürfen nicht versperrt sein und müssen zum Kühlen freien Zugang zur Raumluft haben.



6



**BETRIEBSTEMPERATUR:** Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 40° C entworfen.










7





**ALLE LÄNDER:** Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.




**Standarder:** Dette produkt tilfredsstiller de følgende standarder.





- 1  **FARE UNDER UVEJR**  
**FARE:** UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET.
- 2  **ADVARSEL:** DEN STRØMFØRENDE LEDNING BRUGES TIL AT AFBRYDE STRØMMEN.  
SKAL STRØMMEN TIL APPARATET AFBRYDES, tages ledningen ud af stikket.
- 3  **ELEKTRISK - KLASSE I-UDSTYR**  
**DETTE UDSKYR KRÆVER JORDFORBINDELSE.** Stikket skal være forbundet med en korrekt installeret jordforbunden stikkontakt. En ukorrekt installeret stikkontakt kan sætte livsfarlig spænding til tilgængelige metaldele.
- 4  **UDSTYR TIL STIKKONTAKT,** stikkontakten bør installeres nær ved udstyret og skal være let tilgængelig.
- 5  **ADVARSEL:** Ventilationsåbninger må ikke blokeres og skal have fri adgang til den omgivende luft i rummet for afkøling.
- 6  **BETJENINGSTEMPERATUR:** Dette apparat er konstrueret til en omgivende temperatur på maksimum 40 grader C.
- 7  **ALLE LANDE:** Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer.

**Eisen:** Dit product voldoet aan de volgende eisen.








- 1  **GEVAAR VOOR BLIKSEMINSLAG GEVAAR:** NIET aan toestellen of KABELS WERKEN bij BLIKSEM.
- 2  **WAARSCHUWING:** HET TOESTEL WORDT UITGESCHAKELD DOOR DE STROOMKABEL TE ONTKOPPELEN. OM HET TOESTEL STROOMLOOS TE MAKEN: de stroomkabel ontkoppelen.
- 3  **ELEKTRISCHE TOESTELLEN VAN KLASSE I**  
DIT TOESTEL MOET GEAARD WORDEN. De stekker moet aangesloten zijn op een juist geaarde contactdoos. Een onjuist geaarde contactdoos kan de metalen onderdelen waarmee de gebruiker eventueel in aanraking komt onder gevaarlijke spanning stellen.
- 4  **AAN TE SLUITEN APPARATUUR,** de contactdoos wordt in de nabijheid van de apparatuur geïnstalleerd en is gemakkelijk te bereiken."
- 5  **OPGELET:** De ventilatiegaten mogen niet worden gesperd en moeten de omgevingslucht ongehindert toelaten voor afkoeling.
- 6  **BEDRIJFSTEMPERATUUR:** De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 40 graden Celsius.
- 7  **ALLE LANDE:** het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften.

**Normes:** ce produit est conforme aux normes de suivantes:








- 1  **DANGER DE Foudre**  
**DANGER:** NE PAS MANIER le matériel ou les CÂBLES lors d'activité orageuse.
- 2  **ATTENTION:** LE CORDON D'ALIMENTATION SERT DE MISE HORS CIRCUIT. POUR COUPER L'ALIMENTATION DU MATÉRIEL, débrancher le cordon.
- 3  **ÉQUIPEMENT DE CLASSE I ÉLECTRIQUE CE MATÉRIEL DOIT ÊTRE MIS A LA TERRE.** La prise de courant doit être branchée dans une prise femelle correctement mise à la terre car des tensions dangereuses risqueraient d'atteindre les pièces métalliques accessibles à l'utilisateur.

- 4  **EQUIPEMENT POUR BRANCHEMENT ELECTRIQUE**, la prise de sortie doit être placée près de l'équipement et facilement accessible".
- 5  **ATTENTION:** Ne pas bloquer les fentes d'aération, ceci empêcherait l'air ambiant de circuler librement pour le refroidissement.
- 6  **TEMPÉRATURE DE FONCTIONNEMENT:** Ce matériel est capable de tolérer une température ambiante maximum de ou 40 degrés Celsius.
- 7  **POUR TOUS PAYS:** Installer le matériel conformément aux normes électriques nationales et locales.








**Standardit:** Tämä tuote on seuraavien standardien mukainen.

- 1  **SALAMANISKUVAARA**  
**HENGENVAARA:** ÄLÄ TYÖSKENTELE laitteiden tai KAAPELEIDEN KANSSA SALAMOINNIN AIKANA.
- 2  **HUOMAUTUS:**VIRTAJOHTOA KÄYTETÄÄN VIRRANKATKAISULAITTEENA. VIRTA KATKAISTAAN irrottamalla virtajohto.
- 3  **SÄHKÖ - TYYPPILUOKAN I LAITTEET TÄMÄ LAITE TÄYTY MAADOITTA.**  
Pistoke täytyy liittää kunnollisesti maadoitettuun pistorasiaan. Virheellisesti johdotettu pistorasia voi altistaa met alliosat vaarallisille jännitteille.
- 4  **PISTORASIAAN KYTKETTÄVÄ LAITE:**pistorasia on asennettava laitteen lähelle ja siihen on oltava esteetön pääsy."
- 5  **HUOMAUTUS:** Ilmavaihtoreikiä ei pidä tukkia ja niillä täytyy olla vapaa yhteys ympäröivään huoneilmaan, jotta ilmanvaihto tapahtuisi.
- 6  **KÄYTTÖLÄMPÖTILA:**Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 40°C.
- 7  **KAIKKI MAAT:**Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.








**Standard:** Questo prodotto è conforme ai seguenti standard.

- 1  **PERICOLO DI FULMINI**  
**PERICOLO:** NON LAVORARE sul dispositivo o sui CAVI durante PRECIPITAZIONI TEMPORALESCHIE.
- 2  **ATTENZIONE:** IL CAVO DI ALIMENTAZIONE È USATO COME DISPOSITIVO DI DISATTIVAZIONE. PER TOGLIERE LA CORRENTE AL DISPOSITIVO staccare il cavo di alimentazione.
- 3  **ELETTRICITÀ - DISPOSITIVI DI CLASSE I**  
**QUESTO DISPOSITIVO DEVE AVERE LA MESSA A TERRA.** La spina deve essere inserita in una presa di corrente specificamente dotata di messa a terra. Una presa non cablata in maniera corretta rischia di scaricare una tensione pericolosa su parti metalliche accessibili.
- 4  **APPARECCHIATURA COLLEGABILE**, la presa va installata vicino all'apparecchio per risultare facilmente accessibile".
- 5  **ATTENZIONE:** le prese d'aria non vanno ostruite e devono consentire il libero ricircolo dell'aria ambiente per il raffreddamento.
- 6  **TEMPERATURA DI FUNZIONAMENTO:** Questo prodotto è concepito per una temperatura ambientale massima di 40 gradi centigradi.
- 7  **TUTTI I PAESI:** installare il prodotto in conformità delle vigenti normative elettriche nazionali.





**Sikkerhetsnormer:** Dette produktet tilfredsstiller følgende sikkerhetsnormer.







- 1  **FARE FOR LYNNEDSLAG**  
**FARE:** ARBEID IKKE på utstyr eller KABLER i TORDENVÆR.
- 2  **FORSIKTIG: STRØMLEDNINGEN BRUKES TIL Å FRAKOBLE UTSTYRET. FOR Å DEAKTIVISERE UTSTYRET, må strømforsyningen kobles fra.**
- 3  **ELEKTRISK - TYPE I- KLASSE UTSTYR DETTE UTSTYRET MÅ JORDES.**  
Strømkontakten må være tilkopleet en korrekt jordet kontakt. En kontakt som ikke er korrekt jordet kan føre til farlig spenninger i lett t ilgjengelige metalldeleer.
- 4  **UTSTYR FOR STIKKONTAKT.** Stikkontakten skal monteres i nærheten av utstyret og skal være lett tilgjengelig."
- 5  **FORSIKTIG:** Lufteventilene må ikke blokkeres, og må ha fri tilgang til luft med romtemperatur for avkjøling.
- 6  **DRIFTSTEMPERATUR:** Dette produktet er konstruert for bruk i maksimum romtemperatur på 40 grader celsius.
- 7  **ALLE LAND:** Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder.

**Padrões:** Este produto atende aos seguintes padrões.















- 1  **PERIGO DE CHOQUE CAUSADO POR RAIOS PERIGO:** NÃO TRABALHE no equipamento ou nos CABOS durante períodos suscetíveis a QUEDAS DE RAIOS.
- 2  **CUIDADO:** O CABO DE ALIMENTAÇÃO É UTILIZADO COMO UM DISPOSITIVO DE DESCONEXÃO. PARA DESELETRIFICAR O EQUIPAMENTO, desconecte o cabo de ALIMENTAÇÃO.
- 3  **ELÉTRICO - EQUIPAMENTOS DO TIPO CLASSE I**  
DEVE SER FEITA LIGAÇÃO DE FIO TERRA PARA ESTE EQUIPAMENTO. O plugue de alimentação deve ser conectado a uma tomada com adequada ligação de fio terra. Tomadas sem adequada da ligação de fio terra podem transmitir voltagens perigosas a peças metálicas expostas.
- 4  **EQUIPAMENTO DE LIGAÇÃO,** a tomada eléctrica deve estar instalada perto do equipamento e ser de fácil acesso."
- 5  **CUIDADO:** As aberturas de ventilação não devem ser bloqueadas e devem ter acesso livre ao ar ambiente para arrefecimento adequado do aparelho.
- 6  **TEMPERATURA DE FUNCIONAMENTO:** Este produto foi projetado para uma temperatura ambiente máxima de 40 graus centígrados.
- 7  **TODOS OS PAÍSES:** Instale o produto de acordo com as normas nacionais e locais para instalações elétricas.

**Estándares:** Este producto cumple con los siguientes estándares.

- 1  **PELIGRO DE RAYOS**  
**PELIGRO:** NO REALICE NINGUN TIPO DE TRABAJO O CONEXION en los equipos o en LOS CABLES durante TORMENTAS ELECTRICAS.
- 2  **ATENCIÓN:** EL CABLE DE ALIMENTACION SE USA COMO UN DISPOSITIVO DE DESCONEXION. PARA DESACTIVAR EL EQUIPO, desconecte el cable de alimentación.
- 3  **ELECTRICO - EQUIPO DEL TIPO CLASE I**  
ESTE EQUIPO TIENE QUE TENER CONEXION A TIERRA. El cable tiene que conectarse a un enchufe a tierra debidamente instalado. Un enchufe que no está correctamente instalado podría ocasionar tensiones peligrosas en las partes metálicas que están expuestas.
- 4  **EQUIPO CONECTABLE,** el tomacorriente se debe instalar cerca del equipo, en un lugar con acceso fácil".

-  **5**  **ATENCIÓN:** Las aberturas para ventilación no deberán bloquearse y deberán tener acceso libre al aire ambiental de la sala para su enfriamiento.
-  **6**  **TEMPERATURA REQUERIDA PARA LA OPERACIÓN:** Este producto está diseñado para una temperatura ambiental máxima de 40 grados C.
-  **7**  **PARA TODOS LOS PAÍSES:** Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

**Standarder:** Denna produkt uppfyller följande standarder.

-  **1**  **FARA FÖR BLIXTNEDSLAG**  
**FARA:** ARBETA EJ på utrustningen eller kablarna vid ÅSKVÄDER.
-  **2**  **VARNING:** NÄTKABELN ANVÄNDS SOM STRÖMBRYTARE FÖR ATT KOPPLA FRÅN STRÖMMEN, dra ur nätkabeln.
-  **3**  **ELEKTRISKT - TYP KLASS I UTRUSTNING**  
 DENNA UTRUSTNING MÅSTEVARA JORDAD. Nätkabeln måste vara ansluten till ett ordentligt jordat uttag. Ett felaktigt uttag kan göra att närliggande metalldelar utsätts för högspänning. Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk.
-  **4**  **UTRUSTNING MED PLUGG.** Uttaget skall installeras i utrustningens närhet och vara lättåtkomligt".
-  **5**  **VARNING:** Luftventilerna får ej blockeras och måste ha fri tillgång till omgivande rumsluft för avsvälvning.
-  **6**  **DRIFTSTEMPERATUR:** Denna produkt är konstruerad för rumstemperatur ej överstigande 40 grader Celsius.
-  **7**  **ALLA LÄNDER:** Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning.