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Networks with Innovation

KD318EUI ADSL Router
User Manual

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Content

1   Overview

Thank you for using this Asymmetric Digital Subscriber Line (ADSL) router. With the asymmetric technology, this device runs over standard copper phone lines. In addition, ADSL allows you to have both voice and data services in use simultaneously all over one phone line. It is an ideal solution for the small and medium size business environment.

This ADSL router provides a 10/100BaseT interface for Ethernet connection and an USB interface for USB connection at the user end. Computers can simultaneously connect to the router either via its USB, Switch or both ports to share its high-speed Internet access. You can connect to its Switch port regardless of the operating system you are using, or connect to its USB port to allow easy installation to a USB equipped computer. It receives adaptive rates up to 24Mbps and transmits 1Mbps upstream.

1.1   Features

1.1.1   ADSL Compliance
- ANSI T1.413 issue 2

- Downstream: Up to 24Mbps.

- Max upstream speed: 3.5Mbps (With AnnexM enabled)

- Rate Adaptive at 32 Kbps steps

- Interoperable with all major DSLAM equipment

- TR-069 compliant with ACS

1.1.2   Standards & Protocols Conformance
- ITU G.994.1(G.hs) G.992.1(G.DMT) G.992.2(G.LITE)

- ITU G.992.3(G.DMT.BIS)

- ITU G.992.5

- T1.413

- EoA (PPPoE, IPoE, and Bridge)

- PPPoA

- IPoA

1.1.3   Operating System Support
- WINDOWS 98/98 SE/ME/2000/XP/VISTA/7/8

- Macintosh

- LINUX

1.1.4 ATM Capabilities

- ATM Connection

- VPI Range: 0-255

- VCI Range: 32-65535

- AESA (E.164, DCC, ICD)

- PVC Support

- UNI 3.0 & 3.1 Signaling

- Support AAL 5

1.1.5 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

1.1.6 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 ADSL 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 four computers.
- 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
- 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 ADSL router must adopt the primary line that directly outputs from junction box. Do not connect ADSL 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
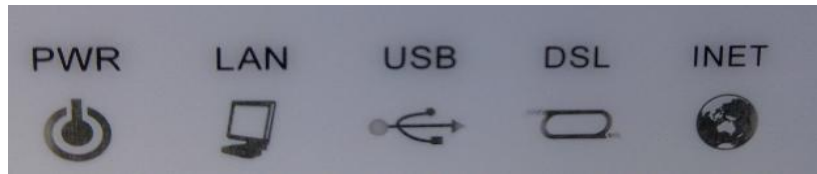
LED	Color	Function
PWR	Red	On: Power Off: No power or system boot failed
LAN	Red	On: LAN link established and active Blinking: ADSL data activity occurs. Off: No LAN link.
USB	Red	On: USB link established and active Off: No USB link
DSL	Red	On: ADSL link established and active Blinking: ADSL is trying to establish a connection Off: No ADSL link
INET	Red	Blinking: ADSL data activity occurs. Off: No ADSL data is being sent or received.

Rear Panel
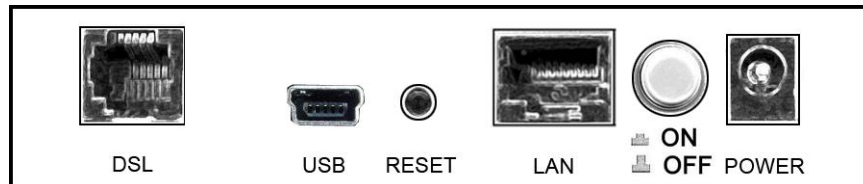
Port	Function
DSL	Connects the device to an ADSL telephone jack or splitter using a RJ-11 telephone cable
LAN	Connects the device to your PC's Ethernet port, or to the uplink port on your hub/switch, using a RJ-45 cable
USB	Connects the device to your PC's USB port
Reset	System reset or reset to factory defaults.
POWER	Connects to the supplied power adapter
ON/OFF	Switches the unit on and off

3   Hardware Installation

This Hardware Installation describes how to connect ADSL router to your computer, LAN and the Internet. This Installation assumes you have subscribed to an ISP for ADSL service and only covers the basic configurations to be applied to residential or corporate networks.

Hardware Connection

1. Using a telephone line to connect the **DSL** port of ADSL router to the **MODEM** port of the splitter, and using another telephone line to connect your 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)
    MODEM: Connects to the DSL jack of ADSL router
    PHONE: Connects to a telephone set

2. Using an Ethernet Cable to connect the LAN port of the ADSL router to your LAN or a PC with network card installed.

3. Connect the power cable to the POWER connector on ADSL 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 ADSL router, and the ADSL router may introduce noise to the telephone line. To prevent this from happening, a small external splitter must be connected to each telephone.

4   Software Installation

This chapter shows you how to install the router's USB drivers when PC connects to the router via its USB port.

1. Insert the rectangular end of a USB cable into the USB port of your PC.

2. Insert the square end of the USB cable into the USB port of the Router.

3. Power on the router and then a dialog box of " A new hardware is found" is displayed on the screen.

4. Press "Next" button, the system then search for hardware driving program. Choose the soft driver in the "assigned position" and press "next", the system will automatically install the driving program recorded on the soft disk into the system.

5   PC Configuration Guide

## 5.1   Local PC Configuration
5.1.1   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 your 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 your ISP.

7. Click "OK" twice to confirm and save your changes.

8. You will be prompted to restart Windows. Click "Yes".

5.1.2   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 your ISP.

7. Click "OK" twice to confirm and save your changes.

5.2   Access the program

After configuring the IP Address of you computer, powering on the ADSL Router, and launching a web browser, such as Internet Explorer, use **http://192.168.1.1** to log on to the setting pages.

Enter username '**admin**' and password '**adslroot**'

Click **OK**
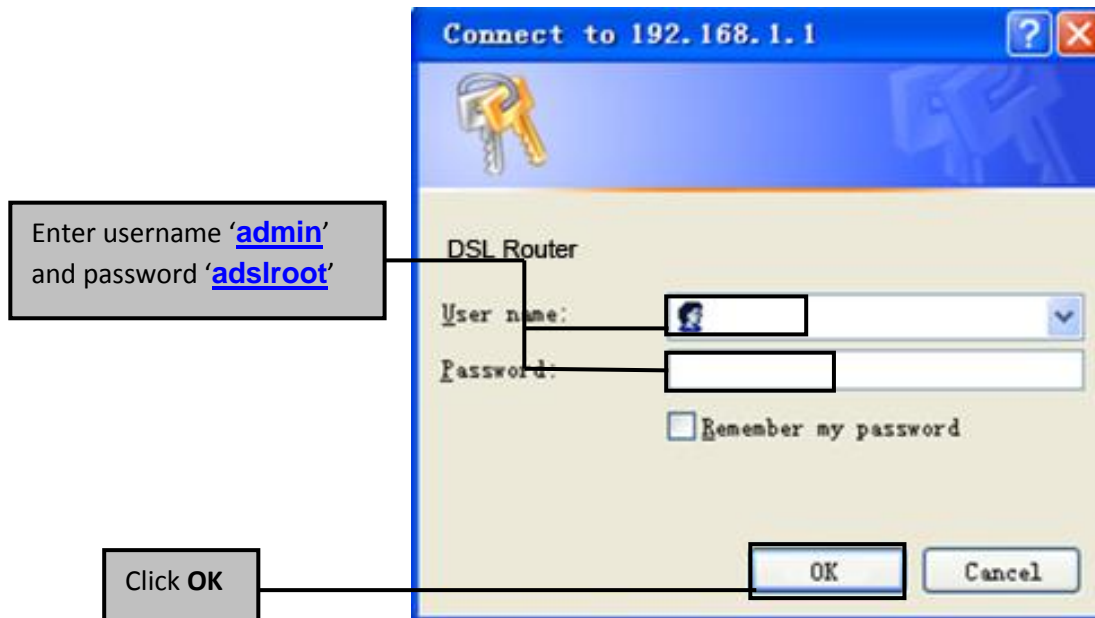
Attention: the username and password are both lowercase.

5.3 Internet Access Configuration

5.3.1   ADSL Mode 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	Remove

Add   Remove

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

VPI: [0-255]   0

VCI: [32-65535] 35

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

○ MSC Mode - Multiple Service over one Connection

Encapsulation Mode: LLC/SNAP-BRIDGING ▾

Service Category: UBR Without PCR ▾

3. Click **WAN Service** from the left menu.

Interface	Description	Type	Vlan8021p	VlanMuxId	ConnId	Igmp	NAT	Firewall	Remove	Edit

Add   Remove

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

atm0/(0_0_35) ▾

Back   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**.

WAN Service Configuration

Select WAN service type:
- ◉ PPP over Ethernet (PPPoE)
- ○ IP over Ethernet
- ○ Bridging

Enter Service Description: pppoe_0_0_35

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: AUTO

- ☐ Enable Fullcone NAT

- ☐ 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.

Selected Default Gateway Interfaces		Available Routed WAN Interfaces
ppp0	-> <-	

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
ppp0	-> <-	

○ 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.

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

5.3.2 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.

Interface	Description	Type	Vlan8021p	VlanMuxId	ConnId	Igmp	NAT	Firewall	Remove	Edit

Add   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: IPv4

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 that the IP address is x.x.x.x.

Interface	Description	Type	VlanMuxId	Igmp	NAT	Firewall	Status	IPv4 Address

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.

5.3.3 TR069 Client

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

Inform	⊙ Disable ○ Enable
Inform Interval:	300
ACS URL:	
ACS User Name:	admin
ACS Password:	•••••
WAN Interface used by TR-069 client:	Any_WAN ▾
Display SOAP messages on serial console	⊙ Disable ○ Enable
☑ Connection Request Authentication	
Connection Request User Name:	admin
Connection Request Password:	•••••
Connection Request URL:	

[Apply/Save]   [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 you power on the ADSL router?

A: Please make sure what you 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 you 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 you ADSL operator.

Q: DSL LED is in the circulation of slow-flashing and fast-flashing after connecting 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 you 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), you must use cross-cable. Please make sure that your 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 you have set the NAT rules and convert private IP address to legal IP address. IP address range of the PC that you specify should meet the setting range in NAT rules.

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. You 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 your VPI, VCI, type of
     encapsulation and type of multiplexing setting are the same as what you collected from your
     service provider, Re-configure ADSL router and reboot it. If you still can not work it out,
     you may need to verify these variables with the service provider.

If the cause is not given above, please contact your local service provider