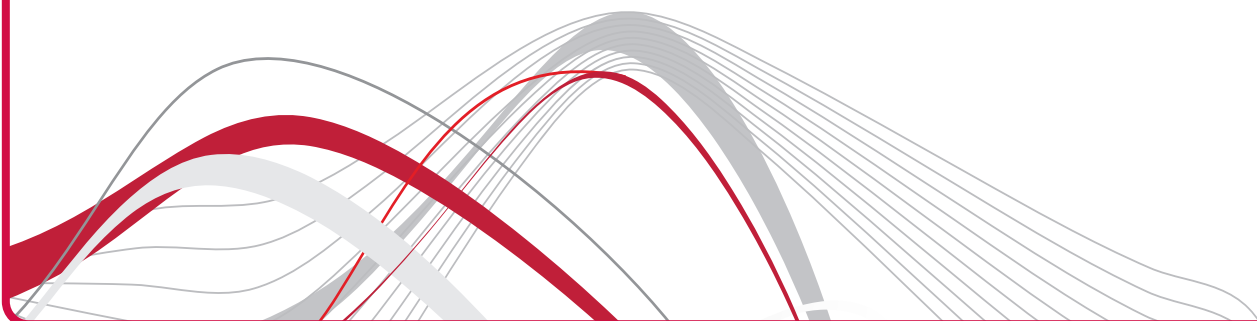




P.DG A4001N

Hardware User Manual



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Welcome

ABOUT THIS GUIDE

This guide describes how to install and configure the **P.DG A4001N**. This guide is intended for use by those responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks) and Internet Routers.

NAMING CONVENTION

Throughout this guide, the **P.DG A4001N** is referred to as the “Wireless Router”. Category 5 Ethernet Cables are referred to as Ethernet Cables throughout this guide.

CONVENTIONS

Table 1 and Table 2 list conventions that are used throughout this guide.

TABLE 1. Notice Icons



Icon	Notice Type	Description
	Information note	Information that describes important features or instructions.
	Caution	Information that alerts you to potential loss of data or potential damage to an application, system, or device.

TABLE 1. Notice Icons


Icon	Notice Type	Description
	Warning	Information that alerts you to potential personal injury.

TABLE 2. Text Conventions

Convention	Description
The words “enter” and “type”	When you see the word “enter” in this guide, you must type something, and then press Return or Enter. Do not press Return or Enter when an instruction simply says “type.”
Keyboard key names	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
Words in italics	Italics are used to: <ul style="list-style-type: none"> • Emphasize a point. • Denote a new term at the place where it is defined in the text. • Identify menu names, menu commands, and software button names. Examples: “From the <i>Help</i> menu, select <i>Contents</i>. Click <i>OK</i>.”

Introduction

INTRODUCTION

This manual is intended to describe the **P.DG A4001N** model. **P.DG A4001N** features an 802.11n 2x2 WiFi MIMO interface with two external antennas.

The **P.DG A4001N** is designed to provide a cost-effective mean of sharing a single broadband Internet connection between several wired and wireless computers. The Data Gateway also provides protection in the form of an electronic “firewall” preventing anyone outside of your network from seeing your files or damaging your computers.

The **P.DG A4001N** is an ADSL2+ Data Gateway, targeted to residential environments and SOHO customers, that provides routed broadband services from a single and modular access point.

The **P.DG A4001N** is the ideal solution for:

1. Connecting multiple PCs and Video game consoles;
2. Sharing broadband internet connections with all home computers;
3. Sharing printers and peripherals.








PACKAGE CONTENTS

Your new **P.DG A4001N** ADSL2+ Data Gateway kit contains the related hardware and software. In it you will find:

1. One P.DG A4001N unit
2. One Power Supply adapter
3. One Cable RJ-11 (black) 1,5m
4. One Cable RJ-45 (gray) 1,5 m
5. Quick Installation Guide

6. A CD-ROM
7. Safety leaflet

TABLE 1. Kit Material

	Quantity	DESCRIPTION
	1	<i>P.DG A4001N</i>
	1	<i>Power Adapter</i>
	1	<i>Ethernet CAT5 cable RJ-45 plug</i>
	1	<i>Phone cable RJ-11 plug (ADSL)</i>
	1	<i>CD-ROM</i>
	1	<i>Safety leaflet</i>
	1	<i>Quick Installation Guide</i>

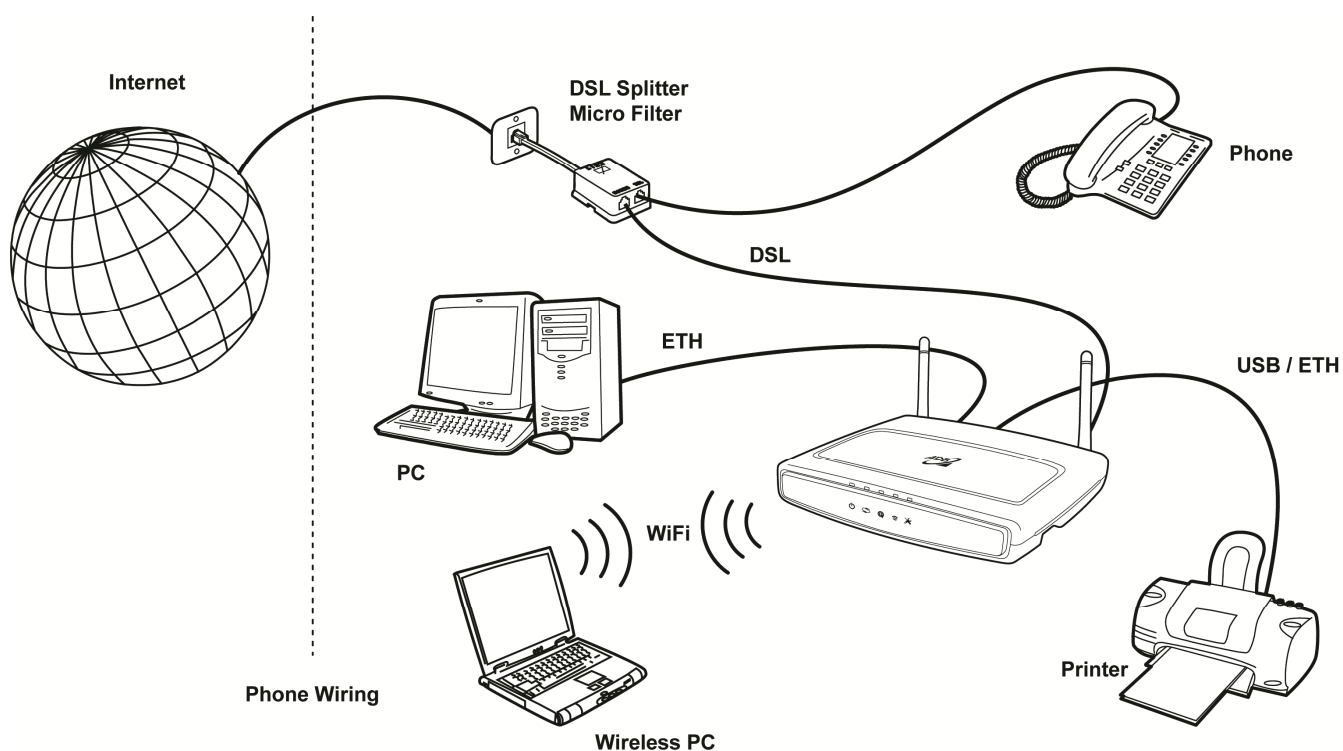
If any of the items included in the package is damaged, please contact your Service Provider.

It implements an high speed Asymmetric Digital Subscriber Line (ADSL2/2+) connection to the telephone line on the WAN side, as well as several local connectivity technologies on the LAN side:

- Four switched 10/100/1000 Base-T/TX Ethernet ports
- A Wi-Fi connection to hosts devices

Figure 1 shows a sample network: your Data Gateway becomes your connection to the Internet. Connections can be made directly to the Data Gateway expanding the number of computers you can have in your network.

FIGURE 1. Sample Home Network



DATA GATEWAY ADVANTAGES

The advantages of the **P.DG A4001N** include:

- Shared Internet connection for both wired and wireless computers
- High speed 802.11b/g/n wireless networking
- Cross-platform operation for compatibility with Microsoft® Windows, Linux and Apple® MAC computers
- Easy-to-use, Web-based setup and configuration
- Centralization of all network address settings (DHCP)
- A Virtual server to enable remote access to Web, FTP, and other services on your network
- A Security - Firewall protection - against Internet hacker attacks and encryption to protect wireless network traffic

APPLICATIONS

Many advantages networking features are provided by the **P.DG A4001N**:

- **Wireless and Wired LAN:** the Data Gateway provides connectivity to 10/100 Mbps devices, and wireless IEEE 802.11b/g/n compatible devices, making it easy to create a network in small offices or homes.
- **Internet Access:** this device supports Internet access through an ADSL connection. Since many DSL providers use PPPoE or PPPoA to establish communications with end users, the Data Gateway includes built-in clients for these protocols, eliminating the need to install these services on your computer.

HARDWARE DESCRIPTION

The Data Gateway contains an integrated ADSL2+ modem and connects to the Internet or to a remote site through the ADSL (RJ11) port. It can be connected directly through your PCs or to a local area network using the four Fast Ethernet LAN ports.

Access speed to the Internet depends on your service type. Full rate ADSL2+ (ITU G.992.5) provides up to 24 Mbps downstream and 1.3 Mbps upstream. G.lite (ITU G.992.2 or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 kbps upstream. However, you should note that the actual rate provided by specific service providers may vary dramatically from these upper limits.

Data passing between devices connected to your local area network can run at up to 100 Mbps over the Fast Ethernet ports and up to 300 Mbps over the built-in wireless access point.

The Data Gateway makes available one USB 2.0 host interface for advanced added value services such as file sharing.

MINIMUM SYSTEM AND COMPONENT REQUIREMENTS

Your Data Gateway requires the computer(s) and components in your network to be configured with at least the following:

- A computer with the Operating Systems that support TCP/IP networking protocols: Microsoft® Windows 98SE, Windows ME, Windows 2000, Windows XP 32bit, Vista 32bit, Windows 7 or Apple® MAC 10.x or Linux
- Internet access account from your Internet Service Provider (ISP)
- A PC using a dynamic IP address assigned via DHCP, as well as a gateway server address and DNS server address from your service provider
- A PC equipped with 10/100 Mbps Fast Ethernet adapter
- TCP/IP networks protocols installed on each PC that will access the Internet
- A Java-enabled web browser, such as Microsoft Internet Explorer 6.0 or above, Mozilla Firefox 2.0 or Above installed on one PC at your site for configuring the Data Gateway

FRONT PANEL

The front panel of the Data Gateway contains five indicator lights (LEDs) that help to describe the state of networking and connection operations.

FIGURE 2. Front Panel LEDs

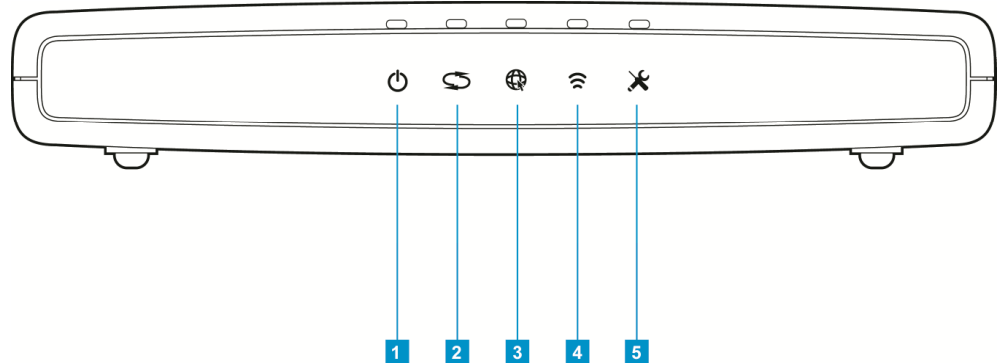


Table 2 LED Description

Ref	name	Colour	LED description (S) means Steady, (B) means Blinking	
1	Power	Green/ Red	Off	Power off
			Green(B)	Reading/Writing data from/to USB storage
			Green(S)	Power on. After the boot loader the LED becomes green.
			Red (B)	Boot is ended and there is a secure boot failure (i.e. the firmware signature is not valid)
			Red (S)	Boot is ended and there is: • Firmware module load error. • Boot failure or self test failed. • General error.
2	ADSL	Green	Off	No Cable connected / No WAN line active
			On (S)	ADSL link is up and connected
			On (B)	ADSL connection attempting synchronization
3	Internet	Green	Off	Modem power off, modem in bridged mode or DSL connection not present
			Green (S)	WAN connectivity available (PPP active)
			Green (B)	IP traffic is passing through the device (in both direction)
			Red (S)	WAN Protocol fail. PPP fail
4	Wi-Fi	Green/ Red	Off	Wireless functionality disabled
			Green (B)	• Wireless LAN activity present (traffic in both directions) • WPS (Wireless Protected Setup) procedure in process
			Green (S)	Client Registered
			RED (S)	Wi-Fi interface is ON and no encryption is enabled
5	Service	Green/Red	Off	no additional services are configured
			Green (B)	Service configuration/management activity is ongoing
			Green (S)	Additional service correctly configured
			RED (S)	Fail of the service

REAR PANEL

The rear panel of the Router contains a Reset Configuration to Factory Default button, a power adapter socket, a Power on button, four LAN ports, one ADSL port, a WPS button and one USB 2.0 device port.

FIGURE 3. Rear Panel Ports

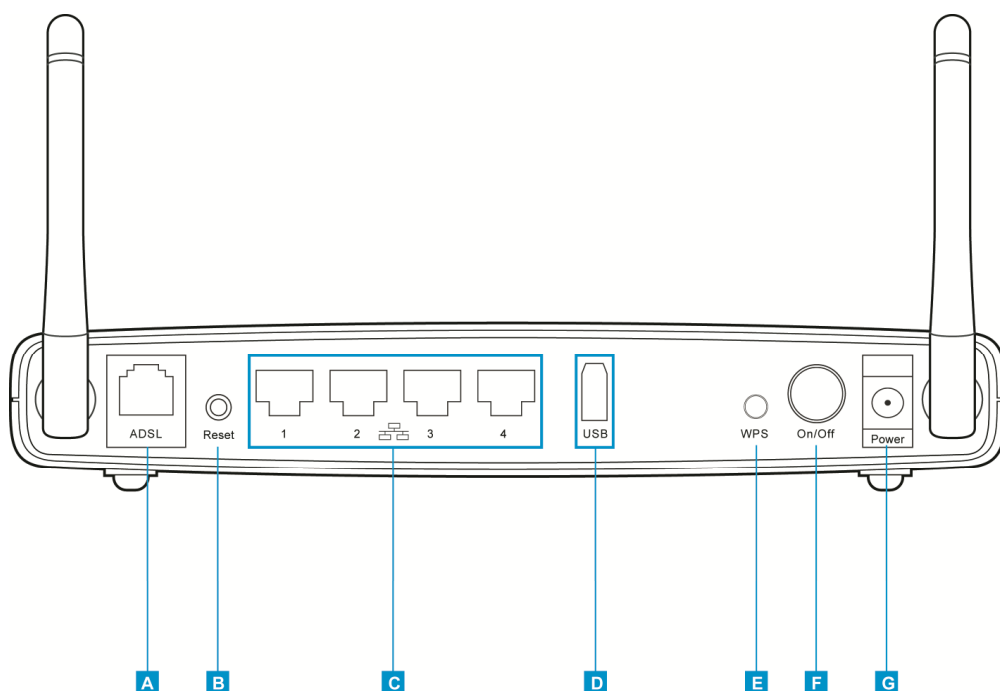


TABLE 2. Port Description

PORT	DESCRIPTION
A	Phone ADSL connector (ADSL2/2+)
B	Reset Configuration to factory default
C	Four Ethernet ports 10/100 Mbps
D	USB 2.0 port
E	WPS Button
F	Power Button
G	Power Adapter port



The WPS button is located on the rear panel. Press this button for at least 5 second when activating the WPS functionality.

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Hardware Installation

This chapter will guide you through a step by step configuration of your computer:

1. Positioning the **P.DG A4001N**
2. Installing Micro Filters
3. Connecting the Data Gateway to your network
4. Setting up your computer for networking with the Data Gateway

ISP SETTINGS

Please collect the following information from your ISP before setting up the Data Gateway:

- ISP dial-up phone number
- IP address for your ISP's Gateway Server and Domain Name Server
- An ISP account which includes ISP dial-up username and password
- IP address and subnet mask (for fixed IP users only)

POSITIONING THE DATA GATEWAY

The Data Gateway can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however, comply with the following guidelines:

- Keep the Data Gateway away from any heating devices
- Do not place the Data Gateway in a dusty or wet environment

You should also remember to turn off the power, remove the power cord from the outlet and keep your hands dry when you install the Data Gateway.

INSTALLING MICRO FILTERS

Before beginning installation you must locate devices in your house requiring a DSL filter such as phones, fax machines, answering machines, dial-up modems, Satellite TV dialers or monitored security systems and attach a DSL filter to any one of them sharing the same phone line as your DSL modem.

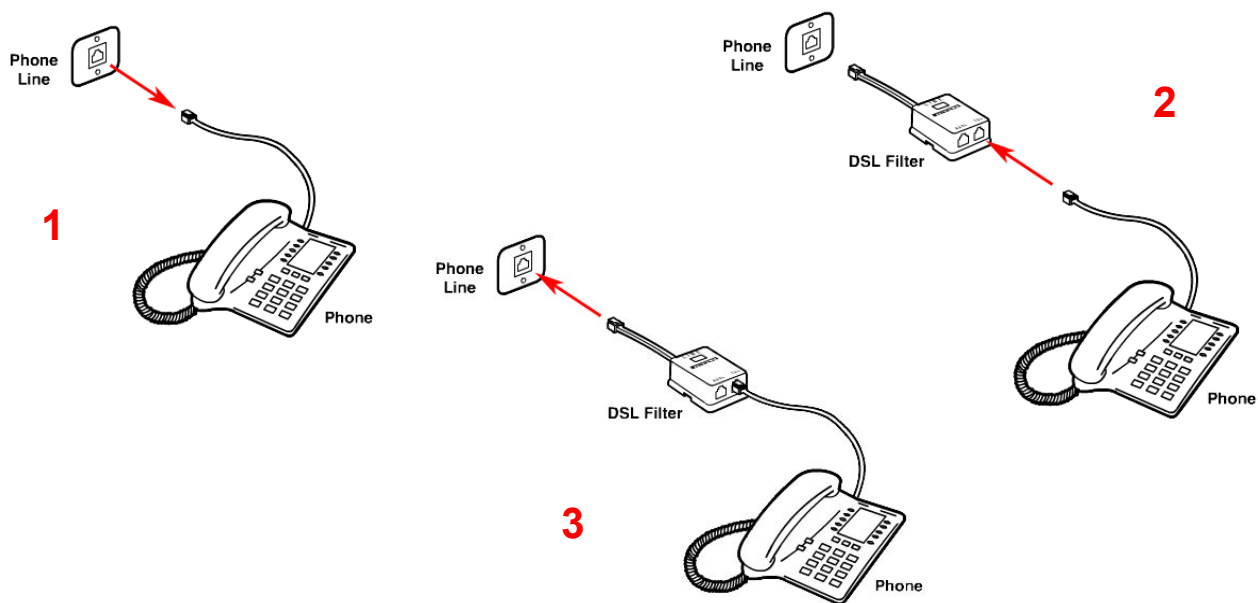
To install DSL filters please follow these steps:

1. Disconnect the phone cable from the telephone wall socket
2. Insert the phone cable into the DSL filter port identified with a phone symbol
3. Insert the DSL filter cable into the telephone wall socket



You do not need to attach a DSL filter to unused wall sockets.

FIGURE 2. Micro Filter Installation



POWERING UP THE DATA GATEWAY

To power up the Data Gateway:

1. Plug the power adapter into the power adapter port located on the rear of the Data Gateway
2. Plug the power adapter into a standard electrical wall socket
3. Press the Power button located on the rear panel of the Data Gateway
4. Wait for the power LED to turn steady green

In case of power input failure, the Data Gateway will automatically restart and begin to operate once the input power is restored.

If the Data Gateway is properly configured, it will take about 30 seconds to establish a connection with the ADSL service provider after powering up.

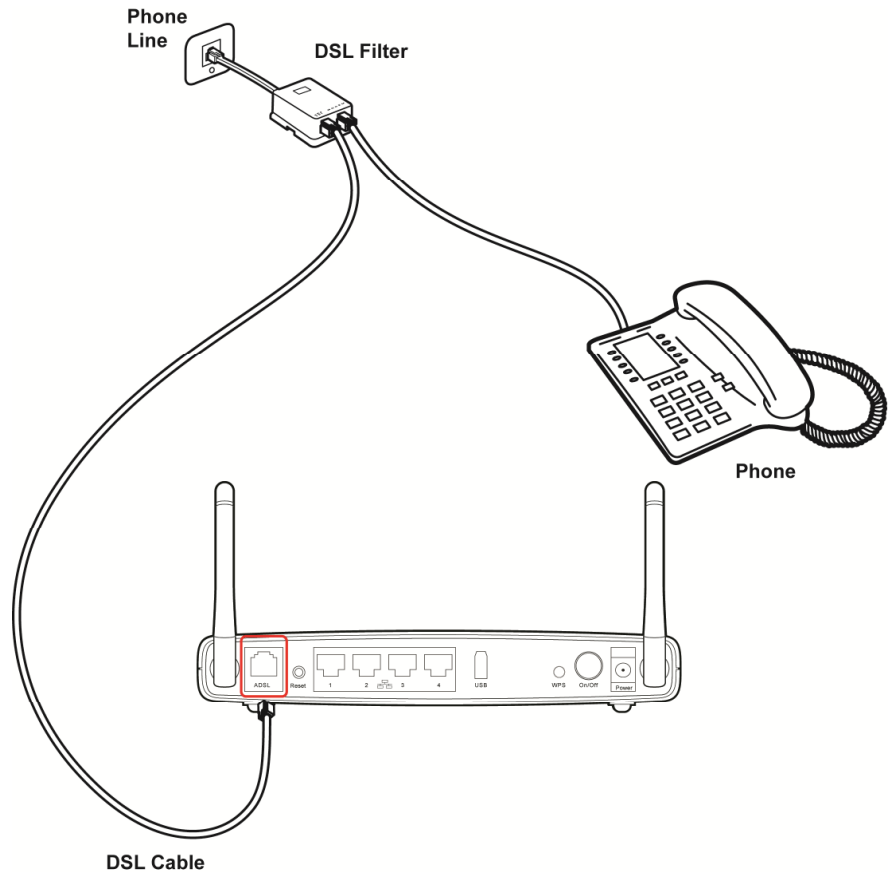
During this time the ADSL Sync indicator will flash. After the ADSL connection has been established, the ADSL Sync indicator will stay on.

CONNECTING THE DATA GATEWAY

The first step to install the Data Gateway is to physically connect it to the telephone socket and then to connect it to a computer with Ethernet connection.

To connect the phone cable:

1. Connect one end of the phone cable into the DSL filter port identified with a computer symbol
2. Connect the other end of the phone cable into the DSL port on the rear of the Data Gateway

FIGURE 3. Phone Cable Connection


To connect the Ethernet cable:

1. Connect one end of the Ethernet cable into one of the four Ethernet ports on the rear of the Data Gateway
2. Connect the other end of the Ethernet cable into the Ethernet Network card of your computer
3. Verify if the Ethernet Network card is configured as DHCP client, otherwise configure it to remain in the same local network of the Data Gateway interface (see chapter "Setting Up Your Computer")

The LAN port on the Data Gateway auto-negotiates the connection speed and the duplex mode with the connecting device.

Use twisted-pair cabling to connect the Data Gateway to an Ethernet adapter on your PC. Otherwise, cascade any of the LAN ports on the Data Gateway to an Ethernet hub or switch. When inserting an RJ-45 connector, be sure the tab on the connector clicks into position to ensure that is properly seated.

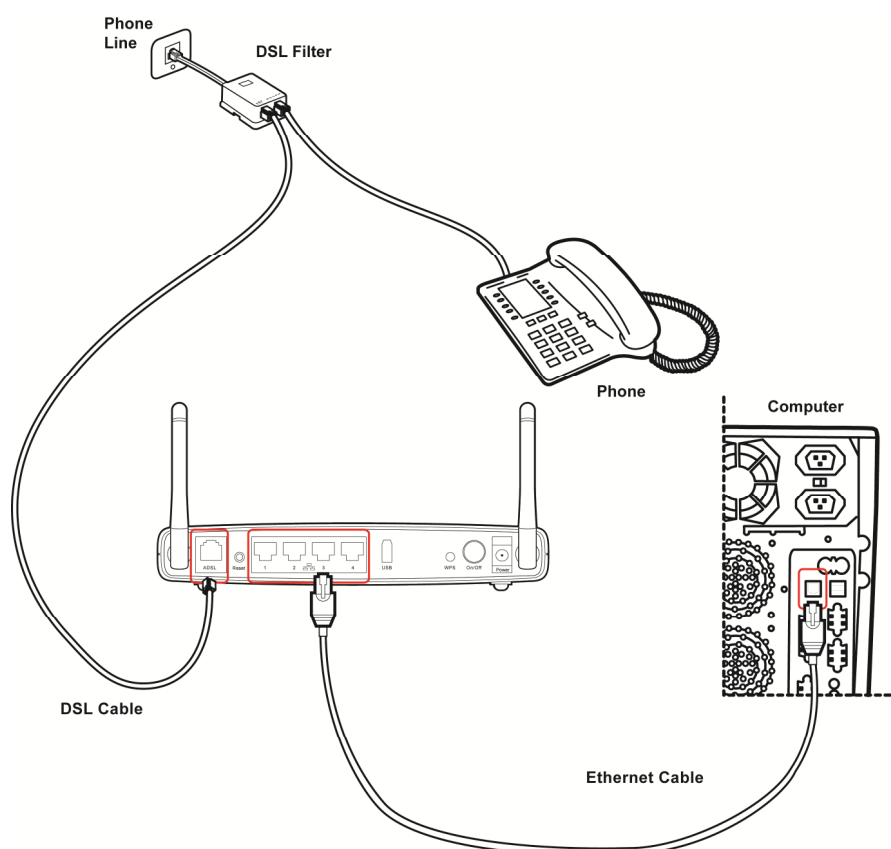


Do not plug a phone jack into RJ-45. This may damage the Data Gateway. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.



Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all Ethernet ports. We recommend using Category 5 cable for connections with the device. Also, make sure the length of each twisted-pair cable does not exceed 100 meters (328 feet).

FIGURE 4. Ethernet Cable Connection



The Data Gateway has the ability to dynamically allocate network addresses to the computers on your network using DHCP. However, your computers need to be configured correctly for this to take place. To change the configuration of your computers to allow this, follow the instructions in this chapter.

INSTALL SOFTWARE

The very first time you set up your computer, we recommend you to use the Smart Setup Configuration Utility if your ISP has provided you with.



*Before installing the **P.DG A4001N** software please close all applications to avoid any conflict.*

This utility offers a guided product tour, a step by step hardware installation guide, a software installation guide, a setup and a driven user registration with DSL Internet connection line check.

Smart Setup Configuration Utility allows, for supported Microsoft® Windows Operating Systems, to setup automatically your computer Ethernet settings.

To launch it, insert the CD-ROM in CD-ROM unit: if the auto-play function is enabled it will start automatically, otherwise open it manually from "x:", where x is your CD-ROM drive letter.

ETHERNET CONNECTION

You have to verify the existence of a TCP/IP protocol stack and, then, according to your Operating System, to establish an Ethernet connection to the Data Gateway. This connection will require you to enable your computer to receive from the Data Gateway its own IP Address automatically: in such a case, the Data Gateway acts like the DHCP server in your local network.

TCP/IP CONFIGURATION

To access the Internet through the Data Gateway, you must configure the network settings of the computers on your LAN to use the same IP subnet as Data Gateway. The default IP settings for the Data Gateway are:

IP ADDRESS: 192.168.1.1

SUBNET MASK: 255.255.255.0

These settings can be changed to fit your network requirements, but you must first configure at least one computer to access the Data Gateway's web configuration interface in order to make the required changes.

ETHERNET CONNECTION >> TCP/IP PROTOCOL INSTALLATION

This procedure requires the TCP/IP protocol installed on your computer. Refer to the following paragraphs and to your Windows and MacOS operating systems manuals.

Microsoft Windows 98SE, ME, 2000

1. Insert your Windows installation CD-ROM into the CD-ROM drive.
2. Starting from *Start -> Settings -> Control Panel* or *Start -> Control Panel* depending on the configuration of your computer.
3. Make a double click on the *Network and Dial-up Connections* icon.
4. Select the interested *Network Adapter* icon and from the contextual menu, do select the *Properties* item.
5. If the *Internet Protocol (TCP/IP)* component is not checked you must enable it by checking the *Internet Protocol (TCP/IP)* item; otherwise, if it is not listed, you must install it by selecting the *Install...* button.
6. Choose the *Protocol Network* component and click on the *Add..* button.
7. In the *Select Network Protocol* panel, do choose *Internet Protocol (TCP/IP)* and the *OK* button.
8. After rebooting, you're ready to configure the *TCP/IP* setting, as described in the following paragraphs.

Microsoft Windows XP

TCP/IP stack is considered a core component of the operating system, so it cannot be installed or uninstalled. You must check in this case that *Internet Protocol (TCP/IP)* is enabled. To do so, follow these steps:

1. Starting from *Start -> Settings -> Control Panel* or *Start -> Control Panel* depending on the configuration of your computer.
2. Make a double click on the *Network Connections* icon.
3. Select the *Network Adapter* icon and from the contextual menu, do select the *Properties* item.
4. In the *General TAB* panel, verify that *Internet Protocol (TCP/IP)* item is checked; if not, do check it and click on the *OK* button.

Microsoft Windows Vista / Windows 7

TCP/IP stack is considered a core component of the operating system, so it cannot be installed or uninstalled. You must check in this case that *Internet Protocol (TCP/IP)* is enabled. To do so, follow these steps:

1. Starting from *Start -> Control Panel -> Network & Internet -> Network Connections* depending on the configuration of your computer.
2. Select the *Network Adapter* icon and from the contextual menu, do select the *Properties* item.
3. In the *General TAB* panel, verify that *Internet Protocol v4 (TCP/IPv4)* item is checked; if not, do check it and click on the *OK* button.

Apple MacOS 10.x

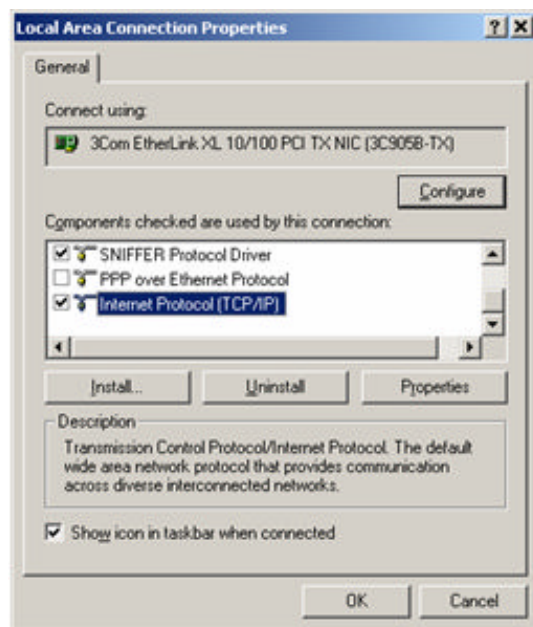
TCP/IP is installed on a MacOS system as part of Open Transport.

ETHERNET CONNECTION >> MS WINDOWS 98SE, ME, 2000

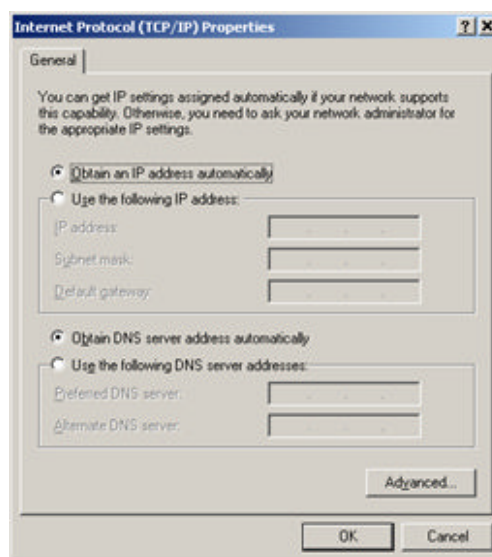
To configure TCP/IP on these Operating Systems follow these steps:

1. Select *Start -> Settings -> Control Panel* and make a double click on the *Network and Dial-up Connection* icon.
2. Select the adapter card interested by TCP/IP configuration and then select the *Properties* item from its contextual menu.
3. Select *Internet Protocol (TCP/IP)* item then click on *Properties* button.

FIGURE 5. Local Area Connection Properties



4. Select the *General* TAB panel, then check the *Obtain an IP address automatically* and *Obtain DNS server address automatically* radio buttons. Click on *OK* button.

FIGURE 6. Internet Protocol (TCP/IP) Properties


5. A system reboot will be required to make the changes real.

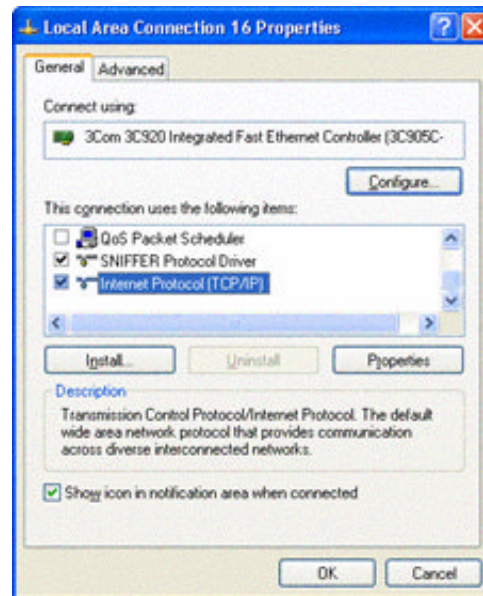
ETHERNET CONNECTION

>> MS WINDOWS XP

To configure TCP/IP on MS Windows XP Operating System follow these steps:

1. Select *Start -> Settings -> Control Panel* and make a double click on the *Network Connections* icon.
2. Select the adapter card interested by TCP/IP configuration.
3. Select the *Properties* item from the contextual Adapter Card menu.
4. Select in the *General* TAB panel, the *Internet Protocol (TCP/IP)* item and then click on *Properties* button.

FIGURE 7. Local Area Connection Properties



5. In the *General* TAB panel, check the *Obtain an IP address automatically* radio button and the *Obtain DNS server address automatically* radio button. Click on *OK* button.

FIGURE 8. Internet Protocol (TCP/IP) Properties



ETHERNET CONNECTION

>> MS WINDOWS VISTA / WINDOWS 7

To configure TCP/IP on MS Windows Vista / Windows 7 Operating Systems follow these steps:

1. Select *Start -> Control Panel -> Network & Internet* and make a double click on the *Network Connections* icon.
2. Select the adapter card interested by TCP/IP configuration.
3. Select the *Properties* item from the contextual Adapter Card menu.
4. Select in the *General* TAB panel, the *Internet Protocol (TCP/IPv4)* item and then click on *Properties* button.
5. In the *General* TAB panel, check the *Obtain an IP address automatically* radio button and the *Obtain DNS server address automatically* radio button. Click on *OK* button.

DISABLE HTTP PROXY

You need to verify that the “*HTTP proxy*” feature of your web browser is disabled. This is required in order that your browser can view the Gateway’s HTML configuration pages.

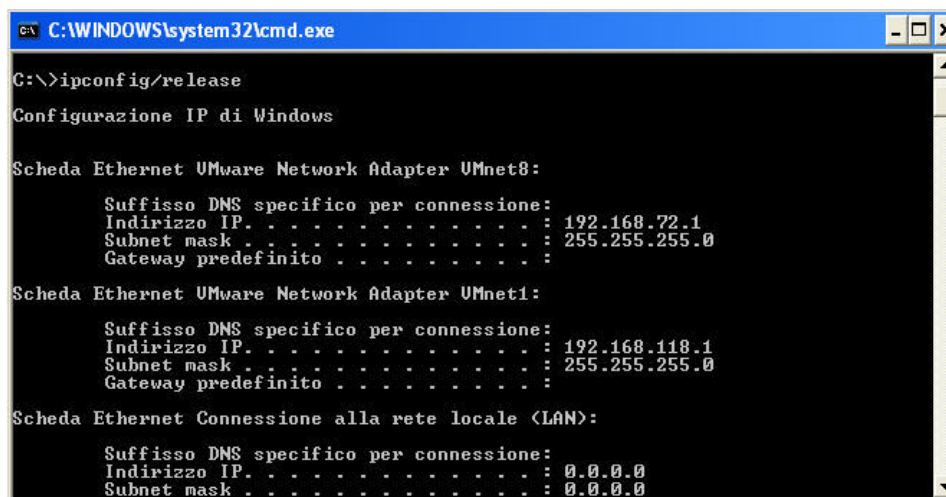
OBTAIN IP SETTINGS FROM YOUR DATA GATEWAY

>> MS WINDOWS 98SE, ME, 2000

Now that you’ve configured your computer to connect to your Data Gateway, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Data Gateway, you can verify that you’ve configured your computer correctly.

1. On the Windows desktop, select the *Start > Programs > Accessories > Command Prompt* menu item
2. In the Command prompt window, type “*ipconfig/release*” and press the *ENTER* key

FIGURE 9. Command Prompt (IPCONFIG command)



```

C:\WINDOWS\system32\cmd.exe
C:\>ipconfig /release

Configurazione IP di Windows

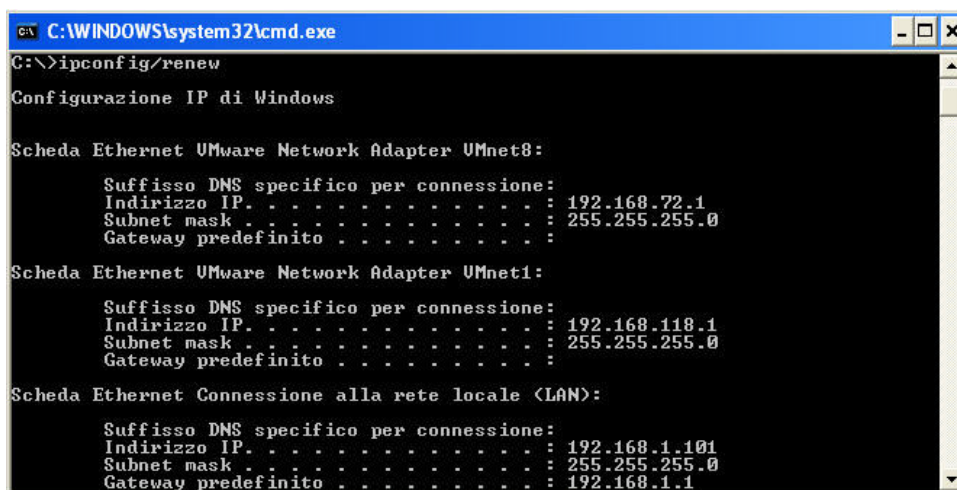
Scheda Ethernet VMware Network Adapter VMnet8:
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 192.168.72.1
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . :

Scheda Ethernet VMware Network Adapter VMnet1:
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 192.168.118.1
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . :

Scheda Ethernet Connessione alla rete locale (LAN):
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 0.0.0.0
    Subnet mask . . . . . : 0.0.0.0
  
```

3. Type "*ipconfig/renew*" and press the *ENTER* key. Verify that your IP Address is now 192.168.1.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.1.1. These values confirm that your ADSL Data Gateway is functioning.

FIGURE 10. Command Prompt (IPCONFIG command)



```

C:\WINDOWS\system32\cmd.exe
C:\>ipconfig /renew

Configurazione IP di Windows

Scheda Ethernet VMware Network Adapter VMnet8:
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 192.168.72.1
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . :

Scheda Ethernet VMware Network Adapter VMnet1:
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 192.168.118.1
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . :

Scheda Ethernet Connessione alla rete locale (LAN):
    Suffisso DNS specifico per connessione:
    Indirizzo IP. . . . . : 192.168.1.101
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . : 192.168.1.1
  
```

4. Close the Command Prompt window

OBTAIN IP SETTINGS FROM YOUR DATA GATEWAY >> MS WINDOWS XP / VISTA /

7

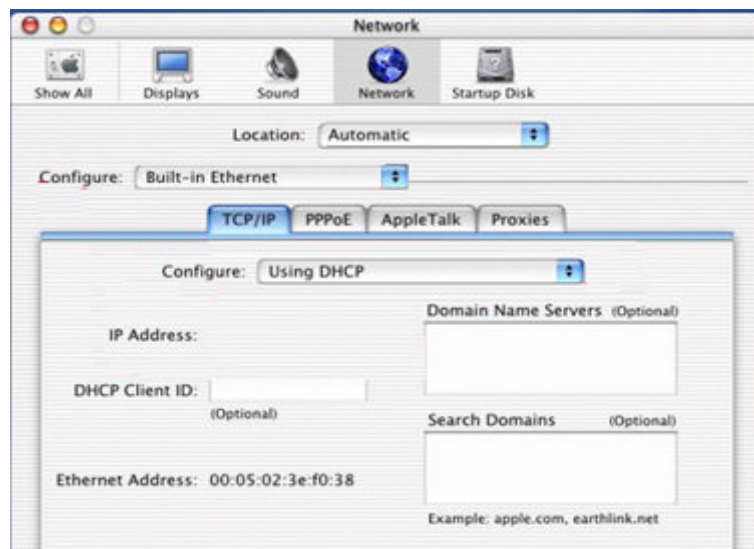
Now that you've configured your computer to connect to your Data Gateway, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Data Gateway, you can verify that you've configured your computer correctly.

1. On the Windows desktop, click *Start > Programs > Accessories > Command Prompt* menu item
2. In the Command prompt window, type "*ipconfig/release*" and press the *ENTER* key
3. Type "*ipconfig/renew*" and press the *ENTER* key. Verify that your IP Address is now 192.168.1.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.1.1. These values confirm that your ADSL Data Gateway is functioning
4. Close the Command Prompt window

ETHERNET CONNECTION >> MAC OS 10.X

To configure TCP/IP on MAC OS 10.x follow these steps:

1. Open the *Apple Menu > System Preferences* and select *Network*.
2. From the *Show* drop down list, according to the type of connection used, select *Built-in Ethernet*.
3. Select the *TCP/IP* tab.
4. Select *DHCP* from the *Configure* pop-up menu to have a dynamic IP address. Click *Apply Now*.
5. Click on the *Register* button to save the changes in the Control Panel.
6. Enter *http://192.168.1.1/* in the address bar of your browser to open the **P.DG A4001N** Home Page.

FIGURE 11. Network panel on MAC OS 10.x


WI-FI CONNECTION



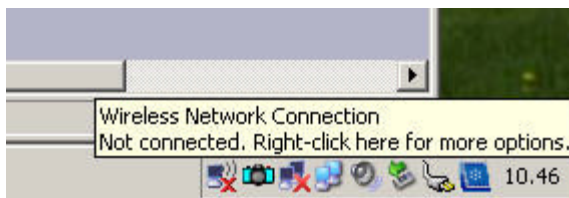
It requires a computer with 802.11b/g/n (Wi-Fi Certified) wireless adapter installed.

1. Install your wireless adapter according to the manufacturer's instructions and verify that your computer is set to obtain an IP address automatically (DHCP mode).
2. Upon wireless adapter installation and driver setup, please check in the *Network Connections* panel – accessible through your *OS Control Panel* – that the Wireless Network Connection is **enabled**. If not, enable it by right clicking on the Wireless Network Connection item and by selecting “**Enable**”.
3. In case of an hardware wireless switch, please check that it is set to ON. Usually a steady lighted or flashing led will notify you the wireless connection up. Please consult your PC or notebook manual to get information on proper hardware switching and related led behavior.

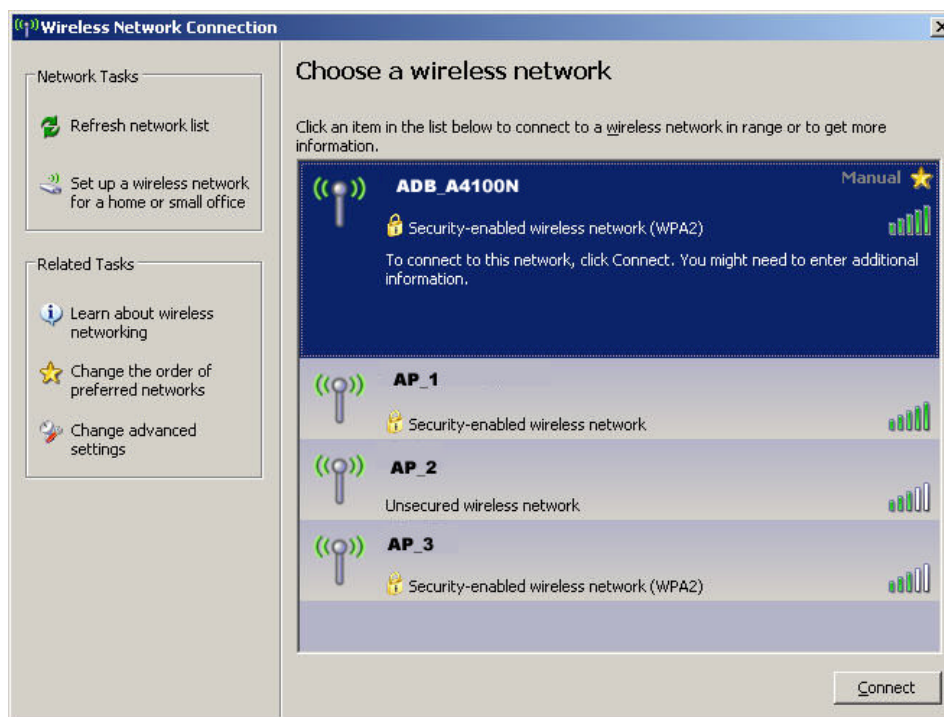


*You will need to properly configure your adapter to communicate with the **P.DG A4001N** according to the configuration rules.*

4. An icon will be shown in the quick tray icon bar at the bottom of your screen to notify you the current wireless connection state (see Figure 12)

FIGURE 12. Wireless connection icon (Windows XP)


5. By double clicking on the wireless icon, a panel will appear showing you all available wireless network

FIGURE 13. Wireless network connection panel (Windows XP)


6. Double click on the SSID of the **P.DG A4001N** in the Access Points list
7. A panel will appear asking you to insert the wireless key as defined in Chapter 7 ("Wireless Section").

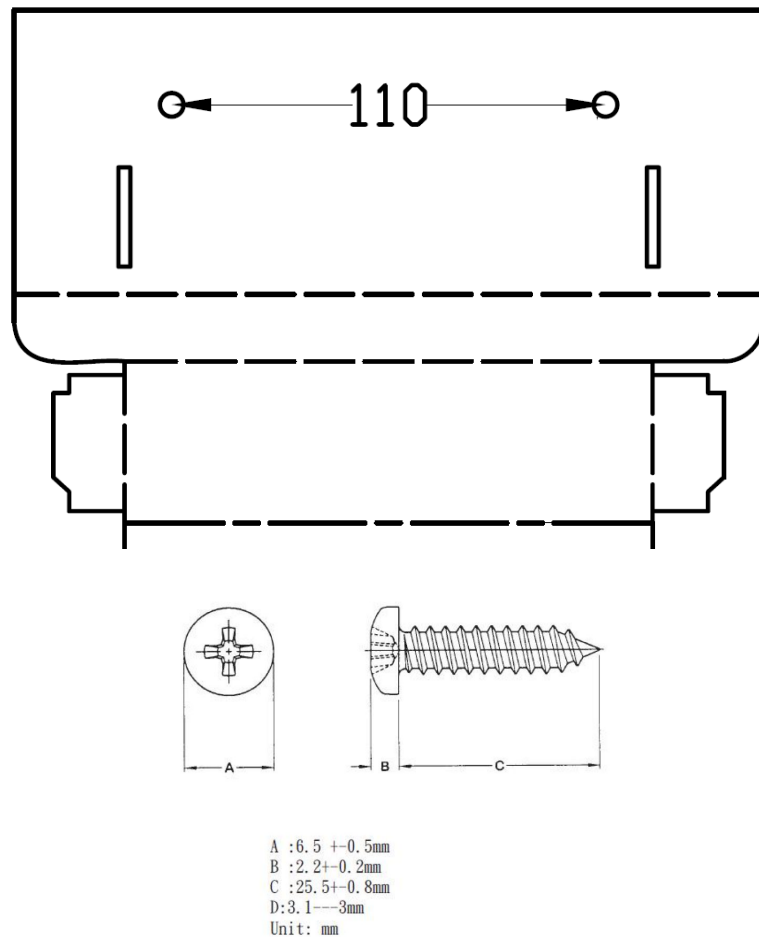
WALL MOUNTING

The router is conceived to be mounted also on a wall by means of the two holes located on the bottom of the device itself. In order to do that you will need two wall anchors, two screws, the wall-mounting template depicted on the box and a drill. The modem can be mounted only horizontally.

Please note that the screws are not included in the box; therefore before you begin be sure to have the following items:

- 2 wall anchors and 2 screws (see picture below)
- A drill
- The wall-mounting template (see picture below)

FIGURE 14. Wall Mounting Template and Screws

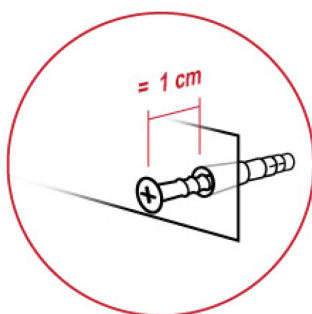


The router can be positioned at any convenient wall in your office or home. You should, however, comply with the following guidelines:

- Place the router in a location that allows the cables to reach its connectors without strain.
- Allow enough space between the back panel of the wireless router and the surface underneath in order to easily plug the cables.
- Mount the router in a way that allows you to remove it for any maintenance operation without the need to disconnect the cables.

Instruction:

1. Position the template on the wall and make a mark on the two holes
2. Drill two holes on the marks location
3. Install the anchors and the screws into the wall. Be sure to leave a gap between the screw head and the wall (see picture below)



4. Mount the router on the screws heads.



Verify that no cables or wires are connected to the wireless router during the wall mounting.

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Technical Specifications

This section lists the technical specifications for the **P.DG A4001N**.

Interfaces/Standard

WAN Interface

N°1 Line port (RJ-11 plug) supporting the following standards:

- ADSL (G.992.1, G992.2, T1.413, G994.1, G.997.1)
- ADSL2 (G.992.3)
- ADSL2+ (G992.5)

Annex A/Annex B are available in different product version

LAN Interface

- N° 4 10/100BASE-T/TX Ethernet ports (RJ-45 plug), compliant IEEE 802.3, with auto MDIX and auto-negotiation
- N°1 USB Host v. 2.0 (optional)

Wireless Interface

Wi-Fi access point solution is compliant with:



- IEEE 802.11b/g/n
- WPA/WPA2 (IEEE 802.11i)
- WMM (IEEE 802.11e)
- Nr. 2 antennas
- WPS Push Button

DSL (ATM) Features

- AAL5 (ITU-T I.363.5)
- UBR, VBR-nrt, VBR-rt, CBR traffic classes
- Multiple VC/PPP connections
- Multi-protocol encapsulation over AAL5, RFCs 2684
- Up to 8 PVC
- Pre-emptive SAR
- Possibility of multiple physical queues (up to 8) per traffic class, with priority-based scheduling support
- OAM (ITU-T I.610)
 - F4, F5
 - Loop-back
- Encapsulation modes in ATM stack: LLC SNAP and VC-Mux

WAN Protocol Encapsulation

- Bridged/Routed Ethernet over ATM (RFC 2684 / RFC 1483)
- PPP over Ethernet (RFC 2516)
- PPP over ATM (RFC 2364)
- IP over ATM (RFC 1577)

Routing / Bridging

- IPv4
- RIP v1/v2 and static routing
- NAT/NAPT, RFCs 3022, Static NAT/NAPT
- DHCP Server/Client/Relay
- DNS relay
- VPN pass-through
- Application Level Gateway (ALGs) modules
- Spanning tree protocol
- IP Multicasting – IGMP v1, v2, v3
- Transparent Bridging (IEEE802.1d)

QoS

- IP QoS
- Traffic shaping (ATM layer)
- Priority-based scheduling (up to 8* queues, max 4 per PVC)
- Diffserv (RFC2474, RFC2475) marking and queuing according to connection type, network interface, MAC, IP
- Port based QoS

Security

- Programmable firewall, Stateful Packet Inspection (SPI) Firewall
- IP protocol filtering

Management

- Broadband Forum TR-069 CPE Management Protocol:
 - Auto- configuration and dynamic service provisioning
 - Software/firmware image management
 - Status and performance monitoring
- TFTP client for remote firmware upgrade
- Diagnostics and LOGs
- Telnet with CLI
- WEB server with Admin/User configuration Pages

Environmental Specifications

Temperature (ETS 300-019-1-3):

- Operating: +0° to 40° C
- Non Operating: -20° to 65°C

Relative Humidity (ETS 300-019-1-3):

- Operating: 10% to 90% non-condensing
- Non Operating: 5% to 95% non-condensing

Power Adapter

- INPUT: 100/240Vac 50/60 Hz
- OUTPUT: 12Vdc 1A



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