

MSW41p4 ADSL2+ UserManual



1. Overview

1.1 About MSW41p4

MSW41p4 is a high quality multifunction internet access device offering ADSL, WiFi, USB device and LAN switch. The advanced QoS ensures high quality in the bandwidth-consuming services like IPTV, IP Camera and so on. It simply enables the user to build their wireless network upon LAN network and play a role in the overall management and coordination to provide users with convenience.

1.2 Advanced features and benefits

1. Support IEEE 802.11b/g WiFi, simply enables user to build a wireless network upon LAN network, and access internet through high speed ADSL router.
2. Support ADSL2+ (maximum downstream 24Mbps and upstream 1Mbps)
3. Support Advanced QoS (Quality of Service) feature. It ensures high quality with smooth connection for any type of data. Particularly latency-sensitive and bandwidth-consuming applications such as IPTV etc.
4. Support TR-069 remote management: configuration, software upgrade, troubleshooting etc.

1.3 Features and Technical Specifications

ADSL

- ANSI T1.413 issue 2 compliant
- ITU-T G.992.1(G.DMT) compliant: Up to 8Mbps downstream and 896Kbps upstream
- ITU-T G.992(G.lite) compliant: supports splitter-less implementation.
- ITU G.992.3/4(ADSL2) compliant: enhanced performance on long lines
- ITU G.992.5(ADSL2+) compliant:(up to 24Mbps downstream and 1Mbps upstream)
- PVCs: 16
- PVC supported model: PPPoE/PPPoA/DHCP/Static/Bridge

IP

- NAT/NAPT
- Firewall, support SPI(stateful packet inspection)
- DHCP server

- Port forwarding(support DMZ)
- IP filtering, bridge filtering, Web filtering
- Static routing
- Dynamic routing(RIP and RIP2)
- SNTP
- VPN, support PPTP and IPSec VPN
- Multicast: IGMP Proxy/IGMP Snooping
- ALG
- UPnP

Ethernet

- IEEE 802.3
- 4 port Ethernet: 10/100M Ethernet Auto MDI-X

WiFi

- IEEE 802.11b/g compliance
- Security: WEP 64/124/256 bits、WPA/WPA2
- WMM QoS
- WDS wireless AP
- Multiple SSID configuration
- RF power : 20dBm
- Antenna type : Outside Omni-directional Antenna
- RF on/off
- ACS(Automatic channel selection)
- MAC address white-black filter

Operation and Management (OAM)

- Support Web based management
- Support SNMP v1/v2/v3
- UPnP
- Telnet/SSH
- Software upgrade through HTTP/TFTP/FTP
- TR069 (CPE management through WAN interface)

QoS

- Support input rate limit
- IP QoS: base on source IP address, source and destination port, protocol and DSCP
- ATM QoS: support CBR, UBR, nrt-VBR, rt-VBR

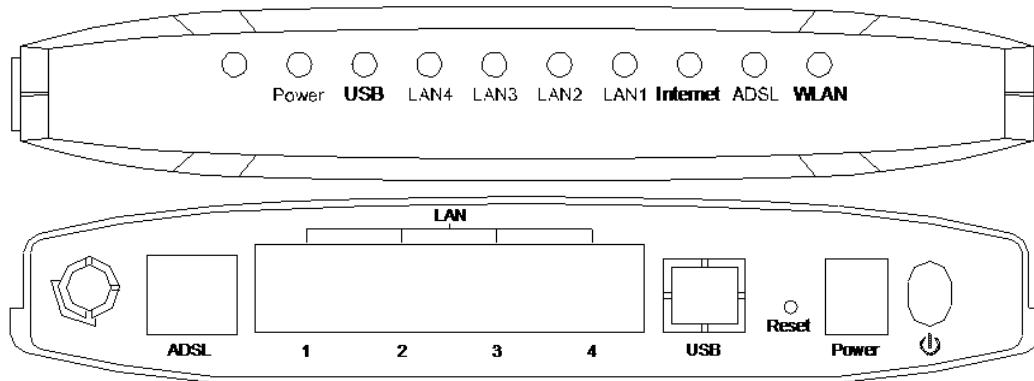
USB

- Support one USB device

2. Specification

2.1 Interface introduction

2.1.1 Interface & Indicator Light Introduction



| Item | Label | Description |
|---|---------------------------|--|
| Indicator Light | Power | ON: MODEM power on |
| | | OFF: MODEM power off |
| | USB | ON: MODEM linked to PC via USB interface |
| | | Flash: MODEM sending/receiving data via USB interface |
| | | OFF: No connection |
| | LAN1- LAN4 | ON: Ethernet is connected |
| | | BLINK: Ethernet Traffic flows |
| | | OFF: Ethernet is disconnected |
| | Internet | ON: in Router mode and ADSL connected, can transmit IP packets |
| | | OFF: in Bridge mode or ADSL disconnected |
| | | Flash: Data transmitting via LAN interface |
| | ADSL | BLINK Slowly: MODEM idle |
| BLINK Quickly: MODEM training, but not synchronized | | |
| ON: MODEM synchronized to the DSLAM | | |
| WLAN | OFF: WLAN is disable | |
| | ON: WLAN is enable | |
| | BLINK: WLAN Traffic flows | |
| Interface Introduction | Antenna | Sending & receiving wireless signal |
| | ADSL | Connect to the ADSL line or the MODEM port of Splitter |

| | | |
|--|------------|--|
| | LAN1- LAN4 | LAN interface for connecting to computer |
| | USB | Connect to PC USB port |
| | Reset | Restore to factory default settings |
| | Power | For 12V DC power adaptor |
| | ⏻ | Power switch |

Notice: the LAN port support 10M/100M, AUTO MDI-X.

2.1.2 Interface of splitter

| Label | Introduction |
|-------|------------------------------------|
| LINE | Connect to the ADSL line |
| MODEM | Connect to 'DSL' port of the MODEM |
| PHONE | Connect to the phone |

2.1.3 Package checking

Router is shipped with the following items:

| Item | Quantity | Remark |
|-------------------|----------|--------|
| Power Adapter | 1 | |
| Phone line | 2 | |
| RJ45 Network Line | 1 | |
| MODEM | 1 | |
| Splitter | 1 | |
| | | |
| | | |

2.2 Hardware Connection

Introduction:

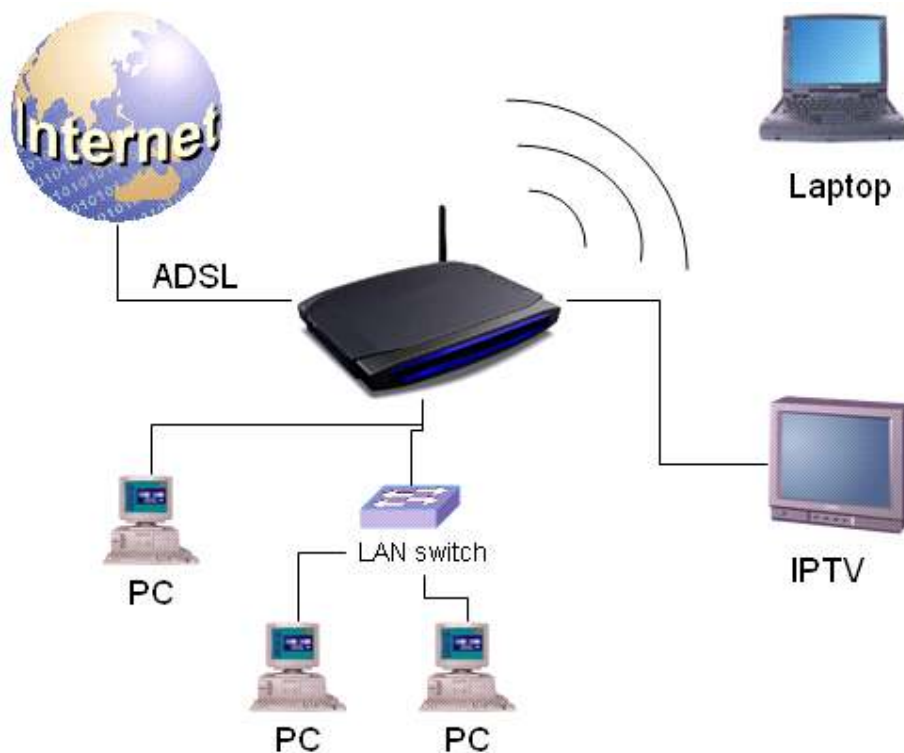
- 1、 Use a telephone cord to connect the LINE port of the splitter with the RJ-11 port (the phone jack) on the wall.
- 2、 Use another telephone cord to connect the ADSL port of the splitter with the LINE port of the ADSL Modem.
- 3、 Use another telephone cord to connect the telephone set with the PHONE port of the splitter.
- 4、 Connect Ethernet port of the ADSL MODEM with 10/100BASE-T port of the computer

using the network cable that comes with the modem.

5、 Plug in the power cord, and turn on the power.

If you do not want Internet services and telephone voice services simultaneously, please just connect the LINE port of the ADSL Modem with the RJ-11 port (the phone jack) on the wall using a telephone cord. In this case, the splitter is not necessary.

2.3 Layout



Notice:

- ✚ PC connects to ADSL LAN port for internet access;
- ✚ Laptop (integrate WiFi) can access internet via WiFi wireless connection;
- ✚ STB (set top box) connect to LAN port for IPTV application.
- ✚ Wireless ADSL router provides 4 Ethernet cable ports LAN0~LAN3 in support of 10M/100M, AUTO MDI-X, user can connect 4 PCs via 4 cable lines, no extra HUB or SWITCH is needed.

Warning: If the phone line is previously in-bridged with other phones, please make sure every phone set is connected behind the splitter or installed a splitter before every phone set, otherwise interruptions will be caused on line and ADSL connection may be unstable.

3. Configuration Guide

3.1 Default Configuration

ADSL MODEM has pre-configured with the VCI/VPI which is in common use, mode is bridge encapsulation. For bridge mode, no need to configure any more parameter.

3.2 Computer Configuration

The default IP address for ADSL MODEM is: **192.168.2.1**; The Subnet Mask is: **255.255.255.0**. Users can configure ADSL MODEM through an Internet browser. ADSL MODEM can be used as gateway and DNS server; users need to set the computer's TCP/IP protocol as follow:

- 1、 Set the computer IP address at same IP range of ADSL MODEM, such as set the IP address of the network card to one of the "192.168.2.2"
- 2、 Set the computer's gateway the same IP address as the ADSL Modem's.
- 3、 Set computer's DNS server the same as ADSL Modem's IP address or that of an effective DNS server.

3.2.1 Log In

Power on to start the device, making sure your computer can PING via LAN port of ADSL (the factory default IP is 192.168.2.1), then run IE. Inputting <http://192.168.2.1> in the address column, press ENTER, and authentication interface will pop up as below:



The default username and password is [admin](#) for web log-on. Press ENTER or click on 'OK'

to enter into ADSL main page to perform configuration after entering the accurate user name and password in the dialog box.

Warning: Please be sure IP of the computer network card is in the same IP range as ADSL LAN port before trying to log on (ex: 192.168.2.2 and 192.168.2.1 are in the same IP range). Please follow the steps below to enter: IE---Tool---Internet Option---Connection---LAN Setup---Proxy server, disable the function 'Proxy for LAN', that disable the proxy server.

If log on successfully, the main page will be displayed as follows:

The screenshot displays a web interface with a left-hand navigation menu and a main content area. The navigation menu includes: Device Info, Advanced Setup, Wireless, Diagnostics, and Management. The 'Device Info' section is active, showing a table of device details. Below the table, a note states: 'This information reflects the current status of your DSL connection.' A second table below shows connection parameters.

| Device Info | |
|---------------------------|--------------------------------|
| Board ID: | 96338W |
| Software Version: | 3.12L.01_1.1.A2pBQ23k.d20k_rc2 |
| Bootloader (CFE) Version: | 1.0.37-12.1 |
| Wireless Driver Version: | 4.170.16.0.cpe2.1sd |

This information reflects the current status of your DSL connection.

| | |
|--------------------------------|-------------|
| Line Rate - Upstream (Kbps): | |
| Line Rate - Downstream (Kbps): | |
| LAN IPv4 Address: | 192.168.2.1 |
| Default Gateway: | |
| Primary DNS Server: | 192.168.2.1 |
| Secondary DNS Server: | 192.168.2.1 |

3.2.2 Introduction for the Structure of WEB Interface

Web interface consists of five menu options. Each option is for configuring certain part of the whole system. User can perform the configuration of each part individually in accordance with their own needs.

- 1) Device Info
Here include "Summary", "WAN" information, "Statistic" information, "Route" information, "ARP" information etc.
- 2) Advanced setup
Here include "WAN setup", "LAN setup", "Security", "Route", "DSL", "Print Server", "IPSec" etc.
- 3) Wireless
Here include "Basic", "Security", "MAC Filter", "Wireless Bridge", "Advanced", "Station Info" etc.
- 4) Diagnostics

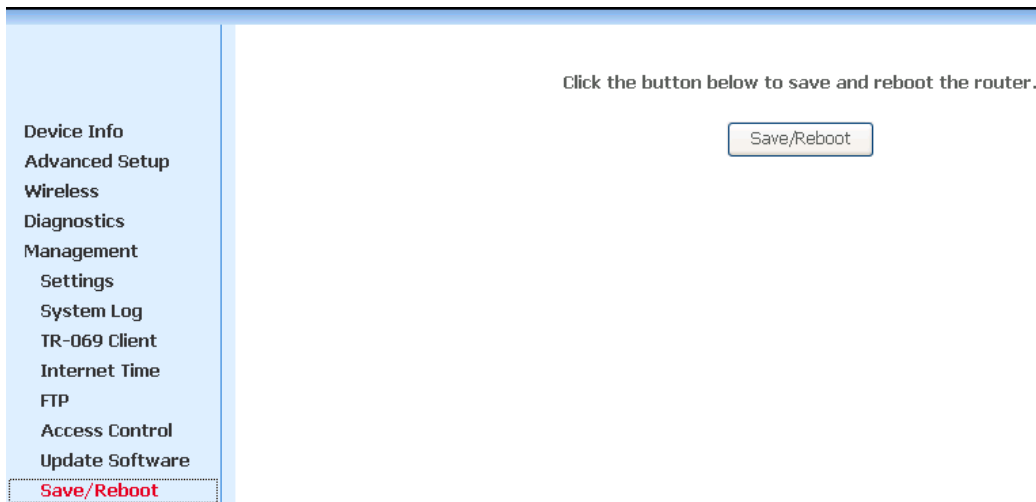
For check connection and test result

5) Management

Here include “Settings”, “System Log”, “TR-069 Client”, “Internet Time”, “FTP”, “Access Control”, “Update Software” “Save/Reboot” etc.

3.2.3 Save / Reboot

If we change some setting and want to keep it after reboot. You can click “**Save/Reboot**” after change the setting in each page. You also can change all setting and go to “**Management**”→ “**Save/Reboot**” to save all.



3.2.4 WAN Configuration

If the configuration is bridge encapsulation, there is no need to configure any more parameters. Only need to use the third party dial-up software to connect the Internet.

This router completely supports: PPPoA、PPPoE、MER、IPoA、Bridging. For detail configuration information, please check the following configuration guide.

3.2.4.1 Configuration Guide

Choose “Advanced Setup”→ “WAN”, enter Wide Area Network (WAN) Setup interface.

Device Info
Advanced Setup
WAN
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DNS
DSL
Print Server
Interface Group
IPSec
Certificate
Samba Config

Wide Area Network (WAN) Setup

Choose Add, Edit, or Remove to configure WAN interfaces.
Choose Save/Reboot to apply the changes and reboot the system.

| Port/Vpi/Vci | VLAN Mux | Con. ID | Category | Service | Interface | Protocol | Igmp | QoS | State | Remove | Edit |
|--------------|----------|---------|----------|----------------|--------------|----------|----------|----------|---------|--------------------------|------|
| 0/8/48 | Off | 1 | UBR | pppoe_0_8_48_1 | ppp_0_8_48_1 | PPPoE | Disabled | Disabled | Enabled | <input type="checkbox"/> | Edit |
| 1/8/48 | Off | 1 | UBR | br_1_8_48 | nas_1_8_48 | Bridge | N/A | Disabled | Enabled | <input type="checkbox"/> | Edit |
| 0/8/35 | Off | 1 | UBR | br_0_8_35 | nas_0_8_35 | Bridge | N/A | Disabled | Enabled | <input type="checkbox"/> | Edit |
| 0/8/36 | Off | 1 | UBR | br_0_8_36 | nas_0_8_36 | Bridge | N/A | Disabled | Enabled | <input type="checkbox"/> | Edit |
| 0/8/37 | Off | 1 | UBR | br_0_8_37 | nas_0_8_37 | Bridge | N/A | Disabled | Enabled | <input type="checkbox"/> | Edit |
| 0/8/38 | Off | 1 | UBR | br_0_8_38 | nas_0_8_38 | Bridge | N/A | Disabled | Enabled | <input type="checkbox"/> | Edit |

Add Remove Save/Reboot

1) Click “Add”, enter the configure guide.

Notice: Default we can have eight connections. The Max number of connections is 16.

Device Info
Advanced Setup
WAN
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DNS
DSL
Print Server
Interface Group
IPSec
Certificate
Samba Config
Wireless
Diagnostics

ATM PVC Configuration

This screen allows you to configure an ATM PVC identifier (PORT and VPI and VCI) and select a service category. Otherwise choose an existing interface by selecting the checkbox to enable it.

PORT: [0-3]

VPI: [0-255]

VCI: [32-65535]

VLAN Mux - Enable Multiple Protocols Over a Single PVC

Service Category: **UBR Without PCR** ▼

Enable Quality Of Service

Enabling packet level QoS for a PVC improves performance for selected classes of applications. QoS cannot be set for CBR and Realtime VBR. QoS consumes system resources; therefore the number of PVCs will be reduced. Use **Advanced Setup/Quality of Service** to assign priorities for the applications.

Enable Quality Of Service

2) The value for VPI/VCI is assigned by your ISP. After inputting the PVC value, press “Next” into “Connection type”.

Device Info
Advanced Setup
WAN
LAN
NAT
Security
Parental Control
Quality of Service
Routing
DNS
DSL
Print Server
Interface Group
IPSec
Certificate
Samba Config

Connection Type

Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use. Note that 802.1q VLAN tagging is only available for PPPoE, MER and Bridging.

- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC Encapsulation Routing (MER)
- IP over ATM (IPoA)
- Bridging

Encapsulation Mode

LLC/SNAP-BRIDGING ▼

Back Next

The Modem supports five ADSL protocol modes. Choose the protocol which is appointed by ISP and PVC encapsulation, click “Next” enter to the protocol configure. Below, we introduce the configuration of the five protocol modes.

- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)

- MAC Encapsulated Routing (MER)
- IP over ATM (IPoA)
- Bridging

3) Some connection lines need to confirm the LLC or VC, if you can't confirm, please don't modify the default value or ask your ISP.

3.2.4.2 RFC1483 Bridge Configuration

Select the Bridging mode. Then Press to specify the Service Name, and select the "Enable Bridge Service".

Unselect the check box below to disable this WAN service

Enable Bridge Service:

Service Name:

Back Next

Press "Next" to enter into "WAN configuration", click "save" to save configuration, if you need to modify the parameter, click "back".

WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

| | |
|---------------------|----------------|
| PORT / VPI / VCI: | 0 / 0 / 35 |
| Connection Type: | Bridge |
| Service Name: | br_0_0_35 |
| Service Category: | UBR |
| IP Address: | Not Applicable |
| Service State: | Enabled |
| NAT: | Disabled |
| Firewall: | Disabled |
| IGMP Multicast: | Not Applicable |
| Quality Of Service: | Disabled |

Click "Save" to save these settings. Click "Back" to make any modifications.
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

Back Save

Notice: When you use bridge mode, please close "DHCP SERVER"

Local Area Network (LAN) Setup

Configure the DSL Router IP Address and Subnet Mask for LAN interface. Save button only saves the LAN configuration data. Save/Reboot button : data and reboots the router to make the new configuration effective.

IP Address:

Subnet Mask:

Enable IGMP Snooping
 Standard Mode
 Blocking Mode

Disable DHCP Server
 Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Static IP Lease List: Please click on Save/Reboot button to make the new configuration effective. (A maximum 32 entries can be configured)

| MAC Address | IP Address | Remove |
|----------------------|----------------------|---------------------------------------|
| <input type="text"/> | <input type="text"/> | <input type="button" value="Remove"/> |

Enable DHCP Server Relay
 DHCP Server IP Address:

3.2.4.3 PPPoE Configuration

PPPoE is also known as RFC 2516. It is a method of encapsulating PPP packets over Ethernet.

PPPoA is also known as RFC2364 and named as Peer to Peer Protocol over ATM. As PPPoE, it also has all the features of PPP. Although it's based on ATM protocol, the setting of all the other parameters is similar with PPPoE. So we only introduce PPPoE in detail here.

Select PPP over Ethernet (PPPoE), press "Next" entering the configuring interface.

PPP Username and Password

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method:

Enable Fullcone NAT
 Dial on demand (with idle timeout timer)
 PPP IP extension
 Use Static IP Address

- PPP Account: Your account from ISP to access Internet.
- Password: Input the password assigned by your ISP.
- PPPoE server name: Server name of network ISP. No need to set.
- Authentication Mode: Authentication mode of network ISP. Default is AUTO.

Press "Next" when configuration is finished. Notice that PPPoE mode does not work until the modem is reset.

3.2.4.4 Static Address

Select Mac Encapsulation Routing (MER), press “Next” and the configuration can be queried from your ISP.

Click “Save/Apply” when configuration is finished.

WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.
Notice: DHCP can be enabled for PVC in MER mode or IP over Ethernet as WAN interface if "Obtain an IP address automatically" is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN connection.
If you configure static default gateway over this PVC in MER mode, you must enter the IP address of the remote gateway in the "Use IP address". The "Use WAN interface" is optional.

Obtain an IP address automatically
 Use the following IP address:

WAN IPv4 Address:
WAN Subnet Mask:

Obtain default gateway automatically
 Use the following default gateway:

Use IPv4 Address:
 Use WAN Interface:

Obtain DNS server addresses automatically
 Use the following DNS server addresses:

Primary DNS server:

3.2.5 Wireless Configuration

Press “Wireless” on the top of web pages to enter wireless section. You can select to configure wireless setup, security and management.

Wireless -- Basic

This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements.
Click "Apply" to configure the basic wireless options.

Enable Wireless
 Hide Access Point
 Clients Isolation
 Disable WMM Advertise

SSID:
BSSID:
Country:
Max Clients:

3.2.5.1 Wireless Setup

Click “Basic” on the left menu to setup basic wireless parameters. In default, check “Enable Wireless” box to launch wireless AP.

- **SSID** (Service Set Identifier): The mobile users cannot access WLAN until setting their SSID as the same value of the wireless ADSL. The SSID value of the ADSL is “MSW41p4”
- **Hidden Access Point**: If checked, wireless station will no see SSID of the ADSL.

Click “Save/Apply” when configuration is finished.

3.2.5.2 Wireless Security

Press “Security” on the left menu to construct wireless security. You can select to configure WEP encryption, Shared, 802.1x, WPA, and WPA2 authentication.

- WEP Encryption DEFAULT password “apmsw41p4”

Select “Enabled” of the WEP encryption list. You can enter WEP encryption page.

Encryption Strength: Key length: 128bits or 64bits.

Network Key 1-4: Up to four keys that are in form of hex digitals could be set. Mobile users can’t access the AP if they haven’t set the same key as AP. For 64bits and 128bits keys, you should input 10 and 26 hexadecimal digitals or 5 and 13 ASCII characters respectively. Every two digitals should be comparted with others by a space character. For example: “7890ABCDEF” (hexadecimal digitals) or “QWERT” (ASCII characters) for a key length of 64bits.

The screenshot shows the 'Manual Setup AP' configuration page. On the left is a navigation menu with options: Device Info, Advanced Setup, Wireless, Basic, Security (highlighted), MAC Filter, Wireless Bridge, Advanced, Station Info, Diagnostics, and Management. The main content area is titled 'Manual Setup AP' and contains the following fields:

- Select SSID: teeeee
- Network Authentication: Shared
- WEP Encryption: Enabled
- Encryption Strength: 128-bit
- Current Network Key: 2
- Network Key 1: [empty text box]
- Network Key 2: [empty text box]
- Network Key 3: [empty text box]
- Network Key 4: [empty text box]

Below the Network Key fields, there is a note: "Enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys" and "Enter 5 ASCII characters or 10 hexadecimal digits for 64-bit encryption keys". At the bottom of the form is a "Save/Apply" button.

- 802.1x Authentication

Select “802.1x” to enter 802.1x authentication page.

The 802.1x authentication needs a Radius server in LAN. In this page, you can input Radius server IP address, port number and secret key.

Device Info
 Advanced Setup
 Wireless
 Basic
 Security
 MAC Filter
 Wireless Bridge
 Advanced
 Station Info

Manual Setup AP

You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click "Save/Apply" when done.

Select SSID:

Network Authentication:

RADIUS Server IP Address:

RADIUS Port:

RADIUS Key:

3.2.5.3 Wireless Mac Filter

In fact, the Access List function is just like MAC address filtering and selected to permit or forbid access of wireless station with specified MAC address.

Method: select "Allow" or "Deny" mode, and click "Add" button, and input MAC address which you want to allow or deny.

Device Info
 Advanced Setup
 Wireless
 Basic
 Security
 MAC Filter
 Wireless Bridge
 Advanced
 Station Info
 Diagnostics
 Management

Wireless -- MAC Filter

Select SSID:

MAC Restrict Mode: Disabled Allow Deny

| MAC Address | Remove |
|-------------|--------|
| | |

Notice: You only can select one either allow mode or deny mode not both.

4. Other Configuration

4.1 LAN Configuration

Configuration of Modem's IP address and password.

4.1.1 Configuration of Modem's IP Address

As a network device, ADSL Modem has its own IP address and MAC address. The factory sets the MODEM, at a default IP address of 192.168.2.1 and subnet mask of 255.255.255.0. The user can configure these addresses through the “LAN” on “Configuration” like this:

For example, change IP address to “192.168.2.1”. Click “LAN”, input “IP address”: 192.168.2.2, then “subnet mask”: 255.255.255.0, Press “Save” when configuration is finished.

Local Area Network (LAN) Setup

Configure the DSL Router IP Address and Subnet Mask for LAN interface. Save button only data and reboots the router to make the new configuration effective.

IP Address:

Subnet Mask:

Enable IGMP Snooping

Standard Mode

Blocking Mode

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Static IP Lease List: Please click on Save/Reboot button to make the new configuration

| MAC Address | IP Address | Remove |
|-------------|------------|--------|
| | | |

Enable DHCP Server Relay

DHCP Server IP Address:

Notice: If you change IP address, it will take effect after you reboot the modem. You must use the new IP address to login.

4.1.2 DHCP Configuration

- Click “LAN ”
- Click “DHCP server”;
- Define the “Start IP address” and the “End IP address” of DHCP server (for example, from 192.168.2.2 to 192.168.2.254).
- Input the value of lease (Measured by the second, 0 indicates permanently valid).

Enable DHCP server, computer will set the IP Address of network card with one of the address 192.168.2.1 ~ 192.168.2.254 (Excluding 192.168.2.1).

Notice: When you use the DHCP Server, please pay attention to having multi-DHCP Server in one LAN.

4.2 Password Configuration

When you configure ADSL MODEM through an Internet browser, the system requires user

name and password to validate access permission. The factory sets the modem at a default username of “**admin**” and the password of “**admin**”. Choose “Management” -> “Access Control” -> “Passwords”, you can choose the username and change the password.

Access Control -- Passwords

Access to your DSL router is controlled through three user accounts: admin, support, and user.

The user name "admin" has unrestricted access to change and view configuration of your DSL Router.

The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.

The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.

Username:

Old Password:

New Password:

Confirm Password:

Attention: please remember the password after change, otherwise you need to reset the device to change configuration after saving setting.

5. Troubleshooting

5.1 Unable to Access Internet

5.1.1 Check the Line and the Device

- 1、 Check the indicator of power supply is on, if not, Make sure the connection of power supply is correct; Make sure the output of power supply is correct; Make sure the switch of power supply is turned on;
- 2、 Check the indicator of PC is on, if not, Make sure the connection of cable and network adapter; Make sure that the correct cable is used;
- 3、 Check the LINK LED to see if it is twinkling. If no fast twinkling is observed within 3 minutes, please check whether phone line has been correctly placed; whether ADSL separator is correctly used. If multiple extensions have been installed, make sure that the separator is installed prior to the junction box of phone line. If the above items are confirmed and still no fast twinkling of WAN LED is observed, call the ISP to query whether ADSL service has been provided on your line;
- 4、 Check the LINK LED to see whether it is unable to change status from fast twinkling to always light, or whether it changes status to fast twinkling after sometime of always light.

If these phenomena occur constantly, please contact your ISP with a demand to check lines and signal quality;

If there is no problem in the above items, the line and the device shall be working. Problems may come from your computer configuration or device configuration.

5.1.2 CHECK YOUR CONFIGURATION

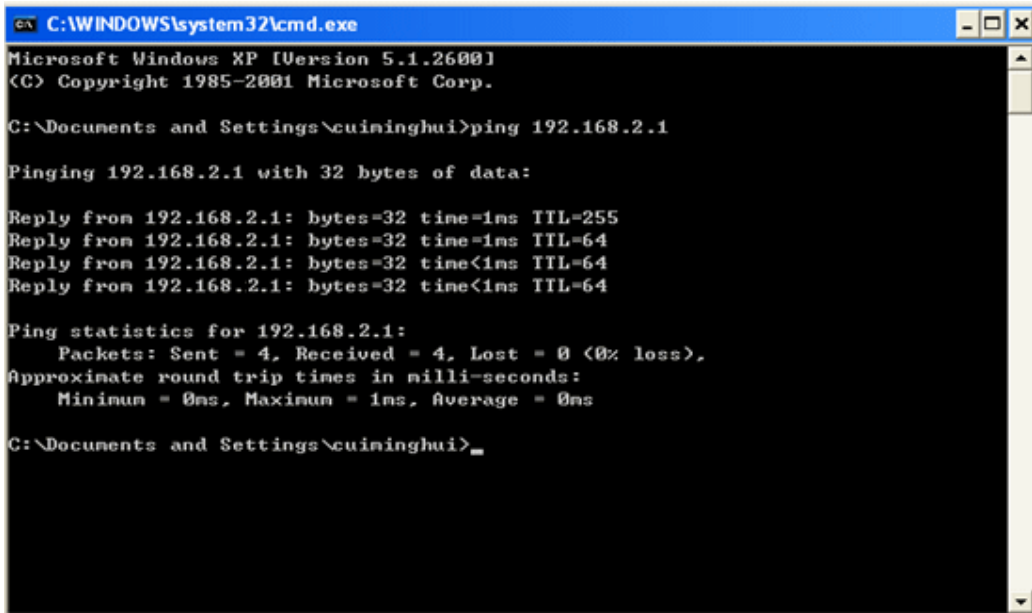
We explain here the configuration of PPPOE using Windows XP operation system as an example. For other operation systems the process is similar.

- 1、 Enter the device manager to check if Ethernet adapter is correctly installed. If any problem exists, please re-installed it;
- 2、 Check the configuration of Ethernet adapter in PC. Try to manually set IP address that is in band 192.168.2.X without conflict. See 3.2;
- 3、 Try to run command “ping 192.168.2.1” on command line mode. If the response returns “time out”, please check Ethernet connection and IP settings;
- 4、 If this modem is reachable, try to run ping with a known outer IP, e.g. the DNS server IP of www.yahoo.com: “ping 209.131.36.158”.
 - If ping is reachable, there shall be no problems in the modem. Please see step 5;
 - If ping is not reachable, see step 6 and check if the configuration is correct.
- 5、 Please try to ping a certain outer URL, e.g. “ping www.google.com”.
 - If ping is reachable, there shall be no problems in the network settings. Please check the settings of the PC terminal, e.g. whether the security level is too high, or whether anti-virus firewall is installed;
 - If ping is not reachable, check the DNS setting of Ethernet adapter. See 3.2.

Note 1: The precondition is that LAN settings in the modem has not been modified.

Note 2: We usually start command line mode in Windows XP as follows: click on the “RUN” item of Windows Start Menu, input characters “cmd” in the input box popped up with an “Enter”. The window subsequently popped up is the command line window.

Note 3: The returned values of ping command in the following format show the standard of “reachable”



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\cuiminghui>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=1ms TTL=255
Reply from 192.168.2.1: bytes=32 time=1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Documents and Settings\cuiminghui>
```

- 6, If ping of the modem is reachable but ping of the outer fixed IP is unreachable, attention should be concentrated upon device settings. Please enter the configuring interface following the instructions in this manual.
- (1) Check first the number of connections. If more than one connection exists, for troubleshooting, delete unused connections and remain the one connection you are using.
 - (2) Check the connection to see whether correct “type” is selected. It’s normal to choose login type of PPPoE. When you use PPPoE to login, the following information should be provided: VPI and VCI, which can be queried from your ISP, user name and password.
 - (3) Then make sure that “using NAT” and “default gateway” have been selected with a tick. Check whether “connect on demand” has been selected with a tick. If it is selected, the connection is activated only when traffic to outer networks arrives. If not selected, check “keep connection”, which should be set to 0 if you demand to keep connection

Make sure that the above parameters are saved after configuration. Internet is now available since the configuration is properly done.

FCC STATEMENT

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications 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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body