PARADYNE®

Hotwire[®] ADSL/R Bridge/Router, Model 6381 with Inline Phone Filter Installation Instructions

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Installation Procedures

To install the Hotwire ADSL/R Bridge/Router:

- Verify the contents of the package and obtain the correct cables (see Package Checklist on page 2 and Wiring and Cables You Need (not supplied) on page 2)
- Install phone filters on all phones that will share the same phone line as the router (see Installing Phone Filters on page 3)
- Connect the router (see *Installing the Hotwire ADSL/R Bridge/Router* on page 4)
- Verify that the front panel LEDs show the correct status (see LED Status on page 7)
- If necessary, configure the router (see Configuring the Hotwire ADSL/R Bridge/Router on page 8)

Definitions

The following terms are used in this booklet.

network	A group of connected things, such as telephones or computers.
bridge	A device that forwards any message from one part of a network to another. The Hotwire ADSL/R Bridge/Router is shipped as a bridge.
router	A device that forwards messages according to their network addresses. You must configure the Hotwire ADSL/R Bridge/Router to make it work as a router.
POTS	Plain Old Telephone Service. The voice service provided over the public switched telephone network (PSTN).
DSL	Digital Subscriber Line. The technology that allows you to use a POTS line for both voice calls and high-speed Internet access simultaneously.
ADSL	Asymmetric DSL. A version of DSL that allows a higher speed for information coming from the Internet to your PC ("downstream") than it does for information going to the Internet from your PC ("upstream").
ReachDSL	A proprietary Paradyne version of DSL that works on lines too long or too noisy for ADSL.
ADSL/R	The technology that combines ADSL and ReachDSL in one device.

Package Checklist

Verify that your package contains the following:



Hotwire 6381 ADSL/R Bridge/Router





Power cord with power transformer

DSL interface cable with RJ11 connectors

Ethernet 8-pin cable



Two ferrite clamps

Wiring and Cables You Need (not supplied)

The following standard cables and connectors are used with this product:



Standard RJ11 (or RJ14) wall jack for the DSL cabling

Installing Phone Filters

A phone filter is recommended to minimize background noise during a phone conversation on telephones not connected directly to the Hotwire ADSL/R Bridge/Router. If additional telephones in your home or business share the same phone line with the router, install one phone filter on each telephone. A fax machine or other equipment that uses the same POTS line as the router must also use a filter.



There are two Hotwire phone filters available:

- Hotwire 6035 Universal Phone Filter is designed for use with a tabletop phone.
- Hotwire 6040 Wall Jack Phone Filter is designed for use with a wall phone.



Contact your sales or service representative to order Hotwire phone filters.

Installing the Hotwire ADSL/R Bridge/Router

Place the router on a flat surface with clearance for the rear connectors.

Procedure

1. UNPLUG TELEPHONE. If a telephone is connected at the RJ11 wall jack where the router will be installed, unplug the telephone cable from the wall jack.



2. RECONNECT TELEPHONE.

(Optional. Go to Step 3 if you are not connecting a telephone to the router.)

Plug the existing telephone cable that was unplugged in Step 1 into the jack labeled PHONE. The router has a built-in filter, so no filter is required on this phone.



3. CONNECT DSL LINE. Use the supplied RJ11 telephone cable for the ADSL/R line connection. Insert one end of the cable into the jack labeled LINE. Insert the other end of the cable into the RJ11 wall jack.



4. INSTALL WHITE FERRITE CLAMP. If you plugged in a phone, install the supplied white ferrite clamp around both the LINE and PHONE cables. If you did not plug in a phone, install the white clamp around the LINE cable.

Hold the open clamp around the cable or cables as close to the router as possible. Close the clamp and lock it by pressing on the latch.



5. CONNECT TO PC OR ETHERNET HUB. Use an 8-pin Ethernet cable (straight-through or crossover) for the Ethernet connection. Insert one end of the cable into the jack labeled ETHERNET.

Connect to one of the following:

 PC. Use an Ethernet standard, straight-through cable and connect the other end to a PC with an Ethernet Network Interface Card (NIC) installed.



Cable

– or –

- Ethernet Hub. Use an Ethernet standard, straight-through cable and connect the other end to an Ethernet hub's Uplink port. (To connect to a hub's standard port, use an Ethernet crossover cable. See the documentation that came with your hub.)
- 6. INSTALL BLACK FERRITE CLAMP. Hold the open clamp around the Ethernet cable as close to the router as possible. Close the clamp and lock it by pressing on the latch.

 CONNECT TO POWER. Insert the supplied power cord's round end into the jack labeled POWER. Plug the transformer into an AC outlet.

When the power cord is installed, the router goes through a power-on self-test. *LED Status* on page 7 shows how the LEDs should appear after a successful test.



Installation is now complete.

If your Internet Service Provider (ISP) has instructed you to configure the Hotwire ADSL/R Bridge/Router using the web interface, or if you would like to use the device as a router, proceed to *Configuring the Hotwire ADSL/R Bridge/Router* on page 8.

Note to service provider: Each 6381 on the same subnet requires a unique IP address if you wish to upgrade firmware or access it using the web interface.

LED Status

The Hotwire ADSL/R Bridge/Router's front panel includes LEDs (light-emitting diodes) that provide status on the router and its interfaces. In Table 1, Front Panel LEDs, the Condition in **BOLD** shows how the LED should appear after a successful power-on self-test.



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LED	Condition	Status
PWR	ON	The router has power.
ALM	ON	An alarm condition exists.
	OFF	No alarms have been detected by the router.
TST	ON	A service provider-initiated test is in progress.
	OFF	No tests are active.
LINE	ON	The DSL link is established.
	OFF	No DSL link has been established.
TX/RX	Blinking	Data transmission is in progress on the DSL line.
	OFF	No data is being transmitted or received by the router.
ETHERNET	ON	The Ethernet connection is active.
	OFF	No Ethernet device is detected.

Table 1. Front Panel LEDs

Configuring the Hotwire ADSL/R Bridge/Router

STOP. Do not proceed with this section unless you were so instructed by your Internet Service Provider (ISP), or you are familiar with IP and routing protocols.

Depending on the requirements of your ISP, your Hotwire ADSL/R Bridge/Router may have a web interface that you can access using a web browser such as Internet Explorer or Netscape. The web interface is used to configure the router.

Procedure

To configure the router using the web interface:

- 1. Start your web browser on a PC that is connected to the router directly or through your hub.
- 2. Type the following into your web browser's address line:

http://192.168.1.1:8080

- 3. Press Enter. The Login screen appears.
- **4.** Enter the password provided to you by your ISP. (This is **admin** if your ISP uses the factory default.) The Basic Setup screen appears.

6381 ADSL/R Route		PARADYNE bringing broadband to the world
Basic Setup Advanced Setup Network Miscellaneous Virtual Servers Custom Virtual Servers Eirmware Upgrade Status Router Status DSL Status Versions	Basic Setup	Renew DHCP Lease Release DHCP Lease
Logout	DNS 3 PPPOA(LLC/SNAP) C PPPOA(VC-MUX) User Name Password Confirm Password Confirm Password	
	Idle Timeout JU minutes PPP bistuined DSL VPI 0 VCI 35 Modulation Multi-mode Warning: password need	Å ▼ ds to be changed! Save Reset

5. Enter and select the parameters according to the instructions provided by your ISP. Click on Save.

6. Click on Network. The Network screen appears.



- Enter and select the parameters according to the instructions provided by your ISP. Click on Save.
- **8.** When you have made all changes recommended by your ISP, click on the Logout link to end the session.

The following sections describe all the web interface screens.

Login

This is the first screen that you encounter when you type the router's IP address into the address line of your web browser. Enter the default password provided to you by your Internet Service Provider (ISP). This is **admin** if your ISP uses the factory default. Change the password upon your first login, and keep a record of the new password. Factory defaults must be restored to recover from a lost password, resulting in the loss of all current settings in the router.

Basic Setup

This screen allows you to configure your router's server side (Wide Area Network, or WAN) properties. Follow the instructions provided by your ISP.

Internet

The Basic Setup screen has buttons that let you select the method that your router uses to connect to the Internet. There are five different ways that you can use to connect to the Internet:

- 1. Obtain an IP address automatically. This method uses the Dynamic Host Configuration Protocol (DHCP) to obtain the IP address from the server. The IP address is dynamically assigned and is not known prior to assignment.
- Specify an IP address. Use this option if your ISP has assigned a static IP address. Enter the IP address, subnet mask, and gateway as instructed by your ISP. Up to three Domain Name Server (DNS) addresses can also be specified. These allow you to have access to other web servers.
- **3.** PPPoE. PPPoE (Point to Point Protocol over Ethernet) is also known as RFC 2516. PPP is a method of establishing a session between network hosts. It usually provides a mechanism of authenticating users. PPPoE is a method of encapsulating PPP packets over Ethernet.
- 4. PPPoA (LLC/SNAP) or
- PPPoA (VC-MUX). PPP over ATM is also known as RFC 2364. It is a method of encapsulating PPP packets over ATM cells which are carried over the DSL line. LLC/SNAP and VC-MUX are two different methods of encapsulating the PPP packet.

In order to connect using PPPoE or PPPoA, click on the appropriate radio button, fill out the login information and other variables, and click on the Connect button. To disconnect, click on the Disconnect button.

Connect on Demand: If this option is checked, then the connection remains dormant until traffic flows through the link. If the Connect on Demand feature is checked, and the modulation chosen is PPPoE or PPPoA:

- In order to initiate a PPP connection on demand, access a remote website with your browser. When traffic is detected over the link, the connection is activated.
- When the Disconnect button is clicked to stop the PPP connection, Internet access is disabled until the Connect button is clicked. No subsequent browser requests are acted upon until the Connect button is clicked or the Connect on Demand option is unchecked.

Idle Timeout: This is the duration of time (in minutes) after which the PPP connection times out due to lack of activity.

DSL

VPI and **VCI**: These need to be filled in for the router to be able to communicate with your Central Office (CO) via DSL. VPI (Virtual Path Identifier) and VCI (Virtual Circuit Identifier) identify the route that the ATM cells take to reach the CO.

Modulation: This specifies the DSL modulation: Multi-Mode, T1.413, G.DMT (G.992.1), or G.LITE (G.992.2). In Multi-Mode, the router automatically detects the modulation.

To save the settings, click on Save. If you have made a mistake, you can click on Reset to start over.

Advanced Setup – Network

The Network screen allows you to configure your router's client side (Local Area Network, or LAN) properties. This allows you to modify the router's LAN IP address and the method of routing to use. Apply changes with care, since they could affect other clients connected to the router.

LAN IP Address and Network Mask: These fields set the IP address and mask of the router on the client side. These are the connection parameters that your PC uses to communicate with the router.

Host Name: Some ISPs require your router to be uniquely identified by a host name.

DHCP server: Click on Enable if you want your router to run a DHCP server to dynamically assign IP addresses to client machines.

IP Range: Specifies the range of IP addresses that the router may assign to clients requesting an IP address.

Lease Time: Duration (in hours) for which the assigned IP address remains valid When the IP address expires, the client must renew it.

Routing without NAT: This method requires each client connected to the router to have a True IP address. The router maps this IP uniquely with a client and routes traffic appropriately.

Routing with NAT: This method supports both True and Virtual IP addresses for clients. The router maintains a table of virtual IP addresses and port numbers. The combination of these two uniquely identifies each client.

Bridging: Selecting this method causes the router to function as a simple bridge with no routing functionality.

Advanced Setup – Miscellaneous

The Miscellaneous Setup screen allows you to change the web login password, set up a firewall, restart the router, and restore factory defaults.

Web Login

This feature allows you to change your basic router password. It is recommended that you change the default password after the first time you log in and that you change it periodically.

Web Timeout. This is the duration in minutes for which your session remains active. Once your session expires, the Login screen appears and you are required to enter your password again. Click on Change once you are done entering all the information.

Firewall

DMZ Support: Click in the Enable box to enable DMZ support. NOTE: When you enable DMZ support, Telnet traffic is sent to the DMZ host. Your current Telnet session is lost when you click on Save.

IP Address of DMZ Host: The DMZ host is the client machine that is assigned to receive any unmapped traffic.

Discard Ping from WAN Side: Click in the Enable box to force all pings from the server side to any client side machine to be ignored by the router.

Remote Access of Configuration: Click in the Enable box to permit configuration of the router by a remote machine.

Remote Telnet: Click in the Enable box to permit a remote machine to telnet into the router using its IP address.

Enable SPI Protection: Click in the Enable box to enable Stateful Packet Inspection (SPI), which intercepts packets at the network layer and analyzes data derived from all communication layers. It can incorporate communication and application specific context data which can be stored and updated dynamically.

Click on Save to apply the firewall configuration for your router.

Miscellaneous Items

Restart Router: Clicking on this button causes the router to reboot. All previously saved configuration settings are applied.

Restore Factory Defaults: Clicking on this button restores all factory default settings. Any changes that you may have applied are permanently lost.

Advanced Setup – Virtual Servers

The Virtual Servers screen allows you to enable and configure your virtual servers. In common networks, there is often a need to organize servers based on the specific functions they need to serve. For instance, you may need to have a Domain Name Server, Web Server, and a Mail Server, each of them uniquely identified by its IP address. These well known servers need to be configured so that they can be externally accessed.

To configure a virtual server, specify the IP address and click in its associated Enable box. Unless the Enable field is checked, your IP settings are ignored. Click on Save to save the settings.

NOTE: If you define a Telnet virtual server, your current Telnet session is lost when you click on Save.

Advanced Setup – Custom Virtual Servers

This screen is an extension to the Virtual Server screen and can be used to configure non-standard servers. You need to know the protocol that needs to be used in order to access these servers, and also their LAN side and WAN side port numbers. The Range field is used to specify the number of ports used by the custom server. Unless the Enable box is checked, all the settings are ignored. Click on Save to save the settings.

Status – Router Status

The Router Status screen gives you basic information about the router, including WAN and LAN IP settings, MAC addresses, routing mode, and DHCP settings. This screen can be used as a means of verifying your current settings and to check if all the configuration changes you made were applied successfully.

Status – DSL Status

The DSL Status screen gives you the status of your broadband (DSL) connection. It also serves as a way to verify your current settings.

Modem Status: This field tells you whether you are connected or not.

Connection Rates: TX (upstream) and RX (downstream) data rates are displayed in kbps.

VPI and **VCI**: These are the Virtual Circuit parameters used to connect to the Central Office.

Protocol: This is the protocol used to connect to the Central Office.

Modulation: This field specifies the modulation standard used in your DSL connection.

Advanced DSL Status: Click on the Advanced DSL Status link to obtain detailed status information, including payload rates and ATM statistics.

Status – Versions

This screen supplies identification and revision information for your router and its firmware.

Logout

The Logout link ends your web interface session and displays the login screen. The Login screen is also displayed after a specified idle timeout value value that can be configured from the Basic Setup screen.

A Important Safety Instructions

- 1. Read and follow all warning notices and instructions marked on the product or included in the manual.
- Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
- 3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
- 5. General purpose cables are used with this product for connection to the network. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer. Use a UL Listed, CSA certified, minimum No. 24 AWG line cord for connection to the Digital Subscriber Line (DSL) network.
- 6. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
- 7. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are interconnected, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.
- 8. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified transformer, with a Safety Extra Low Voltage (SELV) output having a maximum of 240 VA available, for use in the country of installation.
- 9. In addition, since the equipment is to be used with telecommunications circuits, take the following precautions:
 - Never install telephone wiring during a lightning storm.
 - Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
 - Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
 - Use caution when installing or modifying telephone lines.
 - Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a
 remote risk of electric shock from lightning.
 - Do not use the telephone to report a gas leak in the vicinity of the leak.

CE Marking

When the product is marked with the CE mark on the equipment label, a supporting Declaration of Conformity may be downloaded from the Paradyne World Wide Web site at **www.paradyne.com**. Select Support \rightarrow Technical Manuals \rightarrow CE Declarations of Conformity.

A CANADA – EMI NOTICE:

This Class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du règlement sur le matérial brouilleur du Canada.

Japan - Notices

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準 に基づくクラスB情報技術装置です。この装置は、家庭環境で使用すること を目的としていますが、この装置がラジオやテレビジョン受信機に近接して 使用されると、受信障害を引き起こすことがあります。 取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Declaration of Conformity

This Declaration of Conformity is made by Paradyne Corporation pursuant to Parts 2 and 15 of the Federal Communications Commission's Rules. This compliance information statement pertains to the following products:

Trade Name: Hotwire Model Number: 6381-Ax-2xx

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

The name, address, and telephone number of the responsible party is given below:

Paradyne Corporation 8545 126th Avenue North Largo, FL 33773-1502 Phone: (727) 530-2000

The authority to operate this equipment is conditioned by the requirement that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation. The supplied ferrite clamps must be installed as instructed to ensure compliance with Part 15, FCC Rules.

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.

Supplier's Declaration of Conformity

Place of Issue:	Paradyne Corporation 8545 126 th Avenue North Largo, FL 33773-1502 USA

Date of Issue: 02/26/2003

Paradyne Corporation, located at the above address, hereby certifies that the Hotwire® ADSL/R Bridge/Router Model Number 6381-AX-210, bearing labeling identification number US:AW2DL03B6381-AX complies with: the Federal Communications Commission's ("FCC") Rules and Regulations 47 CFR Part 68, the Administrative Council on Terminal Attachments ("ACTA")-adopted technical criteria TIA-968-A, "Telecommunications -Telephone Terminal Equipment -Technical Requirements for Connection of Terminal Equipment To the Telephone Network, October 2002."

Patrick Murphy Senior Vice President, Chief Financial Officer

Pulling

Notice to Users of the United States Telephone Network

The following notice applies to versions of the Hotwire ADSL/R Bridge/Router, Model 6381, that have been FCC Part 68 approved.

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachment (ACTA). On the bottom side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the Telephone Company.

This equipment is intended to connect to the Public Switched Telephone Network through a Universal Service Order Code (USOC) type RJ11C or RJ14C jack. A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It has been designed to be connected to a compatible modular jack that is also compliant.

The Ringer Equivalence Number (or REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local Telephone Company. The REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point. For example, 03 represents a REN of 0.3.

If the ADSL/R Bridge/Router causes harm to the telephone network, the Telephone Company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the Telephone Company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The Telephone Company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the Telephone Company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the ADSL/R Bridge/Router, refer to the repair and warranty information in this document.

If the equipment is causing harm to the telephone network, the Telephone Company may request that you disconnect the equipment until the problem is resolved.

The user may make no repairs to the equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If the site has specially wired alarm equipment connected to the telephone line, ensure the installation of the ADSL/R Bridge/Router does not disable the alarm equipment. If you have questions about what will disable alarm equipment, consult your Telephone Company or a qualified installer.

Notice to Users of the Canadian Telephone Network

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation IC before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

NOTICE: The Ringer Equivalence Number (REN) for this terminal equipment is labeled on the equipment. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

If your equipment is in need of repair, contact your local sales representative, service representative, or distributor directly.

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Notice to Service Providers

Consult any associated release notes before upgrading firmware. Both, when available, will be found at **www.paradyne.com**. Select *Support* \rightarrow *Subscriber Firmware*.

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