

PD1101-K318M  
ADSL Router User Manual

## NOTICE

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## 1 Overview

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Thank you for choosing our product. The ADSL Router uses Broadcom's CPE solution that fully complies with ADSL, ADSL2, ADSL2+ standards. It will provide your SOHO with convenient Internet access.

### 1.1 Features

#### 1.1.1 Data rate

- Downstream data rate up to 24 Mbps,
- Upstream data rate up to 3.5Mbps (With AnnexM enabled)

#### 1.1.2 ADSL Compliance

- ITU G.992.1 (G.DMT)
- ITU G.992.2 (G.Lite)
- ITU G.994.1 (G.hs)
- ITU G.992.3 (G.DMT.BIS)
- ITU G.992.4 (G.lite.bis)
- ITU G.992.5
- Compatible with all T1.413 issue 2 (full rate DMT over analog POTS), and CO DSLAM equipment
- TR-069 compliant with ACS

#### 1.1.3 Network Protocol and Features

- Ethernet to ADSL Self-Learning Transparent Bridging
- Internet Control Message Protocol (ICMP)
- IP Static Routing
- Routing Information Protocol (RIP, RIPv2)
- Network Address Translation (NAT)
- Virtual Server, Port Forwarding

- Dynamic Host Configuration Protocol (DHCP)
- DDNS
- Simple Network Time Protocol (SNTP)
- VPN pass-through (IPSec/PPTP/L2TP)
- Parent control

#### 1.1.4 ATM Capabilities

- RFC 1483 Multi-protocol over ATM “Bridged Ethernet” compliant
- RFC 2364 PPP over ATM compliant
- RFC 2516 PPP over Ethernet compliant
- ATM Forum UNI3.1/4.0 PVC
- VPI Range: 0-255
- VCI Range: 32-65535
- UNI 3.0 & 3.1 Signaling
- ATM AAL5 (Adaption Layer type 5)
- OAM F4/F5

#### 1.1.5 FIREWALL

- Built-in NAT
- MAC Filtering
- Packet Filtering
- Stateful Packet Inspection (SPI)
- Denial of Service Prevention (DoS)
- DMZ

#### 1.1.6 Management Support

- Web Based GUI

- Upgrade or update via FTP/HTTP
- Command Line Interface via Telnet
- Diagnostic Test
- Firmware upgrade-able for future feature enhancement

### 1.1.7 Operating System Support

- WINDOWS 98/SE/ME/2000/XP/VISTA/7
- Macintosh
- LINUX

### 1.1.8 Environmental

- Operating humidity: 10%-90% non-condensing
- Non-operating storage humidity: 5%-95% non-condensing

## 1.2 Packet Contents

The packet contents are as the following:

- |                     |     |
|---------------------|-----|
| ● ADSL ROUTER       | x 1 |
| ● External Splitter | x 1 |
| ● Power Adapter     | x 1 |
| ● Telephone Line    | x 1 |
| ● Ethernet Cable    | x 1 |
| ● CD                | x 1 |

## 1.3 System Requirements

Before using this ROUTER, verify that you meet the following requirements:

- Subscription for ADSL service. Your ADSL service provider should provide you with at least one valid IP address (static assignment or dynamic assignment via dial-up connection).
- One or more computers, each contains an Ethernet 10/100M Base-T network interface card (NIC).

- A hub or switch, if you are connecting the device to more than one computer.
- For system configuration using the supplied web-based program: A web browser such as Internet Explorer v5.0 or later, or Netscape v4.7 or later.

## 1.4 Factory Defaults

The device is configured with the following factory defaults:

- IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0
- Encapsulation: LLC/SNAP-BRIDGING or VC/MUX
- VPI/VCI: According to local information

## 1.5 Warnings and Cautions

- Never install telephone wiring during storm. Avoid using a telephone during an electrical storm. There might be a risk of electric shock from lightening.
- Do not install telephone jacks in wet locations and never use the product near water.
- To prevent dangerous overloading of the power circuit, be careful about the designed maximum power load ratings. Not to follow the rating guideline could result in a dangerous situation.
- Please note that telephone line on modem must adopt the primary line that directly outputs from junction box. Do not connect Router to extension phone. In addition, if your house developer divides a telephone line to multi sockets inside the wall of house, please only use the telephone that has connected with the splitter of ADSL Router when you access the Internet. Under the above condition, if you also install telephone with anti-cheat-dial device, please pull out this kind of telephone, otherwise ADSL Router may occur frequently off-line.

## 2 Hardware Description

### Front Panel



LED	Color	Function
PWR	Green	On: Power on Off: No power
ETH1-4	Green	On: LAN link established and active via LAN port Blinking: ADSL data activity occurs Off: No LAN link via LAN port
DSL	Green	On: ADSL link established and active Quick Blinking: ADSL is trying to establish a connection Slow Blinking: No ADSL link
INET	Green	On: IP connected Blinking: IP connected and IP traffic is passing thru the device Off: Modem power off or ADSL connection not present



## Rear panel



Port	Function
DSL	Connect the device to an ADSL telephone jack or splitter using a RJ-11 telephone cable
ETH1-4	Connect the device to user's PC's Ethernet port, or to the uplink port on user's hub/switch, using a RJ-45 cable
RESET	System reset or reset to factory defaults
ON/OFF	Switch it on or off
POWER	Connect to the supplied power adapter

### 3 Hardware Installation

This chapter shows user how to connect Router. Meanwhile, it introduces the appropriate environment for the Router and installation instructions.

1. Using a telephone line to connect the **DSL** port of ROUTER to the **Modem** port of the splitter, and using a other telephone line connect user's telephone to the **PHONE** port of the splitter, then connect the wall phone jack to the **LINE** port of the splitter.

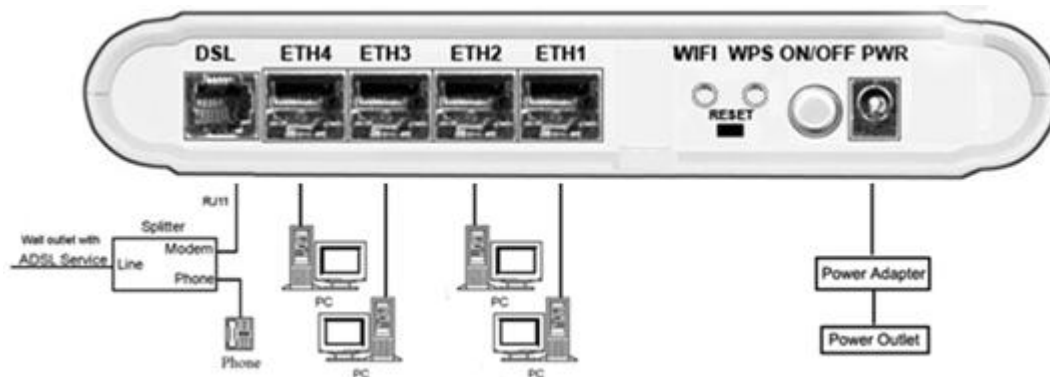
The splitter comes with three connectors as below:

**LINE:** Connects to a wall phone jack (RJ-11 jack)

**ROUTER:** Connects to the DSL jack of ROUTER

**PHONE:** Connects to a telephone set

2. Using an Ethernet Cable to connect the LAN port of the ROUTER to user's LAN or a PC with network card installed.
3. Connect the power cable to the POWER connector on ROUTER, then plug in the power adapter to the power outlet, and then press the on-off button.



**Notes:** Without the splitter and certain situation, transient noise from telephone can interfere with the operation of the Router, and the Router may introduce noise to the telephone line. To prevent this from happening, a small external splitter must be connected to each telephone.

## 4 PC Configuration Guide

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### 4.1 Local PC Configuration in Windows 95, 98, ME, XP

1. In the Windows task bar, click the “Start” button, point to “Settings”, and then click “Control Panel”.
2. Double-click the “Network” icon.
3. On the “Configuration” tab, select the TCP/IP network associated with user’s network card and then click “Properties”.
4. In the “TCP/IP Properties” dialog box, click the “IP Address” tab. Set the IP address as 192.168.1.x (x can be a decimal number from 2 to 254.) like 192.168.1.2, and the subnet mask as 255.255.255.0.
5. On the “Gateway” tab, set a new gateway as 192.168.1.1, and then click “Add”.
6. Configure the “DNS” tab if necessary. For information on the IP address of the DNS server, please consult with user’s ISP.
7. Click “OK” twice to confirm and save user’s changes.
8. User will be prompted to restart Windows. Click “Yes”.

### 4.2 Local PC Configuration in Windows 2000

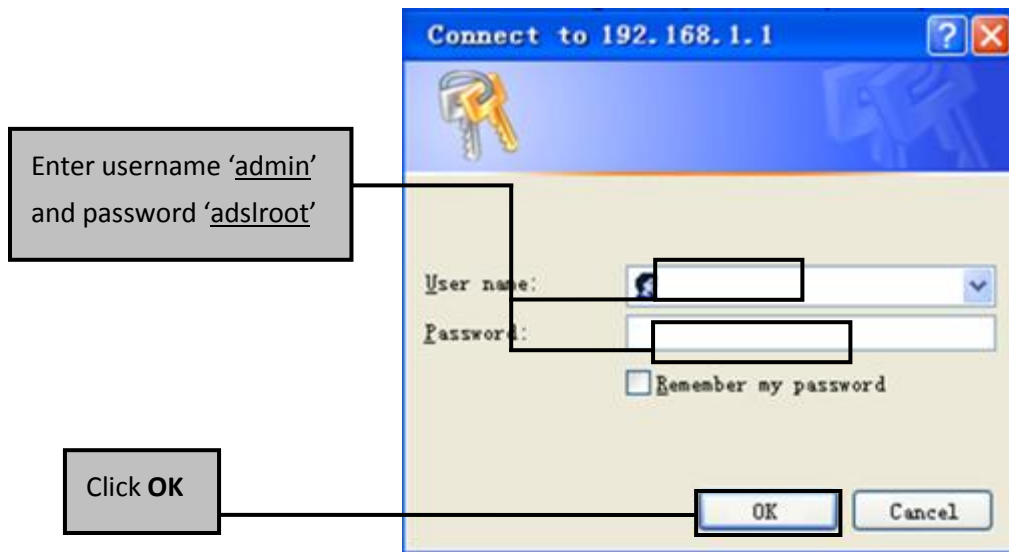
1. In the Windows task bar, click the “Start” button, point to “Settings”, and then click “Control Panel”.
2. Double-click the “Network and Dial-up Connections” icon.
3. In the “Network and Dial-up Connections” window, right-click the “Local Area Connection” icon, and then select “Properties”.
4. Highlight “Internet Protocol (TCP/IP)”, and then click “Properties”.
5. In the “Internet Protocol (TCP/IP) Properties” dialog box, set the IP address as 192.168.1.x (x can be a decimal number from 2 to 254.), and the subnet mask as 255.255.255.0 and the default gateway as 192.168.1.1. Then click “OK”.
6. Configure the “DNS” tab if necessary. For information on the IP address of the DNS server, please consult with user’s ISP.
7. Click “OK” twice to confirm and save user’s changes.

## 5 Web-based Management Guide

In order to use the web-based management software it will be necessary to use a computer that occupies the same subnet as the Router. The simplest way to do this for many users will be to use DHCP server that is enabled by default on the Router.

### 5.1 LAN setting page

Launch a web browser, such as Internet Explorer, and then use <http://192.168.1.1> to log on to the setting pages.



After user log in to the modem, the general status page appears.

### 5.2 Internet Access Configuration

The setup wizard will guide you to configure the DSL router to access Internet via PPPoE type.

#### 5.2.1 ADSL Setup

From home page, you can find **Advanced Setup** option on the left router configuration page.

1. From **Layer2 Interface**, click **ATM Interface**. you can set it up according to the following steps. You Choose **Add**, or **Remove** to configure DSL ATM interfaces.

Interface	Vpi	Vci	DSL Latency	Category	Link Type	Connection Mode	IP QoS	Scheduler Alg	Queue Weight	Group Precedence	Remove
<div> Add Remove </div>											

- Click **Add** to configure PVC identifier, select DSL latency and select connection mode according to your local occasion. After the configuration, you need to click **Apply/Save**.

VPI: [0-255]

VCI: [32-65535]

Select DSL Latency

☒ Path0

☐ Path1

Select DSL Link Type (EoA is for PPPoE, IPoE, and Bridge.)

☒ EoA

☐ PPPoA

☐ IPoA

Select Connection Mode

☒ Default Mode - Single service over one connection

☐ VLAN MUX Mode - Multiple Vlan service over one connection

Encapsulation Mode:

Service Category:

- Click **WAN Service** from **Advanced Setup**.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	Remove	Edit
-----------	-------------	------	-----------	-----------	------	-----	----------	--------	------

- Click **Add** to select a layer 2 interface for this service and then click **Next**.

5. Choose WAN service type, just choose PPPoE for example here. You can enter your own service description here if you want and then click **Next**.

Select WAN service type:

- ☒ PPP over Ethernet (PPPoE)  
☐ IP over Ethernet  
☐ Bridging

Enter Service Description:

6. Input **PPP Username & PPP Password** and then click **Next**. The user interface allows a maximum of 256 characters in the user name and a maximum of 32 characters in the password.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method:  ▼

MTU [88-1492] :

☐ Enable Fullcone NAT

☐ Enable NAT

☐ Enable Firewall

☐ Dial on demand (with idle timeout timer)

☐ PPP IP extension

☐ Use Static IPv4 Address

- ☐ Enable PPP Debug Mode
- ☐ Bridge PPPoE Frames Between WAN and Local Ports

#### Multicast Proxy

- ☐ Enable IGMP Multicast Proxy

**PPPoE service name** can be blank unless your Internet Service Provider gives you a value to enter.

**Authentication method** is default to **Auto**. It is recommended that you leave the **Authentication method** in **Auto**, however, you may select **PAP** or **CHAP** if necessary. The default value for MTU (Maximum Transmission Unit) is **1500** for PPPoA and **1492** for PPPoE. Do not change these values unless your ISP asks you to.

**Enable FullCone NAT**, all requests from the same private IP address and port are mapped to the same public source IP address and port. Someone on the Internet only needs to know the mapping scheme in order to send packets to a device behind the ADSL router.

The gateway can be configured to disconnect if there is no activity for a specific period of time by selecting the **Dial on demand** check box and entering the **Inactivity timeout**. The entered value must be between 1 minute and 4320 minutes.

The **PPP IP Extension** is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it. If you need to select it, the PPP IP Extension supports the following conditions:

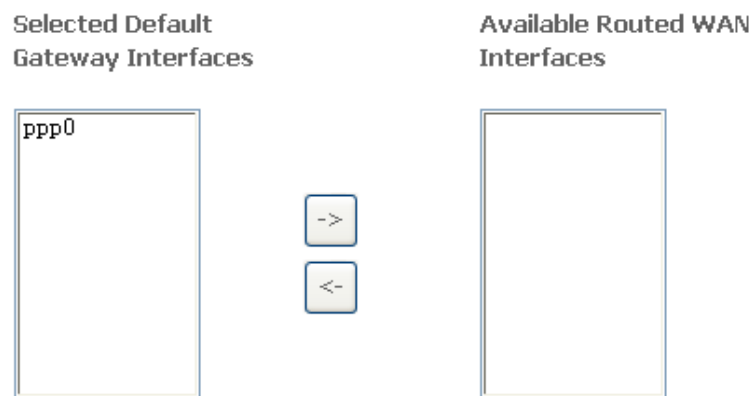
- It allows only one computer on the LAN.
- The public IP address assigned by the remote using the PPP/IPCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the computer's LAN interface through DHCP. Only one system on the LAN can be connected to the remote, since the DHCP server within the ADSL gateway has only a single IP address to assign to a LAN device.
- NAPT and firewall are disabled when this option is selected.
- The gateway becomes the default gateway and DNS server to the computer through DHCP using the LAN interface IP address.
- The gateway extends the IP subnet at the remote service provider to the LAN computer. That is, the PC becomes a host belonging to the same IP subnet.

- The ADSL gateway bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the gateway's LAN IP address.

**Use static IPv4 IP address**, If the ISP gave you a static IP address, select this option and enter it in the IP address field.

**Bridge PPPoE Frames Between WAN and Local Ports** is available when you do not use **PPP IP extension**. If you enable this function, LAN hosts can use PPPoE client software on their computers to connect to the ISP. Each host can have a separate account and a public WAN IP address.

7. Select a preferred wan interface as the system default gateway.



8. Get DNS server information from the selected WAN interface or enter static DNS server IP addresses. If only a single PVC with IPoA or static MER protocol is configured, you must enter static DNS server IP addresses.

☒ Select DNS Server Interface from available WAN interfaces:

Selected DNS Server Interfaces	Available WAN Interfaces
<div>ppp0</div>	

☐ Use the following Static DNS IP address:

Primary DNS server:

Secondary DNS server:



9. Make sure that the settings below match the settings provided by your ISP. Click on the **Apply/Save** button to save your configurations.

<b>Connection Type:</b>	PPPoE
<b>NAT:</b>	Disabled
<b>Full Cone NAT:</b>	Disabled
<b>Firewall:</b>	Disabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Enabled

### 5.2.2 Router Mode Setup

1. From **Advanced Setup**, click **Layer2 Interface** and select **ETH Interface**. Before you configure ETH WAN interface, you'd better remove all PVC settings from **ATM interface**.

Interface/(Name)	Connection Mode	Remove
<div style="text-align: center;"> <input type="button" value="Add"/> <input type="button" value="Remove"/> </div>		

2. Click **Add** and you'll see the following screen.

Select a ETH port:

eth0/ENET1 ▼

#### Select Connection Mode

- ☒ Default Mode - Single service over one connection  
☐ VLAN MUX Mode - Multiple Vlan service over one connection

3. Select a ETH port as you will. You can select ENET1, ENET2, ENET3 or ENET4 port as the WAN interface and Default Mode as connection mode.

eth1/ENET2 ▼

#### Select Connection Mode

- ☒ Default Mode - Single service over one connection  
☐ VLAN MUX Mode - Multiple Vlan service over one connection

4. Click **Apply/Save** and you'll see the following screen.

Interface/ (Name)	Connection Mode	Remove
eth1/ENET2	DefaultMode	<input type="checkbox"/>

Remove

5. From **Advanced Setup**, click **WAN Service** to configure a WAN service over the interface you selected.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	Remove	Edit
-----------	-------------	------	-----------	-----------	------	-----	----------	--------	------

Add

Remove

6. Click **Add** and you'll see the following screen.

eth1/ENET2 ▼

Back

Next

7. Click **Next** and you'll see the following screen. Select PPPoE as WAN service type for example. Click **Next**.

Select WAN service type:

☒ PPP over Ethernet (PPPoE)

☐ IP over Ethernet

Enter Service Description:

Back

Next

8. Enter the user name and password that your ISP has provided to you. Click **Next**.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method: **AUTO** ▼

MTU [88-1492] :

☐ Enable Fullcone NAT

☐ Enable NAT

☐ Enable Firewall

☐ Dial on demand (with idle timeout timer)

☐ PPP IP extension

☐ Use Static IPv4 Address

☐ Enable PPP Debug Mode

☐ Bridge PPPoE Frames Between WAN and Local Port

**Multicast Proxy**

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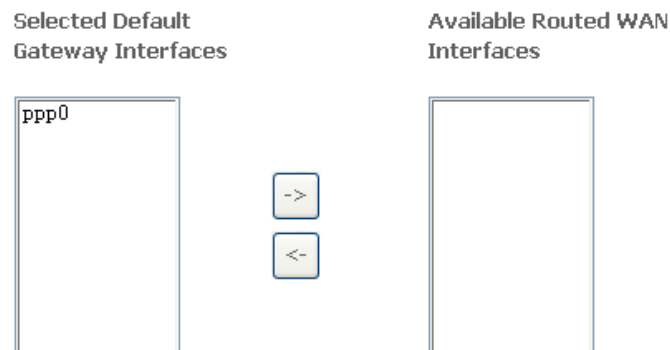
**Authentication method** is default to **Auto**. It is recommended that you leave the **Authentication method** in **Auto**, however, you may select **PAP** or **CHAP** if necessary. The default value for MTU (Maximum Transmission Unit) is **1500** for PPPoA and **1492** for PPPoE. Do not change these values unless your ISP asks you to.

The gateway can be configured to disconnect if there is no activity for a specific period of time by selecting the **Dial on demand** check box and entering the **Inactivity timeout**. The entered value must be between 1 minute and 4320 minutes.

The **PPP IP Extension** is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it. If you need to select it, the PPP IP Extension supports the following conditions:

- It allows only one computer on the LAN.
- The public IP address assigned by the remote using the PPP/IPCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the computer's LAN interface through DHCP. Only one system on the LAN can be connected to the remote, since the DHCP server within the ADSL gateway has only a single IP address to assign to a LAN device.
- NAPT and firewall are disabled when this option is selected.
- The gateway becomes the default gateway and DNS server to the computer through DHCP using the LAN interface IP address.
- The gateway extends the IP subnet at the remote service provider to the LAN computer. That is, the PC becomes a host belonging to the same IP subnet.
- The ADSL gateway bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the gateway's LAN IP address.

9. Select WAN interface as the system default gateway. Click **Next**.



10. Get DNS server information from the selected WAN interface or enter static DNS server IP addresses. Click **Next**.

☒ Select DNS Server Interface from available WAN interfaces:

Selected DNS Server  
Interfaces

Available WAN Interfaces

ppp0	
------	--

->

<-

--

☐ Use the following Static DNS IP address:

Primary DNS server:

Secondary DNS server:

11. Make sure that the settings below match the settings provided by your ISP. Click on the **Apply/Save** button to save your configurations and reboot the ADSL router.

Connection Type:	PPPoE
NAT:	Disabled
Full Cone NAT:	Disabled
Firewall:	Disabled
IGMP Multicast:	Disabled
Quality Of Service:	Enabled

### 5.2.3 LAN Settings

From **LAN**, Configure the DSL Router's IP Address and Subnet Mask for LAN interface. In this page, you can use DHCP (Dynamic Host Configuration Protocol) to control the assignment of IP addresses on your local network (LAN only).

Configure the Broadband Router IP Address and Subnet Mask for LAN interface. GroupName Default ▾

IP Address:

Subnet Mask:

☐ Enable IGMP Snooping

☐ Enable LAN side firewall

☐ Disable DHCP Server

☒ Enable DHCP Server

Start IP Address:

End IP Address:

Leased Time (hour):

Static IP Lease List: (A maximum 32 entries can be configured)

MAC Address	IP Address	Remove
<input type="text" value="Add Entries"/>	<input type="text" value="Remove Entries"/>	

☐ Enable DHCP Server Relay

DHCP Server IP Address:

☒ Configure the second IP Address and Subnet Mask for LAN interface

IP Address:

Subnet Mask:

Item	Description
<b>IP address</b>	This is the IP address that other devices on your local network will use to connect to the modem.
<b>Subnet mask</b>	This defines the size of your network. The default is <b>255.255.255.0</b> .
<b>Enable IGMP</b>	IGMP Snooping is a method that actually “snoops” or inspects IGMP traffic on a switch. When enabled, the switch will watch for IGMP

<b>snooping</b>	<p>messages passed between a host and a router, and will add the necessary ports to its multicast table, ensuring that only the ports that require a given multicast stream actually receive it.</p> <p>Use standard mode to flood unknown multicast traffic.</p> <p>Use blocking mode to discard unknown multicast traffic.</p>
<b>Disable / Enable DHCP server</b>	<p>The DHCP server assigns an IP addresses from a pre-set pool of addresses upon request from DHCP client (e.g. your computer). Do not disable the DHCP server unless you wish to let another device handle IP address issuance on the local network.</p>
<b>Start / end IP address</b>	<p>This is the beginning and ending range for the DHCP server addresses.</p>
<b>Leased time</b>	<p>The amount of time before the IP address is refreshed by the DHCP server.</p>
<b>Configure the second IP address and...</b>	<p>Select this option to let the device use a second IP address on the LAN interface. You can also use this second IP address to access the device for management. Enter the LAN IP address of your device in dotted decimal notation, for example, 10.0.0.1. Type the subnet mask.</p>

**Note:** If you want to cancel all modification that you do on the Router, please select from “**Management⇒Setting⇒Restore Default Settings**” to restore factory default settings.

## 5.3 Management

### 5.3.1 Remote Access

When the firewall is enabled on a WAN or LAN interface, all incoming IP traffic is BLOCKED. However, some IP traffic can be **ACCEPTED** by setting up filters.

1. Select Advanced Setup=>Security=>IP Filtering=>Incoming and Choose Add or Remove to configure incoming IP filters.

Filter Name	Interfaces	IP Version	Protocol	SrcIP/ PrefixLength	SrcPort	DstIP/ PrefixLength	DstPort	Remove
-------------	------------	------------	----------	---------------------	---------	---------------------	---------	--------

2. Click Add to add rules. If you want to do remote ping test, please select protocol as ICMP; If you want to do Http or Telnet test, please select protocol as TCP/UDP. If you want only Http remote access, you can set destination port as 80; If you want only Telnet remote access, you can set destination port as 23; If you want both, you can set destination port as blank.

Filter Name:

IP Version:

Protocol:

Source IP address[/prefix length]:

Source Port (port or port:port):

Destination IP address[/prefix length]:

Destination Port (port or port:port):

3. Click Apply/Save and select Device Info=>WAN. You can see the IP address of WAN interface

Interface	Description	Type	VlanMuxId	Igmp	NAT	Firewall	Status	IPv4 Address
atm0	ipoe_0_1_35	IPoE	Disabled	Disabled	Disabled	Disabled	Connecting	0.0.0.0

4. Now you can access the ADSL router remotely using username **support** and password **support**. You can input <http://x.x.x.x/> for Http and input telnet x.x.x.x for Telnet.



### 5.3.2 TR-069 Client

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Inform	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Inform Interval:	<input type="text" value="300"/>
ACS URL:	<input type="text"/>
ACS User Name:	<input type="text" value="admin"/>
ACS Password:	<input type="password" value="•••••"/>
WAN Interface used by TR-069 client:	<input type="text" value="Any_WAN"/> ▼
Display SOAP messages on serial console	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
<input checked="" type="checkbox"/> Connection Request Authentication	
Connection Request User Name:	<input type="text" value="admin"/>
Connection Request Password:	<input type="password" value="•••••"/>
Connection Request URL:	<input type="text"/>
<input type="button" value="Apply/Save"/> <input type="button" value="GetRPCMethods"/>	

**Inform:** Whether or not the CPE must periodically send CPE information to Server using the Inform method call.

**Inform Interval:** The duration in seconds of the interval for which the CPE MUST attempt to connect with the ACS and call the Inform method if Inform is enabled.

**ACS URL:** URL for the CPE to connect to the ACS using the CPE WAN Management Protocol.

**ACS User Name:** Username used to authenticate an ACS making a Connection Request to the CPE.

**ACS Password:** Password used to authenticate an ACS making a Connection Request to the CPE. When read, this parameter returns an empty string, regardless of the actual value.

**WAN Interface used by TR-069 client:** Remember to choose the interface of PVC used for TR069

**Connection Request User Name:** Username used to authenticate the CPE when

making a connection to the ACS using the CPE WAN Management Protocol. This username is used only for authentication of the CPE.

**Connection Request Password:** Password used to authenticate the CPE when making a connection to the ACS using the CPE WAN Management Protocol. This password is used only for authentication of the CPE.

**GetRPCMethods:** Used by a CPE or ACS to discover the set of methods supported by the ACS or CPE it is in communicate with.

## Appendix: Frequent Asked Questions

Q: None of the LEDs are on when user power on the ADSL router?

A: Please make sure what user use is the power adaptor attached with the ADSL router package, and check the connection between the AC power and ADSL router.

Q: DSL LED does not turn on after connect telephone line?

A: Please make sure what user use is the standard telephone line (as attached with the package), make sure the line is connected correctly and check whether there is poor contact at each interface. Wait for 30 seconds to allow the ADSL router establishes connection with user ADSL operator.

Q: DSL LED is in the circulation of slow-flashing and fast-flashing after connect telephone line?

A: This situation means the ADSL router is in the status of failing to establish connection with Central Office. Please check carefully and confirm whether the ADSL router has been installed correctly.

Q: LAN LED does not turn on after connect Ethernet cable?

A: Please make sure Ethernet cable is connected hub/PC and ADSL router correctly. Then please make sure the PC/hub have been power on.

Please make sure that user use parallel network cable to connect UpLink port of hub, or use parallel network cable to connect PC. If connect normal port of hub (not UpLink port), user must use cross-cable. Please make sure that user's network cables meet the networking requirements above.

Q: PC cannot access the Internet?

A: First check whether PC can ping the interface Ethernet IP address of this product successfully (default value is 192.168.1.1) by using ping application. If ping application fails, please check the connection of Ethernet cable and check whether the states of LEDs are in gear.

If the PC uses private IP address that is set manually (non-registered legal IP address), please check:

1. Whether IP address of the PC gateway is legal IP address. Otherwise please use the right gateway, or set the PC to Obtain an IP address automatically.
2. Please confirm the validity of DNS server appointed to the PC with ADSL operator. Otherwise please use the right DNS, or set the PC to Obtain an IP address automatically.
3. Please make sure user have set the NAT rules and convert private IP address to legal IP address. IP address range of the PC that user specify should meet the setting range in NAT rules.
4. Central Office equipment may have problem.

Q: PC cannot browse Internet web page?

A: Please make sure DNS server appointed to the PC is correct. User can use ping application program to test whether the PC can connect to the DNS server of the ADSL operator.

Q: Initialization of the PVC connection failed?

A: Be sure that cable is connected properly from the DSL port to the wall jack. The DSL LED on the front panel of the ADSL router should be on. Check that user's VPI, VCI, type of encapsulation and type of multiplexing setting are the same as what user collected from user's service provider, Re-configure ADSL router and reboot it. If user still can not work it out, user may need to verify these variables with the service provider.

***If the cause is not above given, please contact user's local service provider!***

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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antenna.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.