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INTRODUCTION

The **DISCUS™ DRG A225G** is designed to provide a cost-effective means of sharing a single broadband Internet connection between several wired and wireless computers. The Router 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 Router offers VoIP functionalities through 2 VoIP channels allowing you to use existing analog phones.

The **DISCUS™ DRG A225G** is an ADSL2+ router, targeted to residential environments and SOHO customers, that provides routed broadband services from a single and modular access point.

The **DISCUS™ DRG A225G** is the ideal solution for:

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

Package Contents

Your new **DISCUS™ DRG A225G** ADSL2+ Router kit contains the related hardware and software. In it you will find:

- 1. One **DISCUS™ DRG A225G** unit
- 2. One Power Supply adapter
- 3. One Ethernet CAT5 cable with RJ-45 plug
- 4. One USB cable
- 5. One phone cable RJ-11 plug (ADSL)
- 6. One User Manual
- 7. One Quick Installation Guide
- 8. One CD-ROM



TABLE 1. Kit Material

	Quantity	DESCRIPTION
	1	DISCUS™ DRG A225G
6	1	Switching Power Supplier Adapter
	1	Ethernet Cable
	1	USB Cable
	1	Phone Cable
	1	User Manual
	1	Quick Installation Guide
	1	CD-ROM

If any of these items is missing or damaged, please contact your retailer.

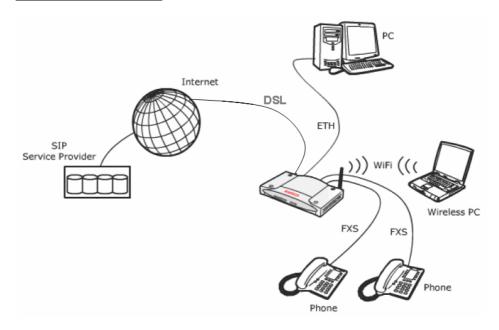


It implements an "always-on" high speed Asymmetric Digital Subscriber Line (ADSL2/2+) connection to the telephone line on the WAN side, as well several local connectivity technologies on the LAN side:

- Four switched 10/100 Base-TX Ethernet ports
- One Universal Serial Bus 1.1 (USB) connection to a host PC
- One IEEE 802.11b/g Wireless LAN access point
- Two FXS ports to analog phones

Figure 1 shows a sample network.

Figure 1 Sample Network





Front Panel

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

Figure 2 LEDs

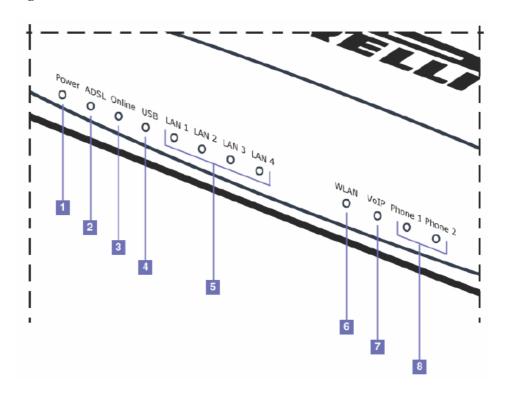


Table 1 LED Description

Ref.	LED	LED Colour	LED Description	
	0	on	Power On	
1	1 Power Green	off	Power Off or failure	
2 ADSL Link Green			on	DSL connected
	Green	Blinking	DSL attempting synchronization	
		off	No Cable connected / No DSL line active	
3 Online	Green	on	For PPPoA or PPPoE connections this LED will be on when PPP authentication is successful	
		off	PPP authentication failed or your connection is not using PPPoA or PPPoE	

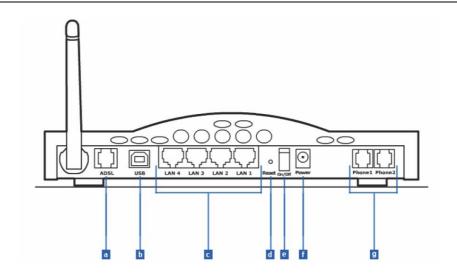


4 USB Green	C	on	USB Link Established	
	Green	off	No USB Link established	
5 Ethernet Gr		on	Ethernet Link established	
	Green	Blinking	LAN activity present (traffic in either direction)	
		off	No Ethernet Link established	
6 Wireless LAN	Green	Blinking	Wireless LAN activity present (traffic in either direction)	
		off	Wireless functionality disabled	
7 VoIP Gre	Craan	on	The VoIP connection is up	
	Voir Green	off	VoIP connection down	
8 Phone		on	The phone is Off-Hook	
	Phone	Phone Green	Blinking	Incoming call
			off	No call in progress

Rear Panel

The rear panel of the Router contains a reset button, a power on/off button, a power adapter port, four LAN ports, one ADSL port, one USB device port and two FXS ports.

FIGURE 4. Rear Panel





PORT	DESCRIPTION
а	Phone DSL connector (ADSL2/2+)
b	USB 1.1 Device port
С	Four Ethernet ports 10/100 Mbps
d	Reset to factory default button
е	Power button
f	Power connector
g	FXS ports



Do not force the antenna beyond its mechanical stops. Rotating the antenna further may cause damage.



HARDWARE INSTALLATION

Positioning the router

You should place the Router in such a location to ensure that:

- It is located near an electrical outlet and a phone wall socket
- Water or moisture cannot enter the case of the unit
- It is out of direct sunlight and away from sources of heat
- The cabling is away from power lines, fluorescent lighting fixtures, and sources of electrical noise such as radios, transmitters and broadband amplifiers.
- It is centrally located with respect to the wireless devices that will be connected to the Router. A suitable location might be on top of a high shelf to ensure the maximum coverage for all connected devices.



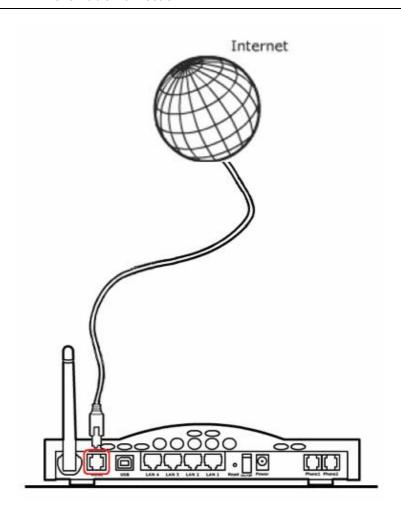
Connecting the router

The first step to install the router is to physically connect it to the telephone socket and then to connect it to a computer by means of an Ethernet or an USB connection.

To connect the phone cable:

- 1. Connect one end of the phone cable into the telephone socket.
- 2. Connect the other end of the phone cable into the DSL port on the rear of the Router

FIGURE 1. Phone Cable Connection

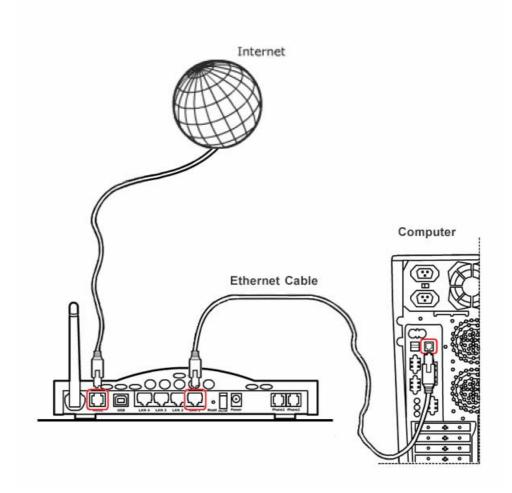




To connect the Ethernet cable:

- 1. Connect one end of the Ethernet cable into one of the four Ethernet ports on the rear of the Router
- 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 router interface.

FIGURE 2. Ethernet Cable Connection





To connect the USB cable, follow the procedure according to your Operating System:

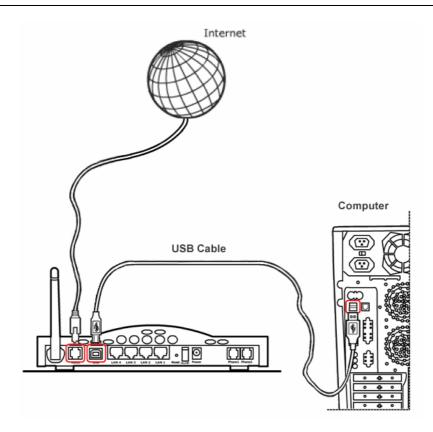
WINDOWS

- 1. Connect one end of the USB cable into the USB port of your PC
- 2. Browse till x:\USB driver folder (where "x" is the CD-ROM drive unit letter); launch the "setup.exe" executable ("x:\USB driver\setup.exe") and follow setup instructions
- 3. The setup software will invite you to plug the other end of the USB cable into the USB port on the rear of the Router

MAC 10.x

- 1. Connect one end of the USB cable into the USB port of your PC
- 2. Connect the other end of the USB cable into the USB port on the rear of the Router. The Operating System will automatically recognize the device

FIGURE 3. USB Cable Connection





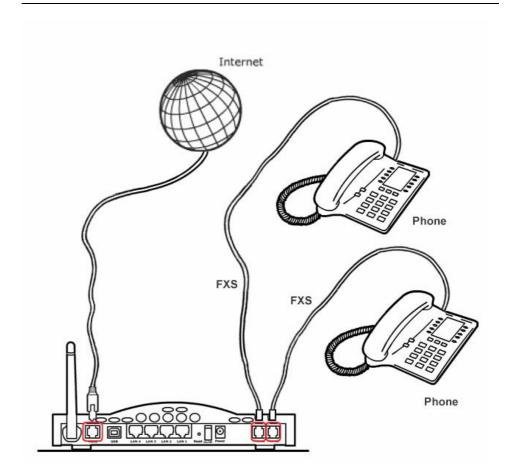
Don't plug the other end of the USB cable until setup software will ask you to do it.



Connecting the phones

To connect the phones please refer to the following picture. You can connect only phone set(s) which comply with the Hungarian regulations.

FIGURE 4. Phones Connection





SETUP WIZARD

The Router setup program is web based, which means that it is accessed through your web browser.

To access to Router's web server:

- 1. Launch your web browser on the computer
- 2. Enter the following URL in the location or address field of your browser: http://192.168.1.254



The Router comes with a default IP address (192.168.1.254). If you change it, please take note of the new Router's IP address, otherwise a "Reset to Factory Default" operation should be done to be able to access again to the Router.

Access to DSL router configuration pages is controlled through user accounts. The default one is the *user* account



The default username and password are both set to "3play". It is recommended to change these default values. Make sure you remember your user name and password, since this is the only way you will be able to manage your Router

The Setup Wizard enables speedy and accurate configuration of your Internet connection and other important parameters.

FIGURE 5. Setup Wizard Panel



To go on with the Setup wizard, press the **NEXT** button.



ISP Parameters

To activate your internet connection, you should insert the data provided by your ISP. Please insert the user name and the Password.

FIGURE 6. ISP Parameters Panel



Wireless

This page allows you to enable the wireless functionality of the router. For additional information please refer to chapter "Wireless".

FIGURE 7. Wireless Panel



Firewall

This page allows you to enable the firewall functionality of the router. The device provides extensive firewall protection by restricting connection parameters to limit the risk of hacker attack, and defending against a wide array of common attacks. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a demilitarized zone (DMZ).



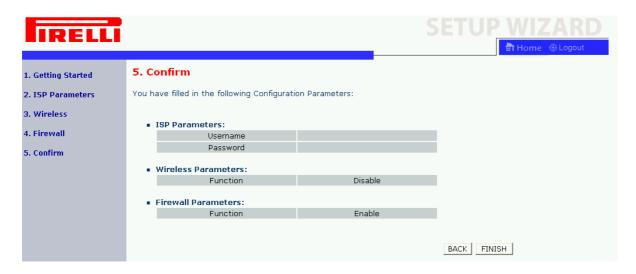
FIGURE 8. Firewall Panel



Confirm

Check that all entered data are correct and then press the **FINISH** button to save your data on the Router and, if everything has been properly set, to start surfing.

FIGURE 9. Confirm Panel



WIRELESS

The gateway can be quickly configured as a wireless access point by setting the service set identifier (SSID) and channel number. It also supports encryption and client filtering.

Channel and SSID

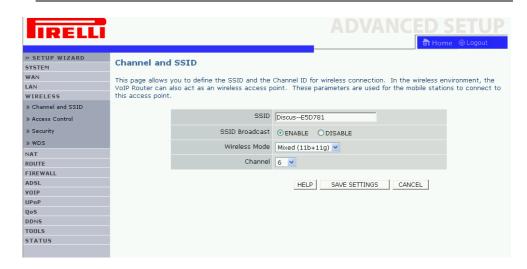
This page allows you to define the SSID and the Channel ID for wireless connection. These parameters are used for the mobile stations to connect to this access point. You must specify a common radio channel and SSID (Service Set ID) to be used by the Router and all of its wireless clients. Be sure you configure all of its clients to the same values

Table 2 Channel and SSID Parameters Table

Parameter	Description
SSID	Service Set ID. The SSID must be the same on the VoIP Router and all of its wireless clients.
SSID Broadcast	Enable or disable the broadcasting of the SSID. Disabling SSID broadcast will provide increased security by hiding the SSID of your wireless network.
Wireless Mode	This device supports both 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have. You may use "Mixed (11b+11g)" to provide compatibility with both 11b and 11g wireless clients.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the VoIP Router and all of its wireless clients. The VoIP Router will automatically assign itself a radio channel, or you may select one manually.



FIGURE 10. Channel and SSID Panel



Wireless Security

To make your wireless network safe, you should turn on the security function. The VoIP Router supports the following security mechanism:

- WPA/WPA2
- WPA2 Only
- WEP
- Disabled

To enable one of the above encryption methods, access the "security" pages located at the following path: Wireless>>Security. By default the WPA/WAP2 method is enabled.

WPA/WPA2 and WPA2 Only

Wi-Fi Protected Access (WPA) combines temporal key integrity protocol (TKIP) and 802.1x mechanisms. It provides dynamic key encryption and 802.1x authentication service.

Wi-Fi Protected Access 2 (WPA2) is a product certification that is available through the Wi-Fi Alliance. WPA2 certifies that wireless equipment is compatible with the IEEE 802.11i standard. The WPA2 product certification formally re-



places Wired Equivalent Privacy (WEP) and the other security features of the original IEEE 802.11 standard. The goal of WPA2 certification is to support the additional mandatory security features of the IEEE 802.11i standard that are not already included for products that support WPA.

FIGURE 11. Security



In order to configure this scenario refer to Table 3.

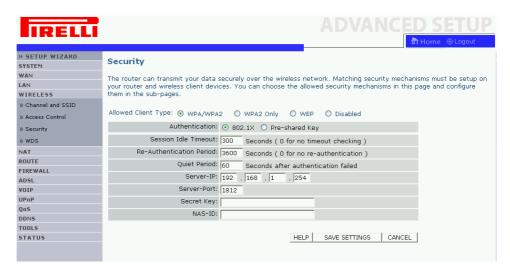
Table 3 WPA/WPA2 parameters settings

Parameter	Description
Authentication	Choose 802.1x or Pre-shared Key to use as the authentication:
	• 802.1x: for the enterprise network with a RADIUS server. Refer to Table 4 802.1x Authentication parameters.
	 Pre-shared key: for the SOHO network environment without an authentication server.method.
Pre-shared key type	Select the key type to be used in the Pre-shared Key.
Pre-shared Key	Type in the key here.



If 802.1X is used in your network, then you should enable this function for the VoIP Router.

FIGURE 12. IEEE 802.1X



Please refer to the following table.

Table 4 802.1x Authentication parameters

Parameter	Description
Authentication	Choose 802.1x authentication option.
Session Idle timeout	Defines a maximum period of time for which the connection is maintained during inactivity.
Re-Authentication period	Defines a maximum period of time for which the authentication server will dynamically re-assign a session key to a connected client.
Quiet Period	Defines a maximum period of time for which the VoIP Router will wait between failed authentications.
Server IP	The IP address of your authentication server.
Server Port	The port used for the authentication service.
Secret Key	The secret key shared between the authentica-



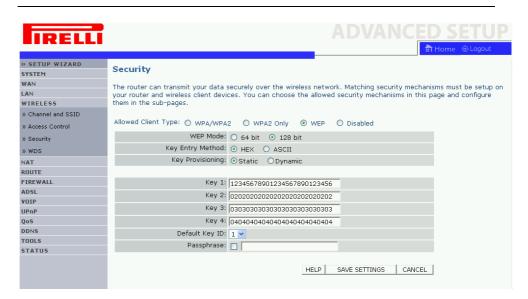
	tion server and its clients.
NAS-ID	Defines the request identifier of the Network Access Server.

WEP.

Wired Equivalent Privacy (WEP) is a shared key encryption mechanism for wireless networking. Encryption strength is 64 bit or 128 bit.

If you want to use WEP to protect your wireless network, you need to set the same parameters for the VoIP Router and all your wireless clients.

FIGURE 13. WEP



In order to configure this scenario please refer to the following table.

Table 5 WEP parameters settings

Parameter	Description
WEP Mode	Select 64 bit or 128 bit key to use for encryption.
Key Entry Method	Select Hex or ASCII to use for encryption key.
Key Provisioning	Select Static if there is only one fixed key for encryption. If you want to select Dynamic, you would need to enable 802.1x function first.



You may automatically generate encryption keys or manually enter the keys. To generate the key automatically with passphrase, check the *Passphrase* box and enter a string of characters.

Select the default key from the drop down menu.

Click the SAVE SETTINGS button.



Be aware that any configuration changes could compromise your connectivity.

To manually configure the encryption key, enter five hexadecimal pairs of digits for the 64-bit key, or enter 13 pairs for the 128-bit key (An hexadecimal digit is a number or letter in the range 0-9 or A-F.)



WEP protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

STATUS

The Status screen displays WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients connected to your network. The security log may be saved to a file by clicking **Save** and choosing a location.

The following information is available on the Status screen:

Table 6 Status Parameters

Parameter	Description
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, as well as DHCP Server and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface and for the VoIP Router, as well as the hardware version and serial number.
ATM PVC	Displays ATM connection type and status.

FIGURE 14. Status





SAFETY INFORMATION

This section contains directions that you must follow for your personal safety.

Follow all directions carefully. You must read the following safety information carefully before you install or remove the unit.



- Use only the power adapter that is supplied with the unit. The use of an alternative adapter can damage the Router and invalidate the warranty.
- Use an electrical outlet within easy distance and do not damage the power cable.
- To avoid electrical shock, do not open the Router.
- To prevent fire or shock hazard, do not expose your Router to rain or moisture, liquid and toxic substances.
- Particular care must be taken during installation and removal of cables and telephone line.
- Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- Ensure the correct ventilation to the Router. Do not obstruct the air conducts and do not lean anything over.
- Verify to place the Router out of direct sunlight and away from sources of heat.
- Avoid using your Router during an electrical storm.
- The Router generates and uses Radio Frequency (RF) energy. In some environments, the use of RF energy is not permitted. The user should seek local advice on whether or not RF energy is permitted within the area of intended use.



CERTIFICATIONS

CE Mark

We, Pirelli BroadBand Solutions SpA, Viale Sarca, 222 - 20126 Milano - www.Pirelli.com - Italy declare under our own responsibility that the product **DISCUS™ DRG A225G** (P/N 151070501) to which this declaration refers conforms with the relevant standards according to the regulation in Article 3.1.a, 3.1.b and 3.2 of the R&TTE Directive 1999/5/EEC of the European Community

Standards Applied:

- EN 55022
- EN 61000-3-2
- EN 61000-3-3
- EN 301 489-1
- EN 301 489-17
- EN 300 328
- EN 60950-1

National Authorities were informed according to Article 6.4 of Frequency Notification.

Special Requirements are considered. The product is labeled with CE Marking.



Any unauthorized modification of the product voids this declaration.



WEEE

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

DIRECTIVE 2002/96/EC



This product complies with the WEEE Directive (2002/96/EC) marking requirement. The affixed product label (see above) indicates that you must not discard this electrical/electronic product in domestic household waste.

Product category: With reference to the equipment types in the WEEE directive Annex 1, this product is classified as an "IT and telecommunications equipment" product.

Do not dispose in domestic household waste.

GLOSSARY

802.11b

The IEEE specification for wireless Ethernet which allows speeds of up to 11 Mbps. The standard provides for 1, 2, 5.5 and 11 Mbps data rates. The rates will switch automatically depending on range and environment.

802.11g

The IEEE specification for wireless Ethernet which allows speeds of up to 54 Mbps. The standard provides for 6, 12, 24, 36, 48 and 54 Mbps data rates. The rates will switch automatically depending on range and environment.

10BASE-T

The IEEE specification for 10 Mbps Ethernet over Category 3, 4 or 5 twisted pair cable.

100BASE-TX

The IEEE specification for 100 Mbps Fast Ethernet over Category 5 twisted-pair cable.

Access Point

An Access Point is a device through which wireless clients connect to other wireless clients and which acts as a bridge between wireless clients and a wired network, such as Ethernet. Wireless clients can be moved anywhere within the coverage area of the access point and still connect with each other. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless client radio traffic and forwarding wireless client messages to the Ethernet LAN.

Channel

Similar to any radio device, the Wireless Cable/DSL router allows you to choose different radio channels in the wireless spectrum. A channel is a particular frequency within the 2.4GHz spectrum within which the Router operates.



DHCP

Dynamic Host Configuration Protocol. This protocol automatically assigns an IP address for every computer on your network. Windows 95, Windows 98 and Windows NT 4.0 contain software that assigns IP addresses to workstations on a network. These assignments are made by the DHCP server software that runs on Windows NT Server, and Windows 95 and Windows 98 will call the server to obtain the address. Windows 98 will allocate itself an address if no DHCP server can be found.

DNS Server Address

DNS stands for Domain Name System, which allows Internet host computers to have a domain name (such as pirelli.com) and one or more IP addresses (such as 192.168.10.8). A DNS server keeps a database of host computers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "pirelli.com" into your Internet browser), the user is sent to the proper IP address. The DNS server address used by the computers on your home network is the location of the DNS server your ISP has assigned.

DSL

Short for digital subscriber line, but is commonly used in reference to the asymmetric version of this technology (ADSL) that allows data to be sent over existing copper telephone lines at data rates of from 1.5 to 9 Mbps when receiving data (known as the downstream rate) and from 16 to 640 Kbps when sending data (known as the upstream rate). ADSL requires a special ADSL modem. ADSL is growing in popularity as more areas around the world gain access.

DSL modem

DSL stands for digital subscriber line. A DSL modem uses your existing phone lines to send and receive data at high speeds.

Encryption

A method for providing a level of security to wireless data transmissions. The Router uses two levels of encryption; 40/64 bit and 128 bit. 128 bit is a more powerful level of encryption than 40/64 bit.

Ethernet

A LAN specification developed jointly by Xerox, Intel and Digital Equipment Corporation. Ethernet networks use CSMA/CD to transmit packets at a rate of 10 Mbps over a variety of cables.

Firewall

Electronic protection that prevents anyone outside of your network from seeing your files or damaging your computers.



IEEE

Institute of Electrical and Electronics Engineers. This American organization was founded in 1963 and sets standards for computers and communications.

IΡ

Internet Protocol. IP is a layer 3 network protocol that is the standard for sending data through a network. IP is part of the TCP/IP set of protocols that describe the routing of packets to addressed devices. An IP address consists of 32 bits divided into two or three fields: a network number and a host number or a network number, a subnet number, and a host number.

IP Address

Internet Protocol Address. A unique identifier for a device attached to a network using TCP/IP. The address is written as four octets separated with periods (full-stops), and is made up of a network section, an optional subnet section and a host section.

ISP

Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN

Local Area Network. A network of end stations (such as PCs, printers, servers) and network devices (hubs and switches) that cover a relatively small geographic area (usually not larger than a floor or building). LANs are characterized by high transmission speeds over short distances (up to 1000 metres).

MAC

Media Access Control. A protocol specified by the IEEE for determining which devices have access to a network at any one time.

MAC Address

Media Access Control Address. Also called the hardware or physical address. A layer 2 address associated with a particular network device. Most devices that connect to a LAN have a MAC address assigned to them as they are used to identify other devices in a network. MAC addresses are 6 bytes long.

Mbps

Megabits per second.



Network

A Network is a collection of computers and other computer equipment that are connected for the purpose of exchanging information or sharing resources. Networks vary in size, some are within a single room, others span continents.

Protocol

A set of rules for communication between devices on a network. The rules dictate format, timing, sequencing and error control.

PPPoA

Point-to-Point Protocol over ATM. PPP over ATM is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dialup connection.

PPPoE

Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a method of data transmission originally created for dial-up connections; PPPoE is for Ethernet connections.

RJ-45

A standard connector used to connect Ethernet networks. The "RJ" stands for "registered jack".

Router

A device that acts as a central hub by connecting to each computer's network interface card and managing the data traffic between the local network and the Internet.

Server

A computer in a network that is shared by multiple end stations. Servers provide end stations with access to shared network services such as computer files and printer queues.

SSID

Service Set Identifier. Some vendors of wireless products use SSID interchangeably with ESSID.

Subnet mask

A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid



IP address numbers recognized by the Internet, which must assigned by Inter-NIC).

TCP/IP

Transmission Control Protocol/Internet Protocol. This is the name for two of the most well-known protocols developed for the interconnection of networks. Originally a UNIX standard, TCP/IP is now supported on almost all platforms, and is the protocol of the Internet.

TCP

It relates to the content of the data travelling through a network — ensuring that the information sent arrives in one piece when it reaches its destination. IP relates to the address of the end station to which data is being sent, as well as the address of the destination network.

VCI

VCI - Virtual Channel Identifier. The identifier in the ATM (Asynchronous Transfer Mode) cell header that identifies to which virtual channel the cell belongs.

VPI

VPI - Virtual Path Identifier. The field in the ATM (Asynchronous Transfer Mode) cell header that identifies to which VP (Virtual Path) the cell belongs.

WAN

Wide Area Network. A network that connects computers located in geographically separate areas (for example, different buildings, cities, or countries). The Internet is an example of a wide area network.

WEP

Wired Equivalent Privacy. A shared key encryption mechanism for wireless networking. Encryption strength is 40/64 bit or 128 bit.

Wi-Fi

Wireless Fidelity. This is the certification granted by WECA to products that meet their inter operability criteria. (see also 802.11b, WECA)

Wi-Fi Alliance

The Wi-Fi Alliance is a trade group, owning the trademark to Wi-Fi, aiming at performing the testing, certifying interoperability of products and promoting the technology.



Wireless Client

The term used to describe a desktop or mobile PC that is wirelessly connected to your wireless network

Wizard

A Windows application that automates a procedure such as installation or configuration.

WLAN

Wireless Local Area Network. A WLAN is a group of computers and devices connected together by wireless in a relatively small area (such as a house or office).

WPA

Wi-Fi Protected Access. A dynamically changing encryption mechanism for wireless networking. Encryption strength is 256 bit.

