

## TP-LINK®

## **User Guide**

# TD-8841 External ADSL Router



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#### **FCC STATEMENT**



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.

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### **CE Mark Warning**



This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

#### SAFETY NOTICES

#### Caution:

- 1) Do not use this product near water, for example, in a wet basement or near a swimming pool.
- 2) Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

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## **Package Contents**

The following items should be found in your package:

- One TD-8841 External ADSL2+ Router
- > One AC power Adapter for TD-8841 External ADSL2+ Router
- One Resource CD for TD-8841 External ADSL2+ Router, including:
  - This Guide
  - Quick installation Guide Program
  - Other Helpful Information
  - USB driver
- > Quick installation Guide
- > One RJ45 cable
- > Two RJ11 cables
- > One ADSL splitter
- > One USB cable

#### 

Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your distributor.

## **Chapter 1. Product Overview**

With the excellent circuit design and high quality production, we guarantee the ADSL2+ Router's high performance, great stability and easy to use.

In addition to the basic DMT physical layer functions, the ADSL2+ PHY supports dual latency ADSL2+ framing (fast and interleaved) and the I.432 ATM Physical Layer.

The TD-8841 is a complete plug-and-play solution. With standard Ethernet interface, it can be directly connected to any 10M/100M Ethernet devices, support Auto-MDIX.

The TD-8841 not only uses html (web mode through Ethernet port) to configure the Router but also uses external utility software. You can download it from our website (<a href="http://www.tp-link.com">http://www.tp-link.com</a>).

#### 1.1 Product Main Specification

- > High speed and asymmetrical data transmit mode, provides safe and exclusive bandwidth
- Supports All ADSL2+ industrial standards
- Compatible with all mainstream DSLAM (CO)
- > Firmware upgradeable
- > Provides integrated access of internet and route function which face to SOHO user
- Advanced DMT modulation and demodulation
- > Real-time Configuration and device monitoring
- Quick response semi-conductive surge protection circuit, provides reliable ESD and surge-protect function

### 1.2 Supporting Protocol

- G.992.1 (G.dmt) Annex A/B/C
- > G.992.2 (G.lite) Annex A/B/C
- > ANSI T1.413
- ➤ G.992.3 (ADSL2) Annex A/B/C/M and Annex L (RE-DSL) compliant
- G.992.5 (ADSL2+) Annex A/B/C and Annex L (RE-DSL) compliant
- ADSL dual latency (fast path and interleaved path)
- > I.432 ATM physical layer compliant
- Supports RFC2364 (PPPoA)
- > Supports RFC2516 (PPPoE)

- Supports RFC1483 (EoA)(Bridged \*and Router)
- Supports RFC1577 (IPoA)
- Note: "\*" Needs the third-party software.

#### 1.3 Transmit Data-rate

Max download data-rate: 24Mbps

Max upload data-rate: 3.5Mbps

Max line length: 6Km

#### 1.4 ATM Property

- AAL0, AAL5, OAM, RM, and raw cell types supported
- Direct hardware support for 4 Receive VCs, with additional RX VCs and TX VCs supported in software
- Full 24-bit Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI)

#### 1.5 System Support

- Support PVC
- Support NAT、DHCP and so on
- Support IEEE 802.3 IEEE 802.3u
- Support 10Base-T/100BASE-TX full-duplex or half duplex Ethernet
- Support Auto-MDIX
- Support USB 1.1 device interface

#### 1.6 Working Environment

Operating temperature: 0 ℃~40 ℃

Storage temperature: -40 ℃~70 ℃

Humidity: 10%~90% (non-condensing)

## **Chapter 2. Hardware Installation Guide**

The TD-8841 maintains six separate interfaces, including four Ethernet interfaces, one USB interface and one ADSL interface. The Router should not be located where it will be exposed to moisture or excessive heat. Place the Router in a location where it can be safely connected to the various devices as well as to a power source.

#### 2.1 System requirement

Confirm your computer has been installed with networking interface card (NIC) before connecting ADSL2+ Router to your computer, with the operating system supporting the TCP/IP protocol.

#### 2.2 LED explanation

The front panel of ADSL2+ Router includes one power indicator (RED) and eight function indicators (GREEN), as explained in following chart:

Name	Status	Indication
PWR	On	Power OK
PVVK	Off	Power fail
	Slow flash	Self-detecting when power on
ADSI	Quick flash	The LINE port is connecting to ISP's network
ADSL	On	The LINE port has connected to ISP's network
	Off	The LINE port has no connection
ALARM	On	There is mistake when ADSL transmitting or receiving data
ALAKIVI	Off	ADSL normal
	On	There is data transmitting or receiving on WAN port
ACT	Off	No data is being transmitted or received on WAN port
	On	Connection to telecom network is OK
USB	Off	Connection on USB port is abnormal
	Flash	Data is being transmitted or received
	On	LAN port is normal
LAN(1~4)	Off	Connection on LAN port is abnormal
	Flash	Data is being transmitted or received on LAN port

## 2.3 Rear-panel

ON/OFF: Turn on/off the ADSL2+ Router's power.

- Power (9V AC/0.8A input): please do not use any unknown power adaptor; otherwise your ADSL2+ Router may be damaged.
- > **RESET (reset default)**: First press the reset button of Router, then turn on the Router's power for at least three seconds. It will resume the default manufacturer's setup.
- **LAN**: Connect with your computer's NIC.
- USB: Connect with your computer's USB interface
- > LINE (WAN): Connect to the MODEM Port of Splitter or Connect to the telephone line.

#### 2.4 Hardware installation procedures

The procedure to install the Router can be described in general terms in the following steps and shown as Figure 2-1:

**First Step**: Connecting the MODEM port of Splitter with the LINE port of the TD-8841 ADSL2+ Router by telephone line. While you need to use a telephone, please attach telephone line into the phone of Splitter.

**Second Step**: Connect category 5 cable with RJ45 jacks to ADSL2+ Router's LAN port and your computer's NIC. Or connect USB cable to ADSL2+ Router's USB port and your computer's USB interface.

**Third Step**: Plug one end of the AC Power Adapter into the Power jack on the Ethernet ADSL2+ Router and the other end to a standard electrical outlet.

Last Step: Check the line connection to see if everything is ready. Power up finally.

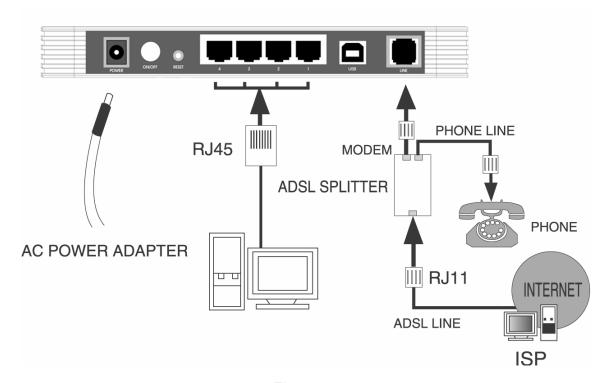


Figure 2-1

## **Chapter 3. System Configuration**

#### 3.1 Computer Configuration

The default IP address of the ADSL2+ Router is 192.168.1.1, and the default Subnet Mask is 255.255.255.0. These values can be seen from the LAN, and can be changed as your desire. As an example, we use the default values for description in this guide.

- 1. Connect the cable according to Chapter 2, turn on the power.
- 2. Connect the local PCs to the ADSL2+ Router's LAN port. There are then two means to configure the IP address for your PCs.
- Configure the IP address manually
  - 1) Set up the TCP/IP Protocol for your PC(s).
  - 2) Configure the network parameters. The IP address is 192.168.1.xxx ("xxx" is from 2 to 254), Subnet Mask is 255.255.255.0, and Gateway is 192.168.1.1 (The ADSL2+ Router's default IP address).
- Obtain an IP address automatically
  - 1) Set up the TCP/IP Protocol in "**Obtain an IP address automatically**" mode on your PC(s).
  - 2) The built-in DHCP server will assign IP addresses for the PC(s).

#### P Note:

If you need instructions as to how to do this, please refer to Appendix B: Configuring the PCs.

Remarks: you can check whether your configuration is successful through PING command. Enter Ping 192.168.1.1

If the screen looks like the following, you have been successful.

```
Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

If the screen looks like the following, the connection has failed. Please try again.

```
Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.

Request timed out.

Request timed out.

Request timed out.

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

#### 3.2 Login

Startup Internet Explorer, and enter 192.168.1.1; then enter default user name (admin), password (admin), When ADSL2+ connection is OK, you will see the Figure 3-1.



Figure 3-1

You will then see the Figure 3-2. You will see some information such as link rate and so on.

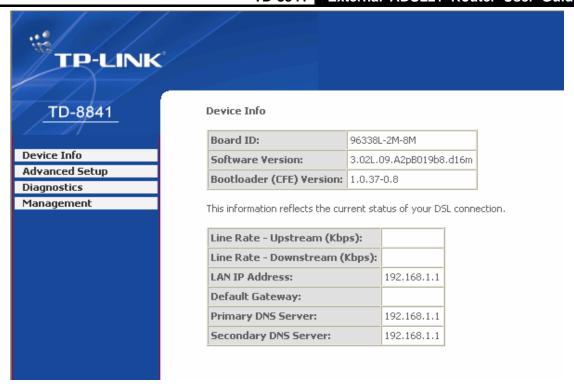


Figure 3-2

Default value of user name and password is "admin"; if you want to change them, please go to "Management" -> "Access control" -> "Passwords" changing them. (Figure 3-3)

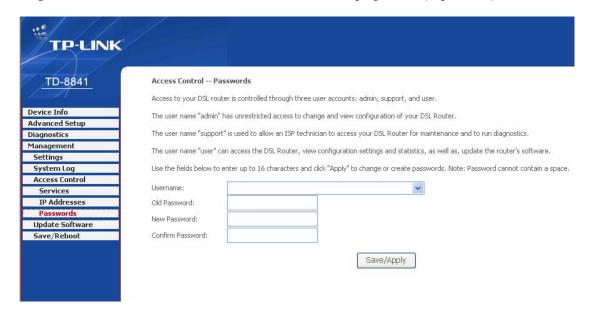


Figure 3-3

#### 3.3 Web Setup

Choose "Advanced Setup"→"WAN", you will enter the page of Wide Area Network (WAN) Setup, you will see the Figure 3-4.

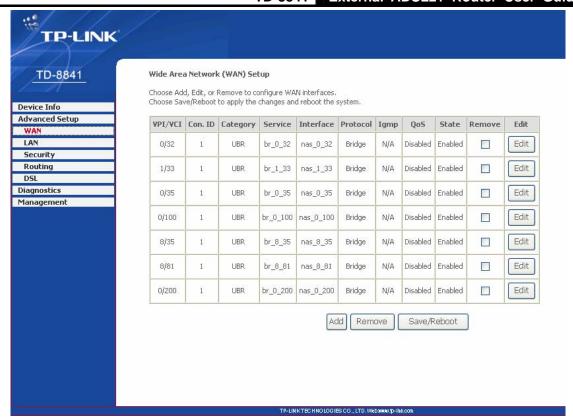


Figure 3-4

There are 7 PVC links in the **WAN** setup page, choose the fit PVC according to your needs, and then click the **edit** button, you will enter the page of ATM PVC Configuration (See Figure 3-5).

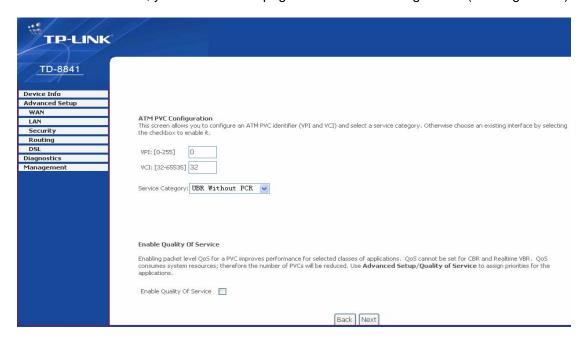


Figure 3-5

Enter **VPI/VCI** value and service category which is provided by your ISP, click **next** to enter the next step. You will see the Figure 3-6.

#### Note:

The type of network protocol selected may be different in different areas, there are five types (Figure 3-7), So you should ask your ISP to acquire the local type of network protocol and Encapsulation mode.

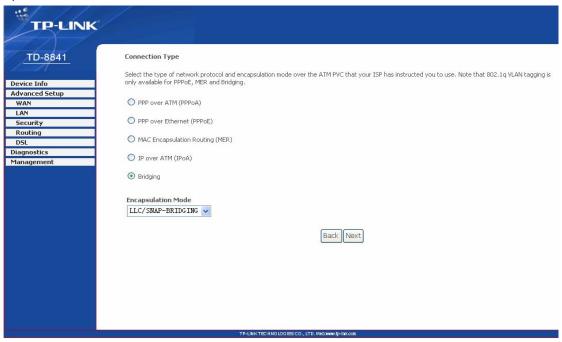


Figure 3-6

After choosing the proper protocol, enter the correct parameters supported by your ISP. Enable the configurations, then you will go to Internet.

#### > PPP over ATM (PPPoA)

If you select the protocol of PPP over ATM (PPPoA), you will see the Figure 3-7, enter the value of user name and password which is provided by your ISP, after selecting the other function (often using the default setup), click the **next** button.

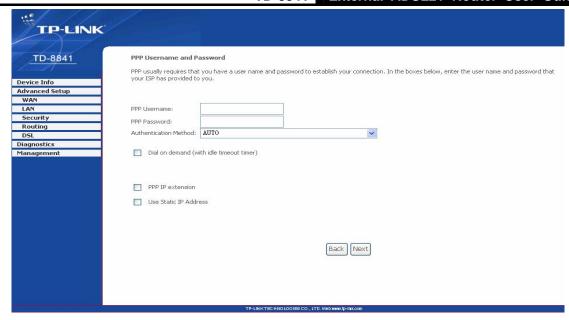


Figure 3-7

You will see the Figure 3-8. Then turn on the selected functions according to your demands. Clicking the next button to enter the next step, you will see the Figure 3-9, finally click save to complete the configuration.

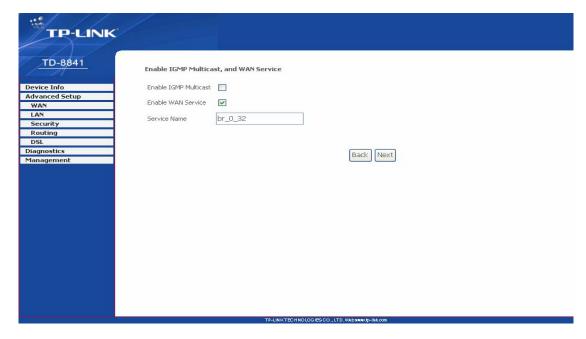


Figure 3-8

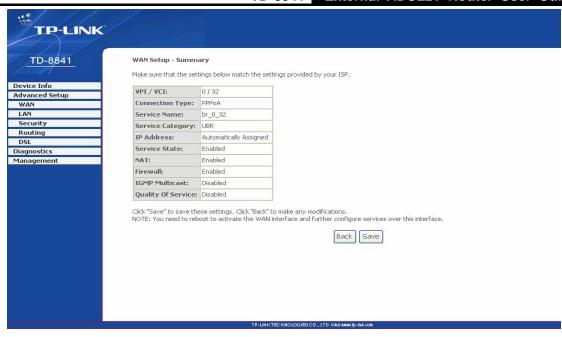


Figure 3-9

#### PPP over Ethernet (PPPoE)

If you select the protocol of PPP over Ethernet (PPPoE), you will see the Figure 3-10, enter the value of user name and password which is provided by your ISP, after selecting the other function (often using the default setup), click the next button.

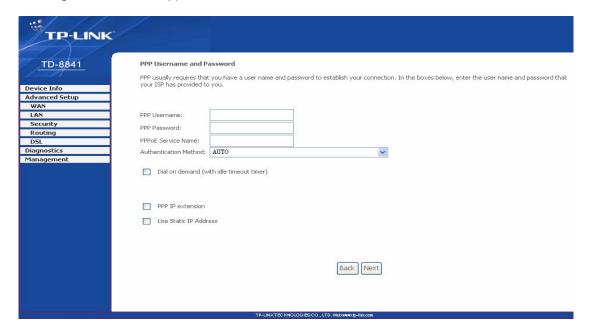


Figure 3-10

You will see the Figure 3-11. Then turn on the selected functions according to your needs. Clicking the next button to enter the next step, you will see the Figure 3-12, finally click save to complete the configuration.

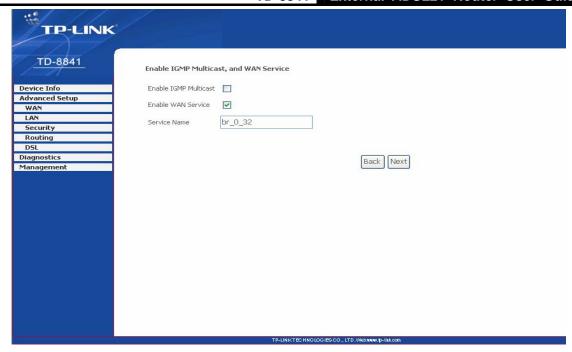


Figure 3-11

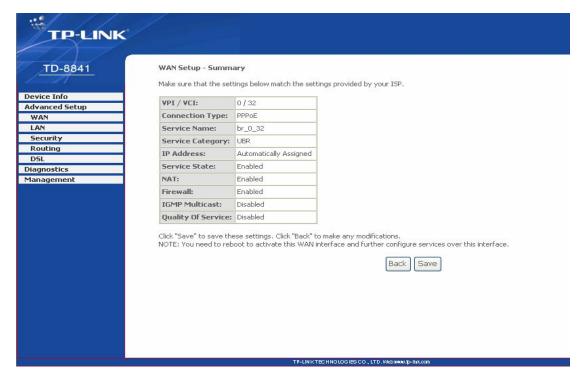


Figure 3-12

#### MAC Encapsulation Routing (MER)

If you select the protocol of MAC Encapsulation Routing (MER), you will see the page (Figure 3-13) Enter the parameter and the way which is provided by your ISP, then click the **next** button.

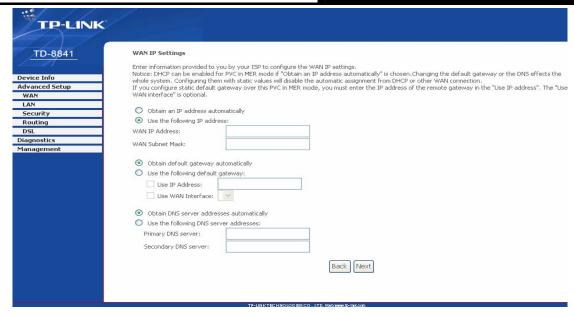


Figure 3-13

You will see the Figure 3-14. Then turn on the selected functions according to your needs. Clicking the next button to enter the next step, you will see the Figure 3-15, finally click save to complete the configuration.

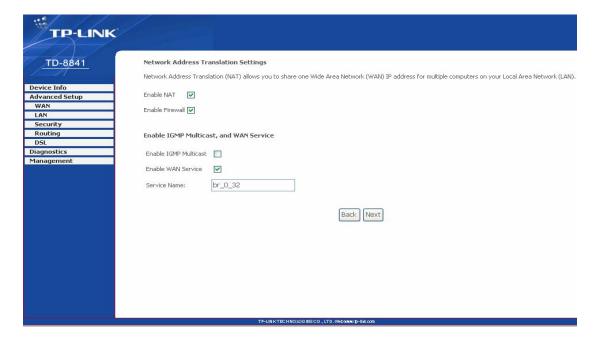


Figure 3-14

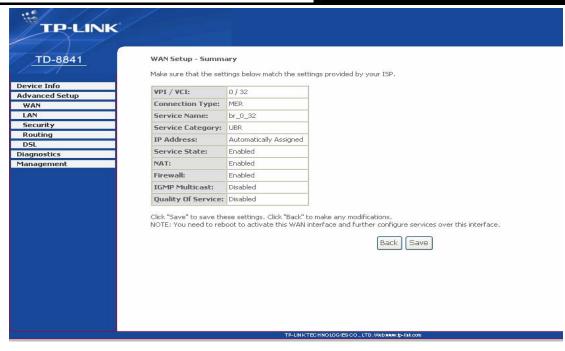


Figure 3-15

#### IP over ATM (IPoA)

If you select the protocol of IP over ATM (IPoA), you will see the Figure 3-16, enter the parameter and the way which is provided by your ISP, then click the next button.

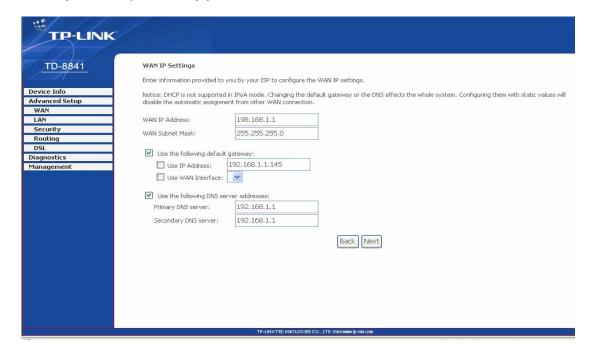


Figure 3-16

You will see the page (Figure 3-17), then turn on the selected functions according to your needs. Clicking the next button to enter the next step, you will see the Figure 3-18, finally click save to complete the configuration.

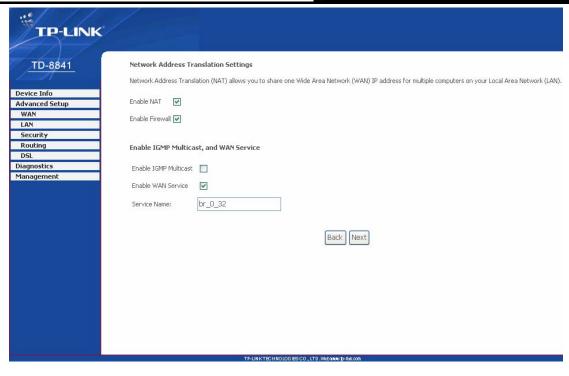


Figure 3-17

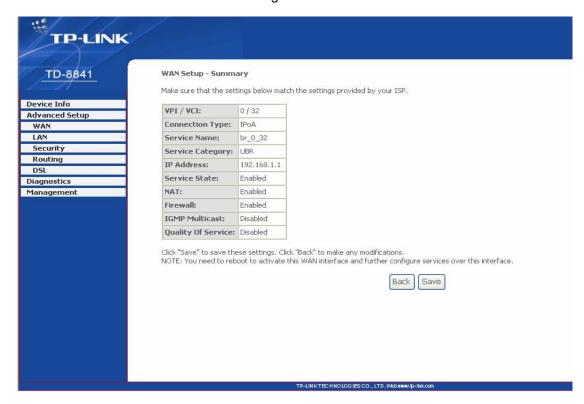


Figure 3-18

#### **Bridging**

If you select the Bridging protocol, you just open the bridge service function options, you will see the Figure 3-19, then click the next button, you will see the Figure 3-20, finally press save to complete the configuration.

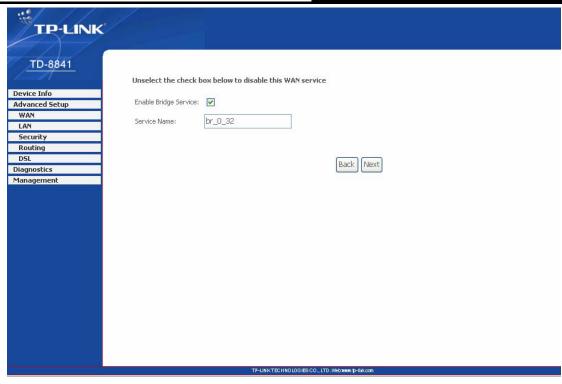


Figure 3-19

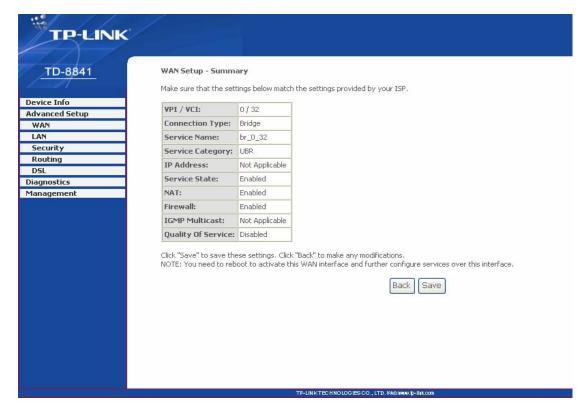


Figure 3-20

#### 

After you complete the settings, the new settings must be saved and the Router must be restarted for the settings to go into effect. Please press the Save/Reboot button to restart, referring to the Figure 3-21.

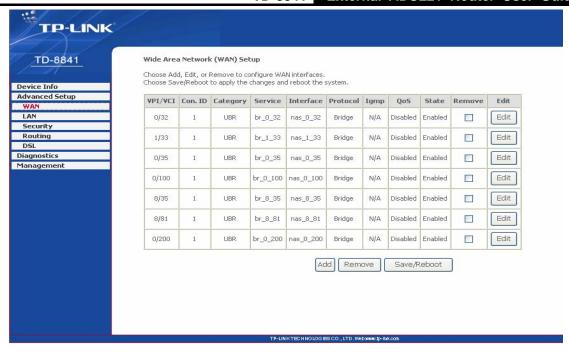


Figure 3-21

#### 3.4 Software Dial

If TD-8841 CPE work in bridged (RFC 1483 Bridged) mode when it connects Internet. You must to install dial software on your PC. There are some software working on WINDOWS in market, example for EnterNet3000、RASPPPoE、WinPeET.

How do I set up the connection in the windows XP?

- Windows XP can click the "start->All Programs->Accessories-> Communications->New connection wizard", then click Next to enter the setting page.
- Please you select the "connect to the internet", and then click the Next button to enter the next page and select the "set up my connection manually", click Next to enter the next page.
- Please select the "connect using a broadband connection that requires user name and password", click Next to type the name of your ISP in the current page, and then click Next.
- Type an ISP account name and password, if you have forgotten an existing account name or password, please connect with your ISP, click Next.
- To create the connection and close this wizard, click finish to add a shortcut to this connection to your desktop.
- When you intend to assess the internet by ADSL, double-click this shortcut of dial connection in your desktop, while type the account name and password, then click connect to connect the Internet.

How do I set up the connection in the Windows Vista?

Lleave of Windows Viete can do as follows

Users of Windows Vista can do as following: Right-press Network->Choose Properties, then you can see Figure 3-22.



Figure 3-22

Click "Set up a connection or network" in the right of this page. And choose "Set up a dial-up connection" in the new page, click Next. After that, you will see Figure 3-23, click "Set up a connection anyway" to enter next page.

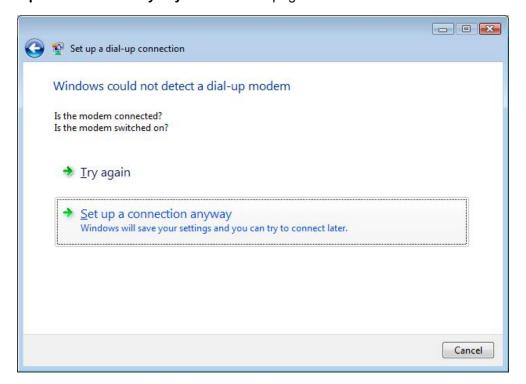


Figure 3-23

- > Type the **Dial-up phone number**, the **User name** and **password** supplied by your ISP in the new page, if you have forgotten an existing user name or password, please connect with your ISP. Click Create to create the dial-up connection.
- Click **Close** to finish the setup.
- To connect to the Internet next time, click the Start button, click Connect to, and then click the connection you just created.

#### 3.5 USB Configuration

If you use the USB interface, First of all you must install the USB's drive to the using computer. You can obtain the drives from the provided CD or download from our website. (http://www.tp-link.com)

#### **USB** Drive installation procedures

If the hardware is installed before the computer is Power On. Please turn on the computer and enter into the windows operating system, Then the operating system will identify the device. If the hardware is installed after the computer is Power On, the desktop will display the information of found the new hardware.

Then you will see the Figure 3-24 require install software for USB Device, select 'Install from a list or specific location (Advanced)'and click the next button to enter the next step. You will see the Figure 3-25.



Figure 3-24

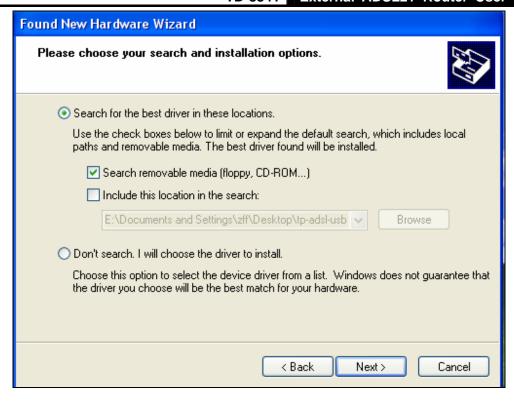


Figure 3-25

Select the 'search removable media(floppy, CD-ROM···)', and click the next button. You will see the Figure 3-26. The driver will be search and installed.

#### P Note:

You must insert the CD first.

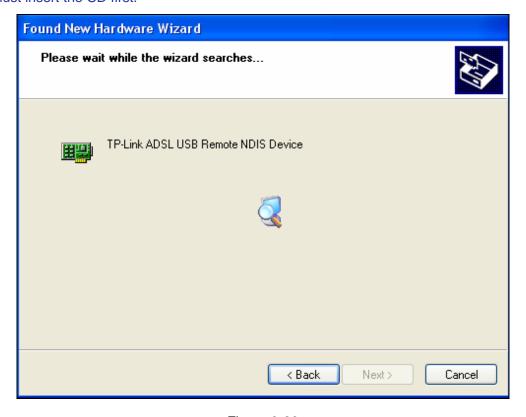


Figure 3-26

Waiting and you will see the Figure 3-27. When the driver finished installation, click Finish to close the installation.

Please refer to chapter 3.1 to finish the IP configuration of USB network connection. Then you could use the USB device.



Figure 3-27

Users of Windows Vista will see the Figure 3-28. Click the "Locate and install driver software (recommended)" to install driver software for your USB Network Interface.

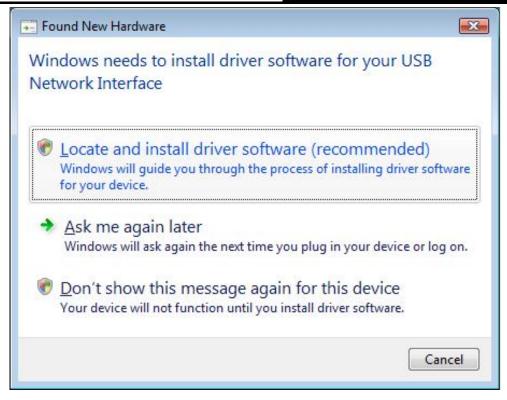


Figure 3-28

After that you will enter the next page shown as Figure 3-29. Click "Don't search online".

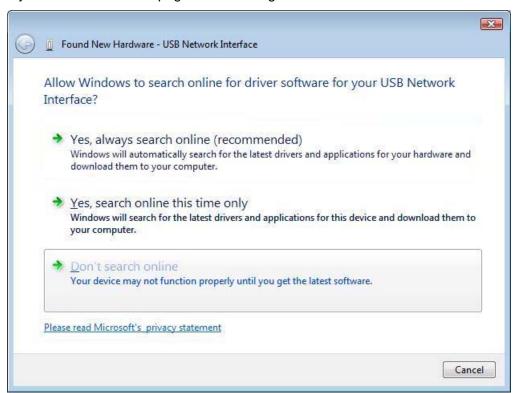


Figure 3-29

Then Figure 3-30 will be displayed. Click **Next** to search and install the driver from your CD.

#### P Note:

You must insert the CD first.

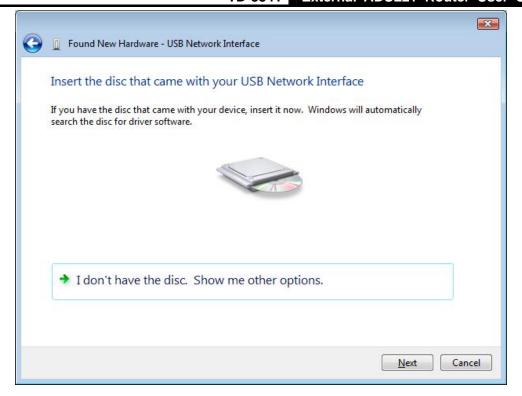


Figure 3-30

When Windows find the driver automatically, it will pop up Figure 3-31. Select "**Install this driver** anyway" to continue the installation.



Figure 3-31

Then please wait a second and you will see Figure 3-32 which indicates that the installation has been finished. Finally, click **Close** to finish it completely.



Figure 3-32

You can see following figure at the bottom of the screen.



Figure 3-33

#### P Note:

If you want cut off the USB device you must disconnect the network of USB first.

## **Chapter 4. Advantage Management Setup**

In order to satisfy our customer's needs we offer an excellent Web management interface. Feel free to utilize the Advantage application and online software upgrades. The functions of the Web management interface are as follows:

- Upgrade software
- ➤ Modify the default IP address of the port of LAN (192.168.1.1)
- Modify the login password
- Configure DHCP
- Check the information of IP and the operation status
- Configure the NAT function
- Configure the DNS parameters
- Configure RIP(Routing Information Protocol)
- Configure IP route
- Configure Security rule
- Configure DSL parameter

#### 

If you want to acquire further details, please access our website (www.tp-link.com) and consult the advantage user guide of TD-8841.

## Chapter 5.FQA

## 1. What related parameters are required to acquire ISP when you want to access the internet by ADSL2+ Router?

- 1) Dial user: Connection protocol, User name, Password, Value of VPI/VCI, Encapsulation mode of AAL5 and so on.
- 2) Static IP user: Connection protocol, WAN IP Address, Subnet Mask, Gateway, Value of VPI/VCI, Encapsulation mode of AAL5 and so on.

#### 2. About Connection protocol, VCI/VPI, Encapsulation mode of AAL5

- 1) This product supports the PPP protocol over ATM (PPPoA) PPP over Ethernet (PPPoE). MAC Encapsulation Routing (MER). IP over ATM (IPoA) and Bridging. You may be used with any one of the five protocols above. Because the ISP in different areas supports different protocol, you must choose the protocol which is supported by your ISP.
- 2) The VPI is the English abbreviation of the Virtual Path Identifier, the VCI is the English abbreviation of the Virtual Channel Identifier, the value of VCI/VPI must be compatible with the value that provided by ISP.
- 3) Encapsulation mode of AAL5 include: LLC/SNAP and VC\_MAX (often using LLC/SNAP).

## 3. Why the LAN's and the NIC's LED both bright, but the configuration interface is inaccessible?

- 1) Use the order of **ping 192.168.1.1** to check the Accuracy of connection.
- Check the Accuracy of working NIC.
- 3) Whatever the setup of the IP address on your computer (if you close the DHCP function, you can't obtain the IP address automatically, must specify the IP address of your computer manually).
- 4) Run the winipcfg order in the windows 95/98(run the ipconfig order in the windows 2000/Vista) to check whether setup the IP address, subnet mask, default gateway by DHCP.
- 5) Resume the ADSL2+ Router default configuration if necessary.

#### 4. Have completed all configurations, but can't dial through computer

- 1) Check the indicator of ADSL2+, it should be working normally.
- Check the accuracy of parameter of value of VPI/VCI, Encapsulation mode of AAL5 and so on, whether you need to install the software of dial the number, such as Winpoet, Enternet.
- 3) This product has the PPP dial procedure inside, so you will not need to use the dial software if your protocol is PPPoA or PPPoE, ADSL2+ Router will connect automatically.
- 4) You can check whether your ADSL2+ Router succeeds in connection with **PING** command.

## **Appendix A: Default Configuration**

USER NAME	admin
PASSWORD	admin
IP ADDRESS	192.168.1.1
VPI/VCI	0/32,1/33,0/35,0/100,0/200,8/35,8/81

## **Appendix B: Configuring the PCs**

In this section, we'll introduce how to install and configure the TCP/IP correctly in Windows 2000/XP. First make sure your Ethernet Adapter is working, refer to the adapter's manual if needed.

#### 1. Install TCP/IP component

- 1) Right-press Network Neighbor and Choose Properties.
- 2) Right click the icon that showed below, select Properties on the prompt page.

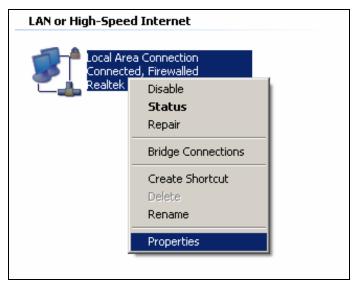


Figure B-1

3) In the prompt page that showed below, double click on the Internet Protocol (TCP/IP).

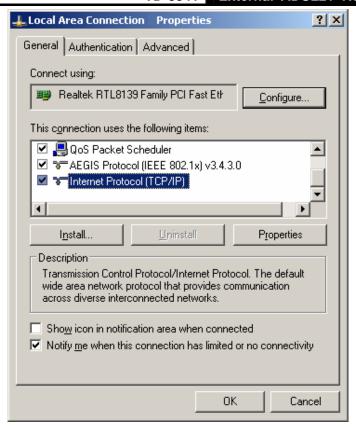


Figure B-2

4) The following **TCP/IP Properties** window will display and the **IP Address** tab is open on this window by default.

Now you have two ways to configure the TCP/IP protocol below:

#### > Setting IP address automatically

Select **Obtain an IP address automatically**, Choose **Obtain DNS server automatically**, as shown in the Figure below:

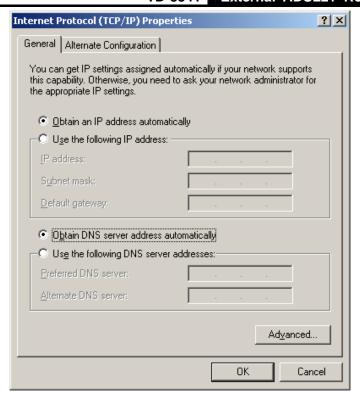


Figure B-3

#### > Setting IP address manually

- 1 Select **Use the following IP address** radio button. And the following items available
- 2 If the router's LAN IP address is 192.168.1.1, type IP address is 192.168.1.x (x is from 2 to 254), and **Subnet mask** is 255.255.255.0.
- 3 Type the router's LAN IP address (the default IP is 192.168.1.1) into the **Default gateway** field.
- 4 Select **Use the following DNS server addresses** radio button. In the **Preferred DNS Server** field you can type the DNS server IP address, which has been provided by your ISP.

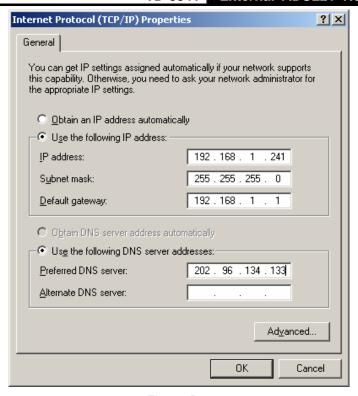


Figure B-4

#### Please note:

The configuration under Windows 98/Vista is a little different from that of Windows 2000/XP.

Users of Windows 98 can open **TCP/IP Properties** according to the following: Right-click (Mouse) **Network Neighbor** -> Choose **Properties** -> Double-click **TCP/IP PCI Fast Ethernet Adapter**.

Users of Windows Vista can do following: Right-press **Network**->Choose **Properties**, then you can see Figure B-5.

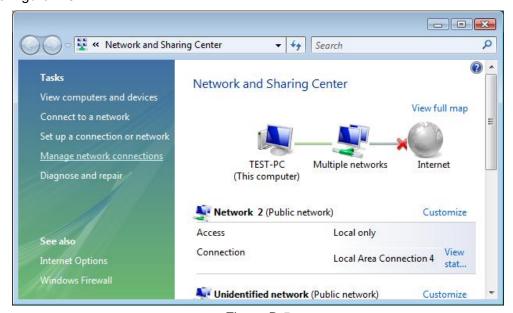


Figure B-5

Click "Manage network connections" in the right of this page. Then do as following: Right-press Local Area Connection ->Choose Properties->Double click Internet Protocol Version 4 (TCP/IPv4).

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