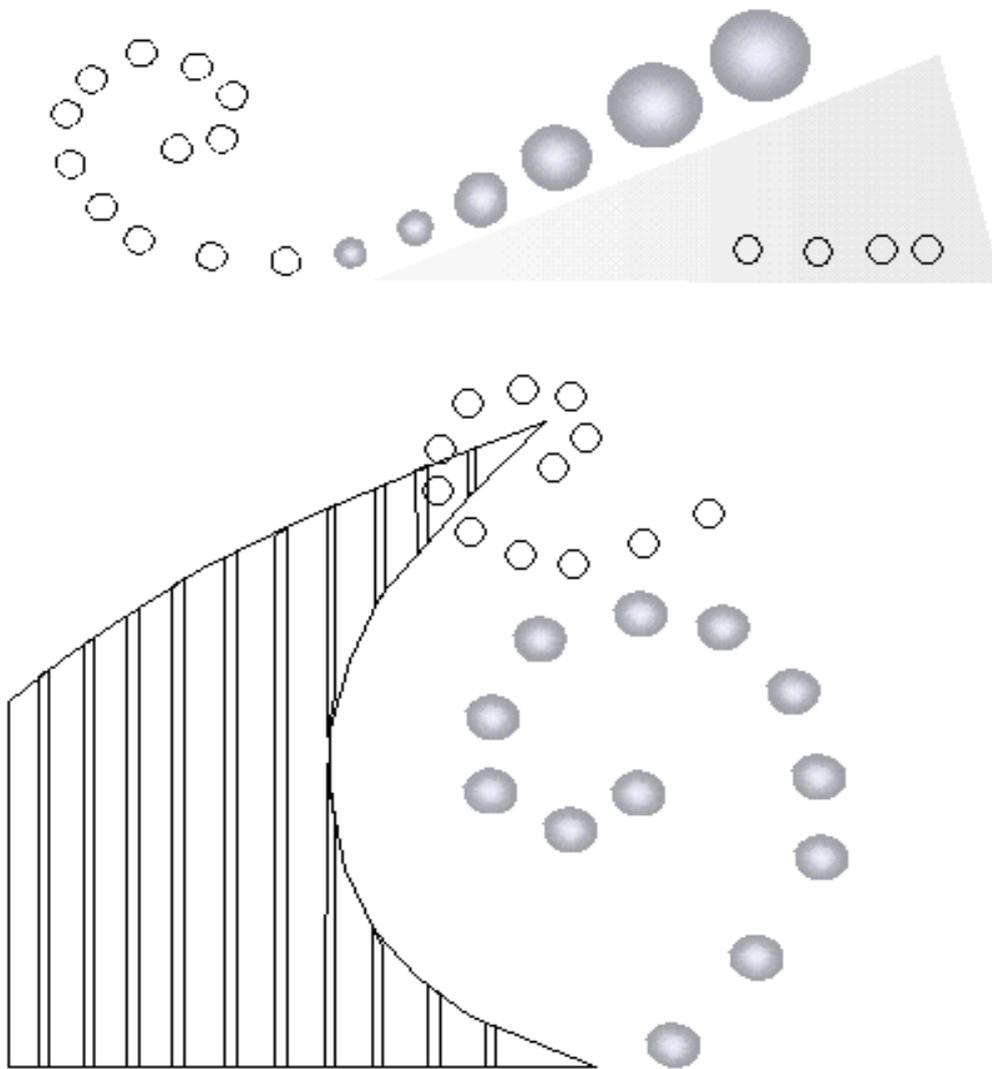


AR1061

1-port ADSL2+ Router

User's Manual



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M/C: TDSL-1061AR-UM
DC: 960910B-2

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause interference to radio communications. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against radio interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

CE Declaration of Conformity

This equipment complies with the requirements relating to electromagnetic compatibility, EN55022 class B for ITE and EN 50082-1. This meets the essential protection requirements of the European Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Environment

The device you have purchased, as well as any used batteries must not be disposed of with household waste. You should return these to your distributor if they are able to replace or dispose of them in an approved recycling centre.

Trademarks

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WARNING!

1. Read all installation instructions carefully before connecting the device to its power source.
2. To reduce the risk of electric shock, do not remove the cover from this device or attempt to dismantle it. Opening or removing covers may expose you to dangerous voltage levels. Equally, incorrect reassembly could cause electric shock on re-use of the appliance.
3. Do not expose this device to Fire, direct sunlight or excessive heat.
4. Do not expose the device to rain or moisture and do not allow it to come into contact with water.
5. Do not install the this device in an environment likely to present a THREAT OF IMPACT.
6. You may clean this device using a fine damp cloth. Never use solvents (such as trichloroethylene or acetone), which may damage the device's plastic surface. Never spray this device with any cleaning product whatsoever.
7. Take care not to scratch the surface of plastic housings.
8. The device is designed to work in temperatures from 5°C to 40°C.
9. The this device must be installed at least 1 meter from radio frequency equipment, such as TVs, radios, hi-fi or video equipment (which radiate electromagnetic fields).
10. Do not connect the LAN/PC port to any network other than an Ethernet network.
11. Do not attempt to upgrade your this device in an unstable power environment. This could cause unexpected issues.
12. Do not work on the system or connect or disconnect cables during lightning storms.
13. Children don't recognize the risks of electrical appliances. Therefore use or keep this device only under supervision of adults or out of the reach from children.
14. No repair can be performed by the end user, if you experience trouble with this equipment, for repair or warranty information, please contact your supplier.

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1 Introduction

The AR1061 is an ADSL2+ router that can be used to connect to a twisted copper pair ADSL2+ broadband network. The AR1061 is backwards compatible to all ADSL modulation technology including G.lite, G.dmt, T1.413, ADSL2 and ADSL2+. AR1061 also supports various internet service provider networks via common WAN protocol such as PPPOE, PPPOA, Bridge/MER 1483 modes. With advanced features such as remote configuration, the AR1061 reduces provisioning, maintenance and deployment overheads and ensures a hassle free user experience. Leveraging adoption of Annex-M DSL technology, the AR1061 is capable to provide increased upstream rates to better fulfill growing demand from the SOHO/SMB user. Compliant to Annex L technology, the AR1061 can reach users in a larger service radius increasing the operators' Central Office user density. The AR1061 is a reliable and full-featured ADSL2+ router capable of supporting data traffic and IP services which allows for minimum overhead deployment.

This User's Manual mainly contains the guidance to install and configure this ADSL2+ Router using the Web GUI.

2 System Overview

2.1 General Description

This AR1061 Router is a high-speed ADSL Ethernet router that is specifically designed to connect to the Internet and to directly connect to your local area network (LAN) via high-speed 10/100 Mbps Ethernet, or wireless LAN (WLAN). The ADSL modem is compatible with the latest ADSL standards, including ADSL2 and ADSL2+, and supports up to 24 Mbps downstream and 1.5 Mbps upstream to deliver true broadband speed and throughput.

To ensure fully compatibility, the DSL device was tested with all major DSLAMs, and support standard 10/100 Mbps Base-T Ethernet interface Auto MDI / MDIX 10/100 Switch function allowing user easily to link to PC or other Switches/Hubs. The DSL device is an idea solution for multi-users utilizing build-in channel mode (PPPoE/A, IPoA, IPoE), IP routing, NAT functionalities sharing the ADSL link. The DSL device is also a perfect solution for the residential users, it supports the users with bridge mode in host based PPPoE Client.

2.2 Specifications

ADSL Standard

- ITU-T G.992.1(G.dmt)
- ANSI T1.413 Issue 2
- G.992.2 (G.lite)
- G.994.1 (G.hs)
- Auto-negotiating rate adaptation
- ADSL2 G.dmt.bis (G.992.3)
- ADSL2 G.lite.bis (G.992.4)
- ADSL2+ (G.992.5)

Software Features

- RFC-1483/2684 LLC/VC-Mux bridged/routed mode
- RFC-1577 Classical IP over ATM
- RFC-2516 PPPoE
- RFC-2364 PPPoA
- ITU-T 1.610 F4/F5 OAM send and receive loop-back
- 802.1d Spanning-Tree Protocol
- DHCP Client/Server/Relay
- NAT
- RIP v1/v2
- DNS Relay Agent
- DMZ support
- IGMP Proxy/Snooping
- Packet Inspection
- Protection against Denial of Service attacks
- IP Packet Filtering
- QoS
- Dynamic DNS

Management

- Web-based Configuration
- Menu-driven Command-line Interpreter
- Telnet Remote Management
- SNMP v1/v2/Trap
- Firmware upgrade through FTP, TFTP and HTTP
- Configuration backup/restore
- Diagnostic Tool

3 Hardware Installation

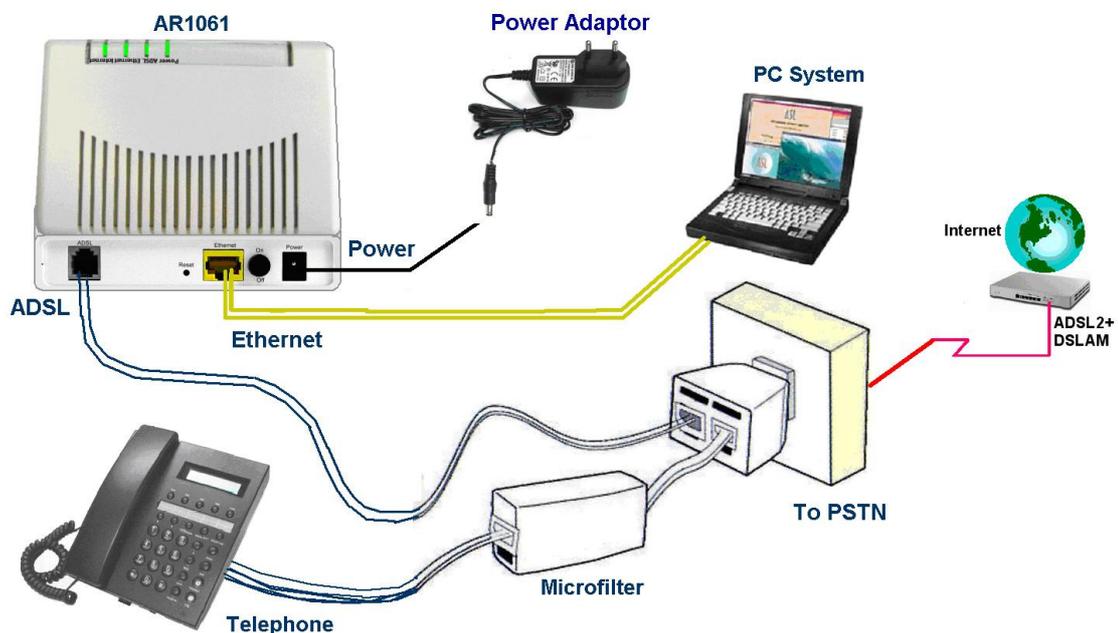
3.1 Package Content

Upon opening the gift box of AR1061 Router, you will find the following items.

- 1 x AR1061 Router Main Unit
- 1 x 15VDC/500mA power adaptor
- 1 x CD-ROM
- 1 x Quick Install Guide
- 1 x Warranty Card
- 1 x RJ-45 Ethernet cable
- 1 x T-Connector
- 1 x RJ-11 ADSL line
- 3 x Microfilters

3.2 Hardware Setup Procedure

Referring to the figure below and connect this ADSL router to the ADSL line and PC.



1. Connect RJ-11 Telephone wire from AR1061 Router ADSL port to the T-connector that connects the ADSL line to the DSLAM located at central office. Thus it is the gate to the world-wide Internet.
2. An analog telephone can be connected to the Microfilter. This phone can work as

- it were connected directly to the PSTN Line (also called as ADSL line now)
3. Connect RJ-45 Ethernet Cable from your PC to AR1061 Router Ethernet port. If you have two or more PC systems, you have to prepare a low-density Ethernet switch or hub for expansion purpose.
 4. Connect the AC Power Adaptor (15V) and then the AR1061 Router will start to run and connect the Home local network to the Broadband world.

3.3 The I/O Port Definition

The definition for each port is shown in the following Table.



No	Part Name	Description of function
1	POWER	Please use the standard power adaptor supplied in the package (15VDC/500mA).
2	ON/OFF	The power On/Off control Switch
3	ETHERNET	RJ-45 Jack 100/10Mbps Ethernet port for connecting to PC/ Notebook/ Switch
3	RESET	Reset the settings to the factory defaults (*)
4	ADSL	RJ-11 Jack to connect to Twisted Pair copper network.

(*) **To reset the modem to factory default settings**, please press the Reset button in the back (with a pen, for instance) and hold it for at least 10 seconds, then release. After 10 seconds approx., the Power LED will become red, which indicates the MODEM is in process of restarting, and the Ethernet LED will be blinking green. After another 20 more seconds approx. all LED indicators will be green, indicating that the reset has been successfully performed.

3.4 The LED Indicator Definition

The following table is a description of the meaning of the different LEDs on the AR1061:

LED	Color	Status	Description
POWER	Green	Off	Power Off
		Steady	Power On
	Red	Blinking or Steady	Restarting or Failure
ETHERNET	Green	Off	No packets in transit through router
		Blinking	Packets in transit through router
CONEXION	Green	Off	No active DSL link
		Steady	DSL Link active
		Blinking	DSL connection in progress
INTERNET	Green	Off	No LAN connection
		Steady	LAN connection established
	Red	Blinking or Steady	Establishment of PPP session or it doesn't have static WAN IP assigned



The LED sequence is “**Power, ETHERNET, CONEXION, and then INTERNET**”.

4 Software Configuration

User can change settings via PC's WEB browser. The following sections describe the set up procedures. After successful setting, when you power on the AR1061 Router, it will boot up and connect to ADSL line automatically. The Router can provide a PVC (Permanent Virtual Channel) for "Bridge test" by default. The default configurations for the system are listed below.

- **LAN IP address: 192.168.1.1, NetMask: 255.255.255.0**
- **UART setting : 115200bps, 8 bits, no parity, 1 stop bit, no flow control.**
- **VPI/VCI for ATM : 8/32 for PPPoE
8/36 for PPPoE with Imagnio service**
- **ADSL Line mode : Auto-detect.**

4.1 Set your PC's Ethernet port

AR1061 is an ADSL Router which support DHCP and default enable. You also can set your computer IP Address as [192.168.1.x](#) within the same subnet as AR1061 (default IP address is [192.168.1.1](#)) and netmask (default netmask is [255.255.255.0](#)). It can be done thru the following way.

1. Click start > Control Panel
2. In the Control Panel, double-click Network Connections
3. Right-click Local Area Connection the click Properties
4. Select Internet Protocol (TCP/IP) then click Properties
5. The TCP/IP Properties windows appear. You can select obtain an IP address automatically and click OK to have the AR1061 assign your computer an IP address. Or you can enter the IP within the same subnet as AR1061.
6. If your Internet Service Provider (ISP) gave you Domain Name System (DNS) settings, enter them in the Use the following DNS server addresses fields. If you are not sure of your DNS setting, contact your ISP.
7. Click OK to finish the setting.

4.2 Access the Web Page of Router

- Type the Ethernet IP address of the modem/router on the address bar of the browser. Default IP address is [192.168.1.1](#).
- The "Enter Network Password" dialog box appears. Type the user name and password and then click OK.
Default admin user name/password is as follows:
Username: **1234** / Password: **1234**
- Once you have connected to ADSL router. You will see the status page.



ADSL Router

Site contents:

- Status
- LAN Interface
- WAN Interface
- Services
 - DHCP Mode
 - DHCP Server
 - DHCP Relay
 - DNS
 - Firewall
 - IGMP Proxy
 - UPnP
 - RIP
- Advance
- Diagnostic
- Admin
- Statistics

ADSL Router Status

This page shows the current status and some basic settings of the device.

System	
Alias Name	TECOM AR-1061 ADSL Modem/Router
Uptime	14 min
Firmware Version	1.3.9-TCM-071205
DSP Version	2.8.1.2
Name Servers	80.58.61.250, 80.58.61.254
Default Gateway	

DSL	
Operational Status	, ACTIVATING,0
Upstream Speed	0 kbps
Downstream Speed	0 kbps

LAN Configuration	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	00e04c867001

WAN Configuration						
Interface	VPI/VCI	Encap	Protocol	IP Address	Gateway	Status
ppp1	8/36	LLC	PPPoE			down 0sec / 0sec
ppp0	8/32	LLC	PPPoE			down 0sec / 0sec

This page displays the AR-1061 Router current status and settings. This information is read-only except for the PPPoE/PPPoA channel for which user can connect/disconnect the channel on demand. Click the “Refresh” button to update the status

Function buttons in this page:

Connect / Disconnect

The two buttons take effect only when PVC is configured as PPPoE / PPPoA mode. Click Connect / Disconnect button to connect/disconnect the PPP dial up link.

4.3 LAN Configuration

This page shows the current setting of LAN interface. You can set IP address, subnet mask for LAN interface in this page.

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Site contents:

- Status
- LAN**
- WAN
- Services
- Advance
- Diagnostic
- Admin
- Statistics

LAN Interface Setup

This page is used to configure the LAN interface of your ADSL Router. Here you may change the setting for IP address, subnet mask, etc..

Interface Name: br0

IP Address:

Subnet Mask:

Secondary IP

IP Address:

Subnet Mask:

DHCP pool: Primary LAN Secondary LAN

Fields in this page:

Field	Description
IP Address	The IP address your LAN hosts use to identify the device's LAN port.
Subnet Mask	LAN subnet mask.
Secondary IP	The secondary IP address assignment for the device's LAN port.

Function buttons in this page:

Apply Changes

Click to save the setting to the configuration. New parameters will take effect after save into flash memory and reboot the system. See section "Admin" for save details.

Undo

Discard your changes.

4.4 WAN Configuration

There are three sub-menus for WAN configuration: [Channel Comfit], [ATM Settings], and [ADSL Settings].

Channel Configuration

ADSL modem/router comes with 8 ATM Permanent Virtual Channels (PVCs) at the most. There are mainly three operations for each of the PVC channels: add, delete and modify. And there are several channel modes to be selected for each PVC channel. For each of

the channel modes, the setting is quite different accordingly. Please refer to the section – **Channel Mode Configuration** for details.

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WAN Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

VPI: VCI:

Encapsulation: LLC VC-Mux Channel Mode:

Enable NAPT: Admin Status: Enable Disable

PPP Settings: User Name: Password:

Type: Idle Time (min):

WAN IP Settings: Type: Fixed IP DHCP

Local IP Address: Remote IP Address:

Subnet Mask: Unnumbered

Default Route: Disable Enable

Current ATM VC Table:

Select	Inf	Mode	VPI	VCI	Encap	NAPT	IP Addr	Remote IP	Subnet Mask	User Name	DRoute	Status	Actions
<input type="radio"/>	ppp0	PPPoE	8	32	LLC	On				adslppp@telefo nicanetpa	On	Enab le	
<input type="radio"/>	ppp1	PPPoE	8	36	LLC	On				tec01001@telef onicanetpi	Off	Enab le	

Function buttons in this page:

Add

Click **Add** to complete the channel setup and add this PVC channel into configuration.

Modify

Select an existing PVC channel by clicking the radio button at the **Select** column of the **Current ATM VC Table** before we can modify the PVC channel. After selecting a PVC channel, we can modify the channel configuration at this page. Click **Modify** to complete the channel modification and apply to the configuration.

Delete

Select an existing PVC channel to be deleted by clicking the radio button at the **Select** column of the **Current ATM VC Table**. Click **Delete** to delete this PVC channel from configuration.

ATM Setting

The page is for ATM PVC QoS parameters setting. The DSL device support 4 QoS mode —UBR/CBR/rt-VBR/nrt-VBR.



ADSL Router

Site contents:

- Status
- LAN Interface
- WAN Interface
 - Channel Config
 - ATM Settings
 - ADSL Settings
- Services
- Advance
- Diagnostic
- Admin
- Statistics

ATM Settings

This page is used to configure the parameters for the ATM of your ADSL Router. Here you may change the setting for VPI, VCI, QoS etc ...

VPI: VCI: QoS:

PCR: CDVT: SCR: MBS:

Current ATM VC Table:

Select	VPI	VCI	QoS	PCR	CDVT	SCR	MBS
<input type="radio"/>	8	32	UBR	6000	0	---	---
<input type="radio"/>	8	36	UBR	301	0	---	---

Fields in this page:

Field	Description
VPI	Virtual Path Identifier. This is read-only field and is selected on the Select column in the Current ATM VC Table.
VCI	Virtual Channel Identifier. This is read-only field and is selected on the Select column in the Current ATM VC Table. The VCI, together with VPI, is used to identify the next destination of a cell as it passes through to the ATM switch.
QoS	Quality of Server, a characteristic of data transmission that measures how accurately and how quickly a message or data is transferred from a source host to a destination host over a network. The four QoS options are: <ul style="list-style-type: none"> – UBR (Unspecified Bit Rate): When UBR is selected, the SCR and MBS fields are disabled. – CBR (Constant Bit Rate): When CBR is selected, the SCR and MBS fields are disabled. – nrt-VBR (non-real-time Variable Bit Rate): When nrt-VBR is selected, the SCR and MBS fields are enabled. – rt-VBR (real-time Variable Bit Rate): When rt-VBR is selected, the SCR and MBS fields are enabled.
PCR	Peak Cell Rate, measured in cells/sec., is the cell rate which the source may never exceed.

SCR	Sustained Cell Rate, measured in cells/sec., is the average cell rate over the duration of the connection.
MBS	Maximum Burst Size, a traffic parameter that specifies the maximum number of cells that can be transmitted at the peak cell rate.

Function buttons in this page:

Apply Changes

Set new PVC QoS mode for the selected PVC. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Undo

Discard your settings.

ADSL Setting

The ADSL setting page allows you to select any combination of DSL training modes.

The screenshot displays the configuration interface for an ADSL Router. On the left is a navigation tree with the following items: Site contents, Status, LAN Interface, WAN Interface (highlighted), Channel Config, ATM Settings, ADSL Settings, Services, Advance, Diagnostic, Admin, and Statistics. The main content area is titled "ADSL Router" and "ADSL Settings". Below the title, it says "Adsl Settings." and lists several configuration options:

- ADSL modulation:**
 - G.Lite
 - G.Dmt
 - T1.413
 - ADSL2
 - ADSL2+
- AnnexL Option:**
 - Enabled
- AnnexM Option:**
 - Enabled
- ADSL Capability:**
 - Bitswap Enable
 - SRA Enable
- ADSL Tone:**
 - Tone Mask

At the bottom of the configuration area is an "Apply Changes" button.

Fields in this page:

Field	Description
ADSL modulation	Choose preferred xDSL standard protocols. G.lite : G.992.2 Annex A G.dmt : G.992.1 Annex A T1.413 : T1.413 issue #2 ADSL2 : G.992.3 Annex A ADSL2+ : G.992.5 Annex A
AnnexL Option	Enable/Disable ADSL2/ADSL2+ Annex L capability.
AnnexM Option	Enable/Disable ADSL2/ADSL2+ Annex M capability.
ADSL Capability	"Bit-swap Enable" : Enable/Disable bit-swap capability. "SRA Enable" : Enable/Disable SRA (seamless rate adaptation) capability.

Function buttons in this page:

Tone Mask

Choose tones to be masked. Masked tones will not carry any data.

Apply Changes

Click to save the setting to the configuration and the modem will be retrained.

4.5 Services Configuration

DHCP Mode

You can configure your network and DSL device to use the Dynamic Host Configuration Protocol (DHCP). This page provides DHCP instructions for implementing it on your network by selecting the role of DHCP protocol that this device wants to play. There are two different DHCP roles that this device can act as: DHCP Server and DHCP Relay. When acting as DHCP server, you can setup the server parameters at the **DHCP Server** page; while acting as DHCP Relay, you can setup the relay at the **DHCP Relay** page.



ADSL Router

Site contents:

- Status
- LAN
- WAN
- Services
 - DHCP Settings
 - DNS
 - Firewall
 - IGMP Proxy
 - RIP
- Advance
- Diagnostic
- Admin
- Statistics

DHCP Settings

This page be used to configure DHCP Server and DHCP Relay.

DHCP Mode: None DHCP Relay DHCP Server

DHCP Server

Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to hosts on your LAN. The device distributes numbers in the pool to hosts on your network as they request Internet access.

LAN IP Address: 192.168.1.1 **Subnet Mask:** 255.255.255.0

IP Pool Range: -

Max Lease Time: seconds (-1 indicates an infinite lease)

Domain Name:

Gateway Address:

DNS option: Use DNS Relay Set Manually

DNS1:

DNS2:

DNS3:

DHCP Server Configuration

By default, the device is configured as a DHCP server, with a predefined IP address pool of 192.168.1.33 through 192.168.1.254 (subnet mask 255.255.255.0).



ADSL Router

Site contents:

- Status
- LAN
- WAN
- Services
 - DHCP Settings
 - DNS
 - Firewall
 - IGMP Proxy
 - RIP
- Advance
- Diagnostic
- Admin
- Statistics

DHCP Settings

This page be used to configure DHCP Server and DHCP Relay.

DHCP Mode: None DHCP Relay DHCP Server

DHCP Server

Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to hosts on your LAN. The device distributes numbers in the pool to hosts on your network as they request Internet access.

LAN IP Address: 192.168.1.1 **Subnet Mask:** 255.255.255.0

IP Pool Range: -

Max Lease Time: seconds (-1 indicates an infinite lease)

Domain Name:

Gateway Address:

DNS option: Use DNS Relay Set Manually

DNS1:

DNS2:

DNS3:

Function buttons in this page:

Field	Description
IP Pool Range	Specify the lowest and highest addresses in the pool.
Max Lease Time	The Lease Time is the amount of time that a network user is allowed to maintain a network connection to the device using the current dynamic IP address. At the end of the Lease Time, the lease is either renewed or a new IP is issued by the DHCP server. The amount of time is in units of seconds. The default value is 86400 seconds (1 day). The value -1 stands for the infinite lease.
Domain Name	A user-friendly name that refers to the group of hosts (subnet) that will be assigned addresses from this pool.

Function buttons in this page:

Apply Changes

Set new DHCP server configuration. New parameters will take effect after save into flash memory and reboot the system. See section "Admin" for save details.

Undo

Discard your changes.

DHCP Relay Configuration

Some ISPs perform the DHCP server function for their customers' home/small office network. In this case, you can configure this device to act as a DHCP relay agent. When a host on your network requests Internet access, the device contacts your ISP to obtain the IP configuration, and then forward that information to the host. You should set the DHCP mode after you configure the DHCP relay.

Fields in this page:

Field	Description
DHCP Server Address	Specify the IP address of your ISP's DHCP server. Requests for IP information from your LAN will be passed to the default gateway, which should route the request appropriately.

Function button in this page

Apply Changes

Click to save the setting to the configuration.

DNS Configuration

There are two submenus for the DNS Configuration: [DNS Server] and [Dynamic DNS]

4.5.1.1 DNS Server

This page is used to select the way to obtain the IP addresses of the DNS servers.

Field	Description
Attain DNS Automatically	Select this item if you want to use the DNS servers obtained by the WAN interface via the auto-configuration mechanism.
Set DNS Manually	Select this item to configure up to three DNS IP addresses.

Function buttons in this page:

Apply Changes

Set new DNS relay configuration. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Undo

Discard your changes.

4.5.1.2 Dynamic DNS

Each time your device connects to the Internet, your ISP assigns a different IP address to your device. In order for you or other users to access your device from the WAN-side, you need to manually track the IP that is currently used. The Dynamic DNS feature allows you to register your device with a DNS server and access your device each time using the same host name. The **Dynamic DNS** page allows you to enable/disable the Dynamic DNS feature.

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Dynamic DNS Configuration

This page is used to configure the Dynamic DNS address from DynDNS.org or TZO. Here you can Add/Remove to configure Dynamic DNS.

Enable:

DDNS provider:

Hostname:

DynDns Settings:

Username:

Password:

TZO Settings:

Email:

Key:

On the **Dynamic DNS** page, configure the following fields:

Field	Description
Enable	Check this item to enable this registration account for the DNS server.
DDNS provider	There are two DDNS providers to be selected in order to register your device with: DynDNS and TZO. A charge may occur depends on the service you select.
Hostname	Domain name to be registered with the DDNS server.
Interface	This field defaults to your device's WAN interface over which your device will be accessed.
Username	User-name assigned by the DDNS service provider.
Password	Password assigned by the DDNS service provider.

Function buttons in this page:

Add

Click Add to add this registration into the configuration.

Remove

Select an existing DDNS registration by clicking the radio button at the **Select**

column of the **Dynamic DNS Table**. Click **Remove** button to remove the selected registration from the configuration.

Firewall Configuration

Firewall contains several features that are used to deny or allow traffic from passing through the device.

4.5.1.3 IP/Port Filtering

The screenshot shows the TECom ADSL Router web interface. The left sidebar contains a navigation menu with items like Status, LAN, WAN, Services, DHCP Settings, DNS, Firewall, IP/Port Filtering, MAC Filtering, Port Forwarding, URL Blocking, Domain Blocking, DMZ, IGMP Proxy, RIP, Advance, Diagnostic, Admin, and Statistics. The main content area is titled 'IP/Port Filtering' and contains the following configuration options:

- Outgoing Default Action:** Deny Allow
- Incoming Default Action:** Deny Allow
- Direction:** **Protocol:** **Rule Action:** Deny Allow
- Source IP Address:** **Subnet Mask:** **Port:** -
- Destination IP Address:** **Subnet Mask:** **Port:** -
-
- Current Filter Table:**
- Table with columns: Select, Direction, Protocol, Src Address, Src Port, Dst Address
-

The IP/Port filtering feature allows you to deny/allow specific services or applications in the forwarding path.

Fields on the first setting block:

Field	Description
Outgoing Default Action	Specify the default action on the LAN to WAN forwarding path.
Incoming Default Action	Specify the default action on the WAN to LAN forwarding path.

Function button for this first setting block:

Apply Changes

Click to save the setting of default actions to the configuration.

Fields on the second setting block:

Field	Description
Rule Action	Deny or allow traffic when matching this rule.
Direction	Traffic forwarding direction.
Protocol	There are 3 options available: TCP, UDP and ICMP.
Src IP Address	The source IP address assigned to the traffic on which filtering is applied.
Src Subnet Mask	Subnet-mask of the source IP.
Src Port	Starting and ending source port numbers.
Dst IP Address	The destination IP address assigned to the traffic on which filtering is applied.
Dst Subnet Mask	Subnet-mask of the destination IP.
Dst Port	Starting and ending destination port numbers.

Function buttons for this second setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the **Current Filter Table**:

Delete Selected

Delete selected filtering rules from the filter table. You can click the checkbox at the **Select** column to select the filtering rule.

Delete All

Delete all filtering rules from the filter table.

4.5.1.4 MAC Filtering

The MAC filtering feature allows you to define rules to allow or deny frames through the device based on source MAC address, destination MAC address, and traffic direction.

Fields on the first setting block:

Field	Description
Outgoing Default Action	Specify the default action on the LAN to WAN bridging/forwarding path.
Incoming Default Action	Specify the default action on the WAN to LAN bridging/forwarding path.

Function button for this first setting block:

Apply Changes

Click to save the setting of default actions to the configuration.

Fields on the second setting block:

Field	Description
Rule Action	Deny or allow traffic when matching this rule.
Direction	Traffic bridging/forwarding direction.

Src MAC Address	The source MAC address. It must be xxxxxxxxxxxx format. Blanks can be used in the MAC address space and are considered as don't care.
Dst MAC Address	The destination MAC address. It must be xxxxxxxxxxxx format. Blanks can be used in the MAC address space and are considered as don't care.

Function buttons for this second setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the **Current Filter Table**:

Delete Selected

Delete selected filtering rules from the filter table. You can click the checkbox at the **Select** column to select the filtering rule.

Delete All

Delete all filtering rules from the filter table.

4.5.1.5 Port Forwarding

Firewall keeps unwanted traffic from the Internet away from your LAN computers. Add a Port Forwarding entry will create a tunnel through your firewall so that the computers on the Internet can communicate to one of the computers on your LAN on a single port.

Fields in this page:

Field	Description
Enable Port Forwarding	Check this item to enable the port-forwarding feature.
Protocol	There are 3 options available: TCP, UDP and Both.
Enable	Check this item to enable this entry.
Local IP Address	IP address of your local server that will be accessed by Internet.
Port	The destination port number that is made open for this application on the LAN-side.
Remote IP Address	The source IP address from which the incoming traffic is allowed. Leave blank for all.
External Port	The destination port number that is made open for this application on the WAN-side
Interface	Select the WAN interface on which the port-forwarding rule is to be applied.

Function buttons for the setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the **Current Port Forwarding Table**:

Delete Selected

Delete the selected port forwarding rules from the forwarding table. You can click the checkbox at the **Select** column to select the forwarding rule.

Delete All

Delete all forwarding rules from the forwarding table.

4.5.1.6 DMZ

A DMZ (Demilitarized Zone) allows a single computer on your LAN to expose ALL of its ports to the Internet. Enter the IP address of that computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. When doing this, the DMZ host is no longer behind the firewall.

The screenshot shows the configuration interface for a TECOM ADSL Router. On the left is a navigation tree with categories like Site contents, LAN Interface, WAN Interface, Services, Firewall, and Advance. The 'DMZ' option under 'Services' is selected. The main content area is titled 'DMZ' and contains a description: 'A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.' Below this, there are two settings: 'DMZ Host' with radio buttons for 'Disable' (selected) and 'Enable', and 'DMZ Host IP Address' with an empty text input field. An 'Apply Changes' button is located to the right of the IP address field.

Fields in this page:

Field	Description
Enable DMZ	Check this item to enable the DMZ feature.
DMZ Host IP Address	IP address of the local host. This feature sets a local host to be exposed to the Internet.

Function buttons in this page:

Apply Changes

Click to save the setting to the configuration.

IGMP Proxy Configuration

Multicasting is useful when the same data needs to be sent to more than one hosts. Using multicasting as opposed to sending the same data to the individual hosts uses less network bandwidth. The multicast feature also enables you to receive multicast video stream from multicast servers.

IP hosts use Internet Group Management Protocol (IGMP) to report their multicast group memberships to neighboring routers. Similarly, multicast routers use IGMP to discover which of their hosts belong to multicast groups. This device supports IGMP proxy that handles IGMP messages. When enabled, this device acts as a proxy for a LAN host

making requests to join and leave multicast groups, or a multicast router sending multicast packets to multicast group on the WAN side.

When a host wishes to join a multicast group, it sends IGMP REPORT message to the device's IGMP downstream interface. The proxy sets up a multicast route for the interface and host requesting the video content. It then forwards the Join to the upstream multicast router. The multicast IP traffic will then be forwarded to the requesting host. On a leave, the proxy removes the route and then forwards the leave to the upstream multicast router.

The IGMP Proxy page allows you to enable multicast on WAN and LAN interfaces. The LAN interface is always served as downstream IGMP proxy, and you can configure one of the available WAN interfaces as the upstream IGMP proxy.

- Upstream: The interface that IGMP requests from hosts are sent to the multicast router.
- Downstream: The interface data from the multicast router are sent to hosts in the multicast group database.

Fields in this page:

Field	Description
IGMP Proxy	Enable/disable IGMP proxy feature
Proxy Interface	The upstream WAN interface is selected here.

Function buttons in this page:

Apply Changes

Click to save the setting to the configuration.

Undo

Discard your settings.

RIP Configuration

RIP is an Internet protocol you can set up to share routing table information with other routing devices on your LAN, at your ISP's location, or on remote networks connected to your network via the ADSL line.

Most small home or office networks do not need to use RIP; they have only one router, such as the ADSL Router, and one path to an ISP. In these cases, there is no need to share routes, because all Internet data from the network is sent to the same ISP gateway.

You may want to configure RIP if any of the following circumstances apply to your network:

- Your home network setup includes an additional router or RIP-enabled PC (other than the ADSL Router). The ADSL Router and the router will need to communicate via RIP to share their routing tables.
- Your network connects via the ADSL line to a remote network, such as a corporate network. In order for your LAN to learn the routes used within your corporate network, they should both be configured with RIP.
- Your ISP requests that you run RIP for communication with devices on their network.

TECOM ADSL Router

RIP Configuration

Enable the RIP if you are using this device as a RIP-enabled router to communicate with others using the Routing Information Protocol. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.

RIP: Disable Enable

Interface:

Receive Mode:

Send Mode:

RIP Config Table:

Select	Interface	Receive Mode	Send Mode
<input type="button" value="Delete Selected"/>			<input type="button" value="Delete All"/>

Fields on the first setting block:

Field	Description
RIP	Enable/disable RIP feature.

Function buttons for the second setting block in this page:

Apply Changes

Click to save the setting of this setting block to the system configuration

Fields on the second setting block:

Field	Description
Interface	The name of the interface on which you want to enable RIP.
Receive Mode	Indicate the RIP version in which information must be passed to the DSL device in order for it to be accepted into its routing table.
Send Mode	Indicate the RIP version this interface will use when it sends its route information to other devices.

Function buttons for the second setting block in this page:

Add

Add a RIP entry and the new RIP entry will be display in the table

Delete Selected Entry

Delete a selected RIP entry. The RIP entry can be selected on the **Select** column of the **RIP Config Table**.

4.6 Advance Configuration

ARP table

You can see the show list of learned MAC addresses through ARP in this page.

The screenshot shows the TECOM ADSL Router web interface. On the left is a navigation menu with 'Site contents' including Status, LAN Interface, WAN Interface, Services, and Advance. Under 'Advance', 'ARP table' is selected. The main content area is titled 'ADSL Router' and 'ARP Table'. It contains a description: 'This table shows a list of learned MAC addresses.' Below this is a table with two columns: 'IP Address' and 'MAC Address'. The table contains one entry: IP Address 192.168.1.2 and MAC Address 00:00:E2:82:C5:18. A 'Refresh' button is located below the table.

IP Address	MAC Address
192.168.1.2	00:00:E2:82:C5:18

Bridging

You can enable/disable Spanning Tree Protocol and set MAC address aging time in this page.

The screenshot shows the TECOM ADSL Router web interface. On the left is a navigation menu with 'Site contents' including Status, LAN Interface, WAN Interface, Services, and Advance. Under 'Advance', 'Bridging' is selected. The main content area is titled 'ADSL Router' and 'Bridge Configuration'. It contains a description: 'This page is used to configure the bridge parameters. Here you can change the settings or view some information on the bridge and its attached ports.' Below this are configuration fields: 'Ageing Time' set to 300 (seconds), and '802.1d Spanning Tree' with 'Disabled' selected. There are three buttons: 'Apply Changes', 'Undo', and 'Show MACs'.

Fields in this page:

Field	Description
-------	-------------

Ageing Time	Set the Ethernet address ageing time, in seconds. After [Ageing Time] seconds of not having seen a frame coming from a certain address, the bridge will time out (delete) that address from Forwarding Database (fdb).
802.1d Spanning Tree	Enable/disable the spanning tree protocol

Function buttons in this page:

Apply Changes

Save this bridge configuration. New configuration will take effect after saving into flash memory and rebooting the system. See section "Admin" for details.

Show MACs

List MAC address in forwarding table.

Routing

The Routing page enables you to define specific route for your Internet and network data. Most users do not need to define routes. On a typical small home or office LAN, the existing routes that set up the default gateways for your LAN hosts and for the DSL device provide the most appropriate path for all your Internet traffic.

- On your LAN hosts, a default gateway directs all Internet traffic to the LAN port(s) on the DSL device. Your LAN hosts know their default gateway either because you assigned it to them when you modified your TCP/IP properties, or because you configured them to receive the information dynamically from a server whenever they access the Internet.
- On the DSL device itself, a default gateway is defined to direct all outbound Internet traffic to a route at your ISP. The default gateway is assigned either automatically by your ISP whenever the device negotiates an Internet access, or manually by user to setup through the configuration.

You may need to define routes if your home setup includes two or more networks or subnets, if you connect to two or more ISP services, or if you connect to a remote corporate LAN.



ADSL Router

Site contents:

- Status
- LAN Interface
- WAN Interface
- Services
 - Advance
 - ARP table
 - Bridging
 - Routing
 - SNMP
 - IP QoS
 - Remote Access
 - Others
 - Dagnostic
 - Admin
 - Statistics

Routing Configuration

This page is used to configure the routing information. Here you can add/delete IP routes.

Enable:
Destination:
Subnet Mask:
Next Hop:
Metric:
Interface:

Static Route Table:

Select	State	Destination	Subnet Mask	NextHop	Metric
--------	-------	-------------	-------------	---------	--------

Fields in this page:

Field	Description
Enable	Check to enable the selected route or route to be added.
Destination	The network IP address of the subnet. The destination can be specified as the IP address of a subnet or a specific host in the subnet. It can also be specified as all zeros to indicate that this route should be used for all destinations for which no other route is defined (this is the route that creates the default gateway).
Subnet Mask	The network mask of the destination subnet. The default gateway uses a mask of 0.0.0.0.
Next Hop	The IP address of the next hop through which traffic will flow towards the destination subnet.
Metric	Defines the number of hops between network nodes that data packets travel. The default value is 0, which means that the subnet is directly one hop away on the local LAN network.
Interface	The WAN interface to which a static routing subnet is to be applied.

Function buttons in this page:

Add Route

Add a user-defined destination route.

Update

Update the selected destination route on the **Static Route Table**.

Delete Selected

Delete a selected destination route on the **Static Route Table**.

Show Routes

Click this button to view the DSL device's routing table. The IP Route Table displays, as shown in Figure.

IP Route Table

This table shows a list of destination routes commonly accessed by your network.

Destination	Subnet Mask	NextHop	Metric	Iface
192.168.249.0	255.255.255.252	*	0	br0
192.168.1.0	255.255.255.0	*	0	br0
127.0.0.0	255.255.255.0	*	0	lo

SNMP Configuration

Simple Network Management Protocol (SNMP) is a troubleshooting and management protocol that uses the UDP protocol on port 161 to communicate between clients and servers. The DSL device can be managed locally or remotely by SNMP protocol

The screenshot shows the TECCOM ADSL Router configuration interface. The left sidebar contains a tree view of site contents, with 'SNMP' selected under the 'Advance' folder. The main content area is titled 'SNMP Protocol Configuration' and includes a description: 'This page is used to configure the SNMP protocol. Here you may change the setting for system description, trap ip address, community name, etc..'. Below this is a form with the following fields:

System Description	<input type="text" value="System Description"/>
System Contact	<input type="text" value="System Contact"/>
System Name	<input type="text" value="TECCOM AR-1061 ADSL Modem/Router"/>
System Location	<input type="text" value="System Location"/>
System Object ID	<input type="text" value="1.3.6.1.4.1.16972"/>
Trap IP Address	<input type="text" value="192.168.1.254"/>
Community name (read-only)	<input type="text" value="public"/>
Community name (write-only)	<input type="text" value="public"/>

At the bottom of the form are two buttons: 'Apply Changes' and 'Reset'.

Fields in this page:

Field	Description
System Description	System description of the DSL device.
System Contact	Contact person and/or contact information for the DSL device.
System Name	An administratively assigned name for the DSL device.
System Location	The physical location of the DSL device.
System Object ID	Vendor object identifier. The vendor's authoritative identification of the network management subsystem contained in the entity.
Trap IP Address	Destination IP address of the SNMP trap.
Community name (read-only)	Name of the read-only community. This read-only community allows read operation to all objects in the MIB.
Community name (write-only)	Name of the write-only community. This write-only community allows write operation to the objects defines as read-writable in the MIB.

Function buttons in this page:

Apply Changes

Save SNMP configuration. New configuration will take effect after saving into flash memory and rebooting the system. See section "Admin" for details.

IP QoS



ADSL Router

Site contents:

- Status
- LAN Interface
- WAN Interface
- Services
 - Advance
 - ARP table
 - Bridging
 - Routing
 - SNMP
 - IP QoS**
 - Remote Access
 - Others
 - Diagnostic
 - Admin
 - Statistics
 - Interfaces
 - ADSL

IP QoS

Entries in this table are used to assign the precedence for each incoming packet based on physical LAN port, TCP/UDP port number, and source/destination IP address/subnet masks.

IP QoS: Disabled Enabled Default QoS: IP Pred Apply Changes

Specify Traffic Classification Rules

Source IP: Netmask: Port:

Destination IP: Netmask: Port:

Protocol: Physical Port:

Assign Priority and/or IP Precedence and/or Type of Service and/or DSCP

Outbound Priority: p3(lowest) 802.1p:

Precedence: TOS:

Add

IP QoS Rules:

Select	Status	Traffic Classification Rules						Mark			
		Src IP	Src Port	Dst IP	Dst Port	Protocol	Lan Port	Priority	IP Preced	IP ToS	Wan 802.1p
<input type="checkbox"/>	Enable			81.47.224.0/22		UDP		p0			

Remote Access

TECOM ADSL Router

Remote Access

This page is used to enable/disable management services for the LAN and WAN.

Service Name	LAN	WAN	WAN Port
TELNET	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="23"/>
FTP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="21"/>
TFTP	<input type="checkbox"/>	<input type="checkbox"/>	
HTTP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="80"/>
SNMP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PING	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

The Remote Access function can secure remote host access to your DSL device from LAN and WLAN interfaces for some services provided by the DSL device.

Fields in this page:

Field	Description
LAN	Check/un-check the services on the LAN column to allow/un-allow the services access from LAN side; and "WAN":
WAN	Check/un-check the services on the WAN column to allow/un-allow the services access from WAN side.
WAN Port	This field allows the user to specify the port of the corresponding service. Take the HTTP service for example; when it is changed to 8080, the HTTP server address for the WAN side is http://dsl_addr:8080 , where the dsl_addr is the WAN side IP address of the DSL device.

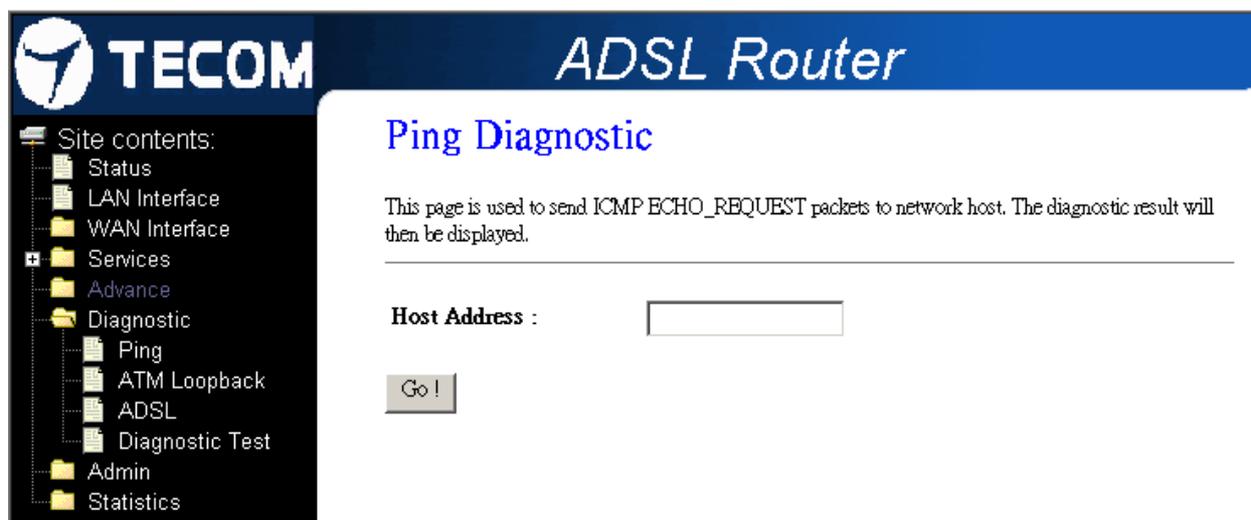
4.7 Diagnostic

The DSL device supports some useful diagnostic tools.

Ping

Once you have your DSL device configured, it is a good idea to make sure you can ping

the network. A ping command sends a message to the host you specify. If the host receives the message, it sends messages in reply. To use it, you must know the IP address of the host you are trying to communicate with and enter the IP address in the Host Address field. Click Go! To start the ping command, the ping result will then be shown in this page.



Fields in this page:

Field	Description
Host Address	The IP address you want to ping.

ATM Loopback

In order to isolate the ATM interface problems, you can use ATM OAM loopback cells to verify connectivity between VP/VC endpoints, as well as segment endpoints within the VP/VC. ATM uses F4 and F5 cell flows as follows:

- F4: used in VPs
- F5: used in VCs

An ATM connection consists of a group of points. This OAM implementation provides management for the following points:

- Connection endpoint: the end of a VP/VC connection where the ATM cell are terminated
- Segment endpoint: the end of a connection segment

This page allows you to use ATM ping, which generates F5 segment and end-to-end loop-back cells to test the reachability of a segment endpoint or a connection endpoint.



ADSL Router

- Site contents:
- [-] Status
 - [-] LAN Interface
 - [-] WAN Interface
 - [+] Services
 - [-] Advance
 - [-] Diagnostic
 - [-] Ping
 - [-] ATM Loopback
 - [-] ADSL
 - [-] Diagnostic Test
 - [-] Admin
 - [-] Statistics

OAM Fault Management - Connectivity Verificator

Connectivity verification is supported by the use of the OAM loopback capability for both VP and VC connections. This page is used to perform the VCC loopback function to check the connectivity of the VCC.

Select PVC:

8/32 8/36

Flow Type: F5 Segment F5 End-to-End

Loopback Location ID:

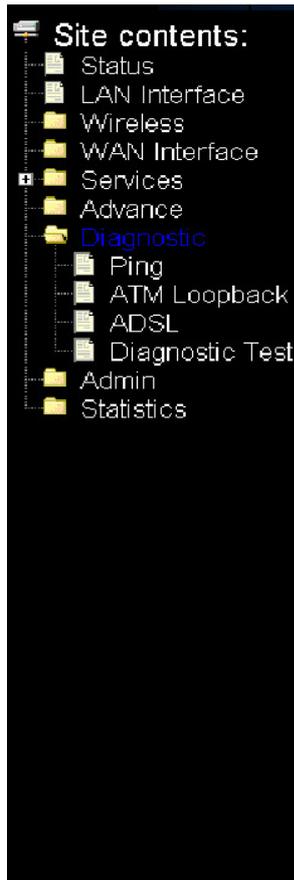
Go !

Fields in this page:

Field	Description
Select PVC	Select the PVC channel you want to do the loop-back diagnostic.
Flow Type	The ATM OAM flow type. The selection can be F5 Segment or F5 End-to-End.
Loopback Location ID	The loop-back location ID field of the loop-back cell. The default value is all 1s (ones) to indicate the endpoint of the segment or connection.

ADSL

This page shows the ADSL diagnostic result. Click **Start** button to start the ADSL diagnostic.



Diagnostics -- ADSL

Adsl Tone Diagnostics.

Start

ADSL Diagnostics successful !!

	Downstream	Upstream
Hlin Scale	19880	1583
Loop Attenuation(dB)	11.3	29.8
Signal Attenuation(dB)	14.4	28.8
SNR Margin(dB)	6.4	6.0
Attainable Rate(Kbps)	11480	548
Output Power(dBm)	22.3	12.3

Tone Number	H.Real	H.Image	SNR	QLN	Hlog
0	0.000	0.000	0.0	-150.5	-96.3
1	0.000	0.000	0.0	-115.5	-96.3
2	0.000	0.000	0.0	-114.0	-96.3
3	0.000	0.000	0.0	-114.5	-96.3
4	0.000	0.000	0.0	-113.5	-96.3

Diagnostic Test

The Diagnostic Test page shows the test results for the connectivity of the physical layer and protocol layer for both LAN and WAN sides.

TECOM *ADSL Router*

Diagnostic Test

The DSL Router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Run Diagnostic Test" button again to make sure the fail status is consistent.

Select the Internet Connection:

LAN Connection Check	
Test Ethernet LAN Connection	PASS

ADSL Connection Check	
Test ADSL Synchronization	PASS
Test ATM OAM F5 Segment Loopback	PASS
Test ATM OAM F5 End-to-end Loopback	PASS
Test ATM OAM F4 Segment Loopback	PASS
Test ATM OAM F4 End-to-end Loopback	PASS

Internet Connection Check	
Ping Primary Domain Name Server	FAIL

Fields in this page:

Field	Description
Select the Internet Connection	The available WAN side interfaces are listed. You have to select one for the WAN side diagnostic.

4.8 Admin

Commit / Reboot

Whenever you use the Web configuration to change system settings, the changes are initially placed in temporary storage. These changes will be lost if the device is reset or turn off. To save your change for future use, you can use the commit function.

The screenshot shows the web interface for a TECOM ADSL Router. The top navigation bar includes the TECOM logo and the text 'ADSL Router'. On the left, a 'Site contents' menu is visible, with 'Admin' selected. The main content area is titled 'Commit/Reboot' and contains the text: 'This page is used to commit changes to system memory and reboot your system.' Below this text is a button labeled 'Commit and Reboot'.

Function buttons in this page:

Commit and Reboot

Whenever you use the web console to change system settings, the changes are initially placed in temporary storage. To save your changes for future use, you can use the Commit/Reboot function. This function saves your changes from RAM to flash memory and reboot the system.

IMPORTANT!

Do not turn off your modem or press the Reset button while this procedure is in progress.

Backup/Restore

This page allows you to backup and restore your configuration into and from file in your host.

The screenshot shows the router's web interface with the following elements:

- Header:** TECOM logo and "ADSL Router" title.
- Left Navigation Panel:** A tree view under "Site contents:" listing folders like Status, LAN, WAN, Services, Advance, Diagnostic, Admin, and sub-items like Commit/Reboot, Backup/Restore, System Log, Password, Upgrade Firmware, ACL Config, Time Zone, TR-069 Config, and Statistics.
- Main Content Area:**
 - Section Header:** "Backup/Restore Settings"
 - Description:** "This page allows you to backup current settings to a file or restore the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default."
 - Form Elements:**
 - Save Settings to File:** A "Save..." button.
 - Load Settings from File:** An empty text input field, an "Examinar..." button, and an "Upload" button.
 - Reset Settings to Default:** A "Reset" button.

Password

The first time you log into the system, you use the default password. There are two-level logins: **1234** and **user**. The **1234** and **user** password configuration allows you to change the password for administrator and user.

The screenshot shows the router's web interface with the following elements:

- Header:** TECOM logo and "ADSL Router" title.
- Left Navigation Panel:** A tree view under "Site contents:" listing folders like Status, LAN Interface, WAN Interface, Services, Advance, Diagnostic, Admin, and sub-items like Commit/Reboot, Backup/Restore, System Log, Password, Upgrade Firmware, ACL Config, Time Zone, TR-069 Config, and Statistics.
- Main Content Area:**
 - Section Header:** "Password Setup"
 - Description:** "This page is used to set the account to access the web server of ADSL Router. Empty user name and password will disable the protection."
 - Form Elements:**
 - User Name:** A dropdown menu currently showing "1234".
 - Old Password:** An empty text input field.
 - New Password:** An empty text input field.
 - Confirmed Password:** An empty text input field.
 - Buttons:** "Apply Changes" and "Reset".

Fields in this page:

Field	Description
User Name	Selection of user levels are: admin and user.
Old Password	Enter the old password for this selected login.
New Password	Enter the new password here.
Confirmed Password	Enter the new password here again to confirm.

Upgrade Firmware

To upgrade the firmware for the DSL device:

- Click the **Browse** button to select the firmware file.
- Confirm your selection.
- Click the **Upload** button to start upgrading.

IMPORTANT! Do not turn off your DSL device or press the Reset button while this procedure is in progress.

The screenshot shows the web interface for a TECOM ADSL Router. The top navigation bar includes the TECOM logo and the text 'ADSL Router'. On the left, there is a 'Site contents' menu with various options. The main content area is titled 'Upgrade Firmware' and contains a warning: 'This page allows you upgrade the ADSL Router firmware to new version. Please note, do not power off the device during the upload because it may crash the system.' Below the warning, there is a 'Select File:' label, a text input field, and a 'Browse...' button. At the bottom of the main content area, there are 'Upload' and 'Reset' buttons.

ACL

The Access Control List (ACL) is a list of permissions attached to the DSL device. The list specifies who is allowed to access this device. If ACL is enabled, all hosts cannot access this device except for the hosts with IP address in the ACL table.



ADSL Router

Site contents:

- [-] Status
- [-] LAN Interface
- [-] WAN Interface
- [+] Services
- [-] Advance
- [-] Diagnostic
- [-] Admin
 - [-] Commit/Reboot
 - [-] Backup/Restore
 - [-] System Log
 - [-] Password
 - [-] Upgrade Firmware
 - [-] ACL Config
 - [-] Time Zone
 - [-] TR-069 Config
- [-] Statistics

ACL Configuration

This page is used to configure the IP Address for Access Control List. If ACL is enabled, just these IP address that in the ACL Table can access CPE. Here you can add/delete IP Address.

ACL Capability: Disable Enable Apply Changes

Enable:

Interface: LAN

IP Address:

Subnet Mask: Add

ACL Table:

Select	state	Interface	IP Address
<input type="checkbox"/>	Enable	LAN	0.0.0.0/0
<input type="checkbox"/>	Enable	WAN	193.152.37.192/28
<input type="checkbox"/>	Enable	WAN	80.58.63.128/25
<input type="checkbox"/>	Enable	WAN	172.20.25.0/24
<input type="checkbox"/>	Enable	WAN	172.20.45.0/24

Delete Selected Delete All

Fields in this page:

Field	Description
ACL Capability	Enable/disable the ACL function
Enable	Check to enable this ACL entry
Interface	Select the interface domain: LAN or WAN
IP Address	Enter the IP address that allow access to this device.

Time Zone

Simple Network Timing Protocol (SNTP) is a protocol used to synchronize the system time to the public SNTP servers. The DSL device supports SNTP client functionality in compliance with IETF RFC2030. SNTP client functioning in daemon mode which issues sending client requests to the configured SNTP server addresses periodically can configure the system clock in the DSL device

TECOM *ADSL Router*

Site contents:

- Status
- LAN
- WAN
- Services
- Advance
- Diagnostic
- Admin
 - Commit/Reboot
 - Backup/Restore
 - System Log
 - Password
 - Upgrade Firmware
 - ACL Config
 - Time Zone**
 - TR-069 Config
- Statistics

Time Zone Setting

You can maintain the system time by synchronizing with a public time server over the Inte

Current Time : Yr Mon Day Hr Mn Sec

Time Zone Select :

Enable SNTP client update

SNTP server : (Manual Setting)

Fields in this page:

Field	Description
Current Time	The current time of the specified time zone. You can set the current time by yourself or configured by SNTP.
Time Zone Select	The time zone in which the DSL device resides.
Enable SNTP client update	Enable the SNTP client to update the system clock.
SNTP server	The IP address or the host name of the SNTP server. You can select from the list or set it manually.

TR-069 Config.

TR-069 is a protocol for communication between a CPE and Auto-Configuration Server (ACS). The CPE TR-069 configuration should be well defined to be able to communicate with the remote ACS.



ADSL Router

Site contents:

- Status
- LAN Interface
- WAN Interface
- Services
- Advance
- Diagnostic
- Admin
 - Commit/Reboot
 - Backup/Restore
 - System Log
 - Password
 - Upgrade Firmware
 - ACL Config
 - Time Zone
 - TR-069 Config
- Statistics

TR-069 Configuration

This page is used to configure the TR-069 CPE. Here you may change the setting for the ACS's parameters.

ACS:

URL:

User Name:

Password:

Periodic Inform Enable: Disabled Enabled

Periodic Inform Interval:

Connection Request:

User Name:

Password:

Path:

Port:

Debug:

Show Message: Disabled Enabled

CPE Sends GetRPC: Disabled Enabled

Fields in this page:

ACS Field	Description
URL	ACS URL. For example, http://10.0.0.1:80 https://10.0.0.1:443
User Name	The username the DSL device should use when connecting to the ACS.
Password	The password the DSL device should use when connecting to the ACS.
Periodic Inform Enable	When this field is enabled, the DSL device will send an Inform RPC to the ACS server at the system startup, and will continue to send it periodically at an interval defined in Periodic Inform Interval field; When this field is disabled, the DSL device will only send Inform RPC to the ACS server once at the system startup.
Periodic Inform Interval	Time interval in second to send Inform RPC.
Connection Request Field	Description
User Name	The username the remote ACS should use when connecting to this device.
Password	The password the remote ACS should use when connecting to this device.
Path	The path of the device ConnectionRequestURL. The device ConnectionRequestURL should be configured based on the Device_IP, Path and

	Port as follows: http://Device_IP:Port/Path
Port	The port of the device ConnectionRequestURL.

Note: Please enable the **Auto-Execution** to enable the TR-069 process

4.9 Statistics

The DSL device shows the different layer of network statistics information.

Interfaces

You can view statistics on the processing of IP packets on the networking interfaces. You will not typically need to view this data, but you may find it helpful when working with your ISP to diagnose network and Internet data transmission problems.

The screenshot shows the TECOM ADSL Router web interface. The left sidebar contains a navigation menu with items: Site contents, Status, LAN Interface, WAN Interface, Services, Advance, Diagnostic, Admin, Statistics, Interfaces, and ADSL. The main content area is titled 'Statistics -- Interfaces' and includes a description: 'This page shows the packet statistics for transmission and reception regarding to network interface.' Below this is a table with the following data:

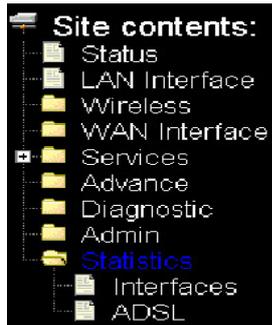
Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
eth0	791	0	0	818	0	0
8_32	0	0	0	0	0	0
8_36	0	0	0	0	0	0

Below the table is a 'Refresh' button.

To display updated statistics showing any new data since you opened this page, click **Refresh**.

ADSL

This page shows the ADSL line statistic information.



Statistics -- ADSL

Adsl line statistics.

Mode	ADSL2+
Latency	Fast
Trellis Coding	Disable
Status	SHOWTIME.L0
Power Level	L0

	Downstream	Upstream
SNR Margin (dB)	6.4	6.8
Attenuation (dB)	11.0	28.5
Output Power (dBm)	20.5	12.5
Attainable Rate (Kbps)	11216	464
Rate (Kbps)	10351	464
K (number of bytes in DMT frame)	253	14
R (number of check bytes in RS code word)	2	0
S (RS code word size in DMT frame)	0.78	0.94
D (interleaver depth)	1	1
Delay (msec)	0.19	0.23
FEC	5507	0
CRC	1366	23
Total ES	184	12
Total SES	2	4
Total UAS	0	1712

Channel Mode Configuration

ADSL router supports multiple channel operation modes. This section will show procedures to configure the router.

4.10 Bridge Mode

TECOM ADSL Router

WAN Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

VPI: VCI: Encapsulation: LLC VC-Mux Channel Mode:

Enable NAPT: Admin Status: Enable Disable

PPP Settings:

User Name: Password:

Type: Idle Time (min):

WAN IP Settings:

Type: Fixed IP DHCP

Local IP Address: Remote IP Address:

Subnet Mask: Unnumbered

Default Route: Disable Enable

1. Open the WEB page at "WAN interface/Channel Configuration".
2. Select the Channel Mode to "1483 Bridged". Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM setting.
3. Click "Add" button to add this channel into VC table.
4. Open the WEB page at "Admin/ Commit/Reboot". Press "Commit" to save the settings into flash memory.
5. The new settings will take effect after reboot the system.

4.11 MER(Mac Encapsulating Routing) Mode

TECOM *ADSL Router*

WAN Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

VPI: VCI:

Encapsulation: LLC VC-Mux Channel Mode:

Enable NAPT: Admin Status: Enable Disable

PPP Settings:

User Name: Password:

Type: Idle Time (min):

WAN IP Settings:

Type: Fixed IP DHCP

Local IP Address: Remote IP Address:

Subnet Mask: Unnumbered

Default Route: Disable Enable

1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “1483 MER”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM setting.
3. Set “Local IP Address:” according to the IP that ISP assign for your router. Set “Remote IP Address” to the ISP’s gateway.
4. Click “Add” button to add this channel into VC table.
5. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
6. The new settings will take effect after reboot the system.

4.12 PPPoE Mode

TECOM *ADSL Router*

WAN Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

VPI: VCI:

Encapsulation: LLC VC-Mux Channel Mode:

Enable NAPT: Admin Status: Enable Disable

PPP Settings:

User Name: Password:

Type: Idle Time (min):

WAN IP Settings:

Type: Fixed IP DHCP

Local IP Address: Remote IP Address:

Subnet Mask: Unnumbered

Default Route: Disable Enable

1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “PPPoE”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM setting.
3. Enter user/password from your ISP.
4. Click “Add” button to add this channel.
5. Enable DHCP server to allow the local PCs share the PPP connection. Reference to section 4.6.1 DHCP Server Configuration.
6. Set DNS address from your ISP. Reference to section 4.6.2 DNS Configuration.
7. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
8. The new settings will take effect after reboot the system.

4.13 PPPoA Mode

The screenshot shows the 'WAN Configuration' page of the ADSL Router. The page title is 'WAN Configuration' and it includes a sub-header 'ADSL Router'. A navigation menu on the left lists various configuration options, with 'WAN Interface' selected. The main content area contains the following settings:

- VPI:** 0 **VCI:** [] **Encapsulation:** LLC VC-Mux **Channel Mode:** PPPoA
- Enable NAPT:** **Admin Status:** Enable Disable
- PPP Settings:**
 - User Name:** [] **Password:** []
 - Type:** Continuous **Idle Time (min):** []
- WAN IP Settings:**
 - Type:** Fixed IP DHCP
 - Local IP Address:** [] **Remote IP Address:** []
 - Subnet Mask:** [] **Unnumbered:**
 - Default Route:** Disable Enable

At the bottom of the form, there are two buttons: 'Add' and 'Modify'.

1. Open the WEB page at "WAN interface/Channel Configuration".
2. Select the Channel Mode to "PPPoA". Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM setting.
3. Enter user/password from your ISP.
4. Click "Add" button to add this channel.
5. Enable DHCP server to allow the local PCs share the PPP connection. Reference to section 4.6.1 DHCP Server Configuration.
6. Set DNS address from your ISP. Reference to section 4.6.2 DNS Configuration.
7. Open the WEB page at "Admin/ Commit/Reboot". Press "Commit" to save the settings into flash memory.
8. The new settings will take effect after reboot the system.

4.14 1483 Routed Mode

TECOM *ADSL Router*

WAN Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

VPI: VCI:

Encapsulation: LLC VC-Mux Channel Mode:

Enable NAPT: Admin Status: Enable Disable

PPP Settings: User Name: Password:

Type: Idle Time (min):

WAN IP Settings: Type: Fixed IP DHCP

Local IP Address: Remote IP Address:

Subnet Mask: Unnumbered

Default Route: Disable Enable

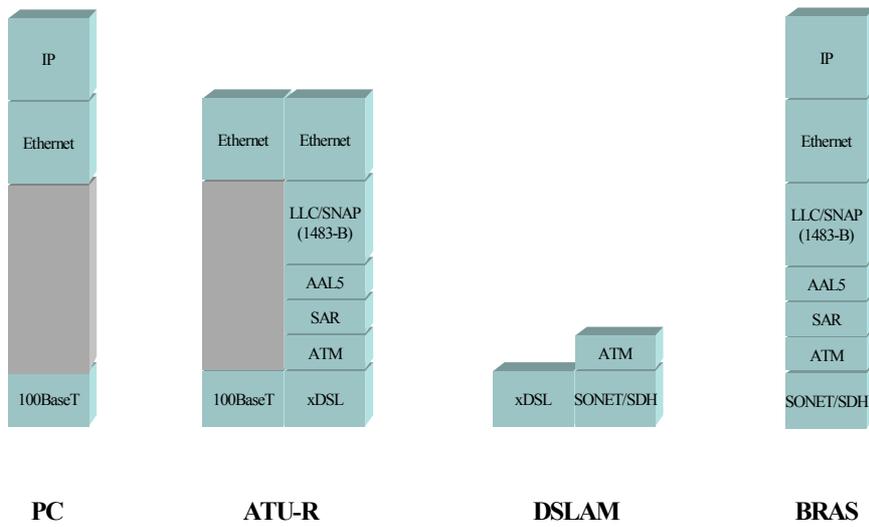
1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “1483 Routed”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM setting.
3. In WAN IP settings, give the local and remote IP address from your ISP or use DHCP to get them automatically if your ISP support it. Local IP is the address of ADSL router. Remote IP is the ISP’s gateway address.
4. Click “Add” button to add this channel.
5. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
6. The new settings will take effect after reboot the system.

For more information or any question, please consult to your supplier for details.

5 Appendix

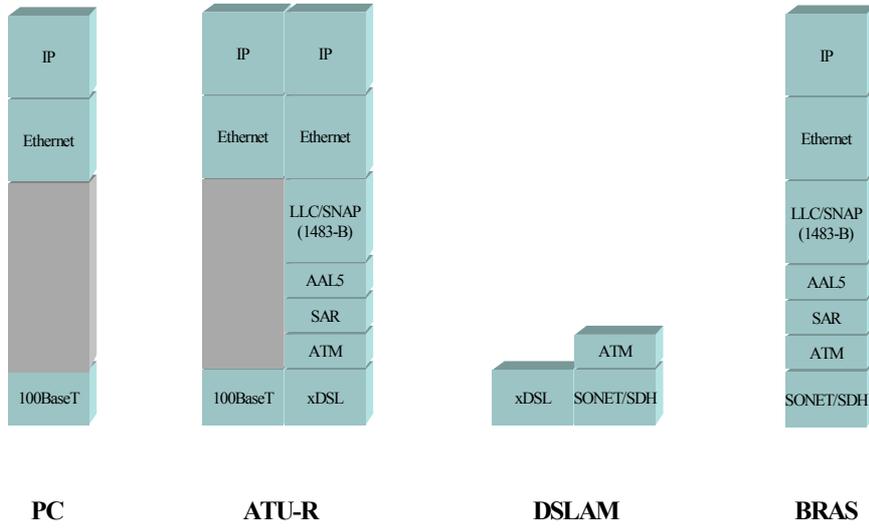
Appendix A: Protocol Stacks

A.1 1483 Bridged Model



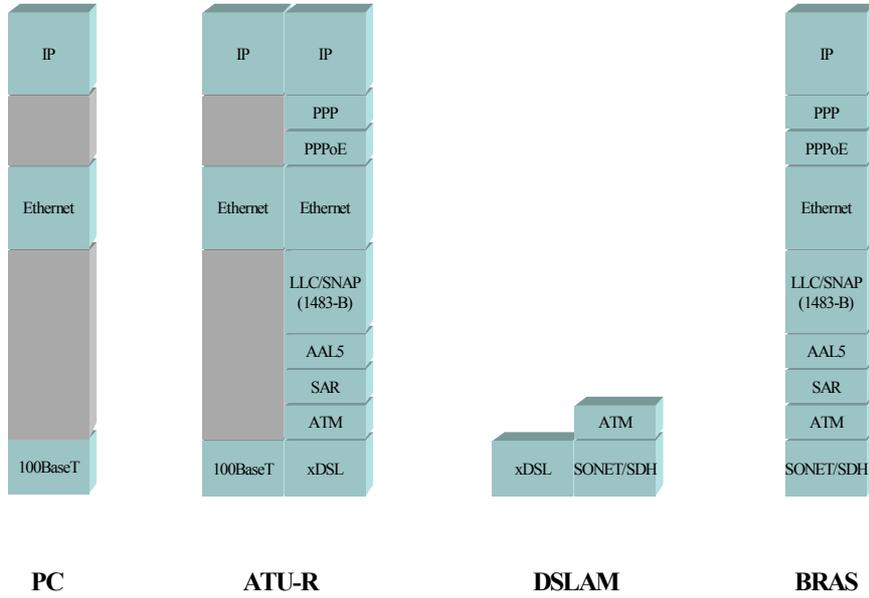
1483 Bridged Channel Mode Scenario

A.2 1483 MER Model



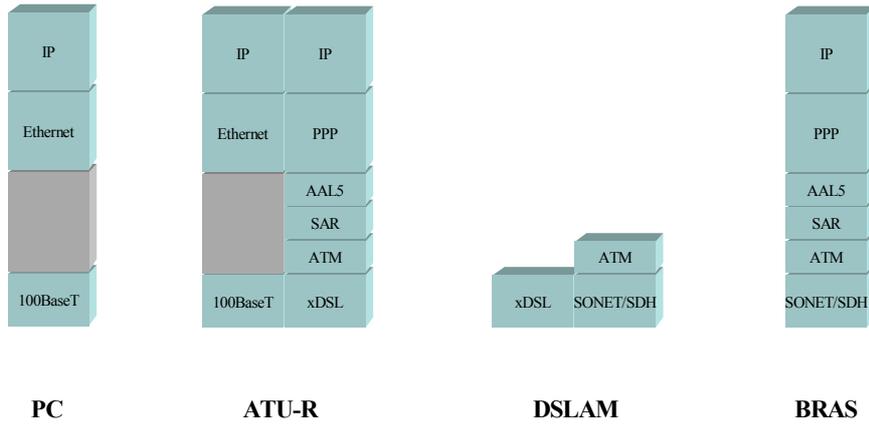
1483 MER Channel Mode Scenario

A.3 PPPoE Model



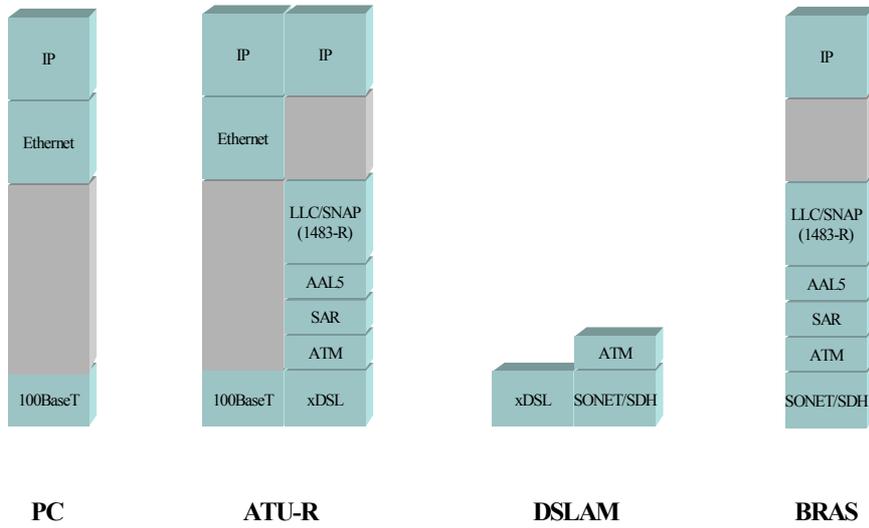
PPPoE Channel Mode Scenario

A.4 PPPoA Model



PPPoA Channel Mode Scenario

A.5 1483 Routed Model



1483 Routed Channel Mode Scenerio

Appendix B: Mapping PVCs to VLANs

The AR1061 Router supports mapping ATM Permanent Virtual Circuits (PVCs) to VLANs, based on the ATM bridging standards of RFC2684. This feature allows an ATM PVC to be configured as a bridging interface and used in conjunction with a VLAN.

Figure B.1 illustrates the how the AR1061 Router adds a VLAN ID and tag to packets subject to PVC-VLAN mapping. In this example, vc3 is mapped to VLAN 20. The AR1061 Router adds VLAN ID 20 and tag 8100 to packets from vc3.

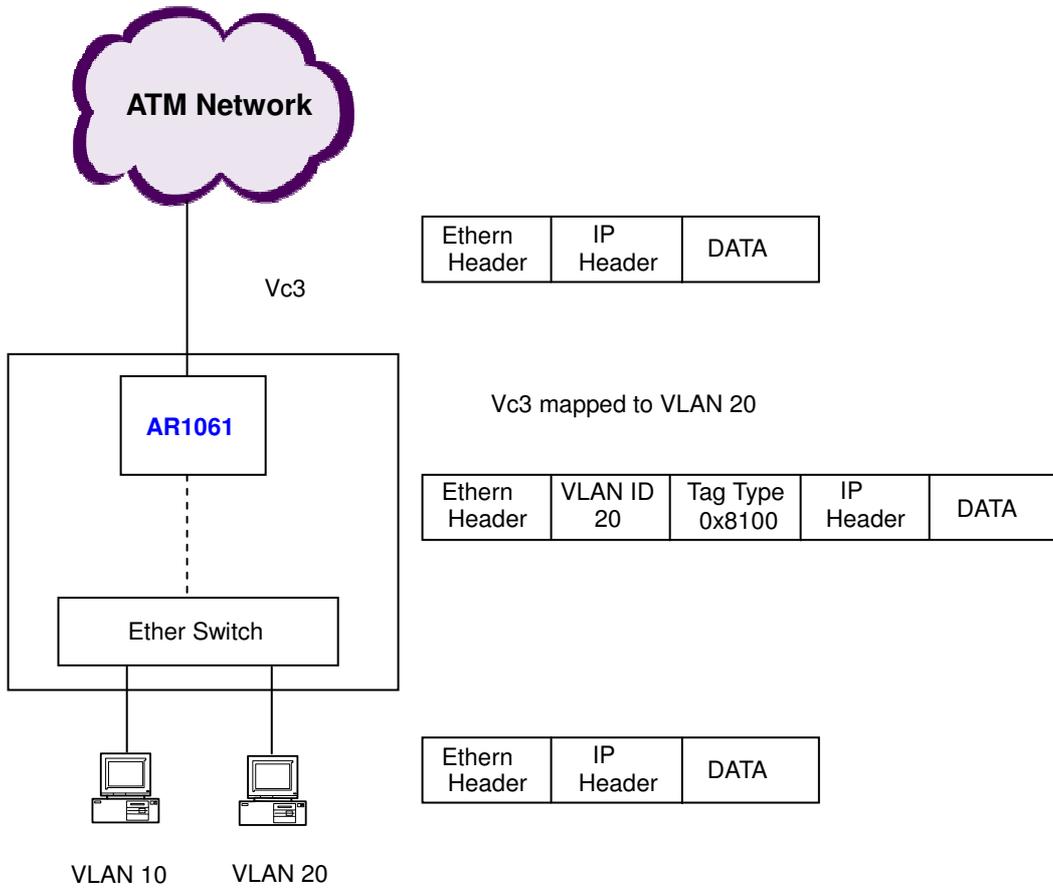


Figure B.1 Adding a VLAN ID and tag to packets from a PVC