



**WIRE SPEED  
ADSL MODEM (MODEL 2000)**

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**User Guide**

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## 1. PRODUCT DESCRIPTION

The Westell WireSpeed ADSL Modem uses an existing phone line to provide reliable, high-speed Internet access for your home or office. The Westell WireSpeed ADSL modem allows you to enjoy “always-on” high-speed Internet connection, and receive voice calls over the same phone line.

The WireSpeed ADSL Modem can support downstream data rates of 8 Mbps and upstream rates of 800 Kpbs, which are 280 times faster than traditional analog 28.8 modems. Westell ADSL modem is a “plug and play” device, so setting up your modem is as simple as connecting it to a PC with an installed Ethernet Adapter (NIC) and connecting the modem to your wall phone jack that is DSL ready.

## 2. SAFETY

Follow these safety precautions when installing any electronic equipment:

- Never install any telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.



**Risk of electric shock. Voltages up to 140 Vdc (with reference to ground) may be present on telecommunications circuits.**



## 2.1 FCC Compliance 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 the receiver.
- Connect the equipment to a different circuit from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## PART 68 – COMPLIANCE REGISTRATION

This equipment (ADSL modem) also complies with Part 68 of the FCC rules. A label on the bottom of this equipment contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

This equipment is designated to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. An FCC compliant telephone cord and modular plug is provided with the equipment. See the installation instructions for details.

If this terminal equipment (ADSL modem) causes harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved. The telephone company will notify you in advance if temporary discontinuance of service is required. If advance notification is not practical, the telephone company will notify the customer as soon as possible. You will be advised of your right to file a complaint with the FCC, if you believe such action is necessary.

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

If you experience trouble with this equipment (ADSL modem), do not try to repair the equipment yourself. The equipment cannot be repaired in the field and must be returned to the manufacturer. Contact Westell Customer Support at telephone no. (630) 375-4500 for instructions on product return.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection of this equipment to party line service is subject to state tariffs.

## 2.2 Canada Certification Notice

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operations and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local Telecommunication Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.



Repairs to certified equipment should be coordinated by a representative, and designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal, metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.



**Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.**

## 3. INSTALLATION

### 3.1 Installation Requirements

To install the Westell ADSL modem, you will need the following:

1. An Ethernet adapter installed in your PC.
2. A DSL-ready phone line (provided by your Service Provider).

### 3.2 Package Contents

Your Westell modem kit should contain the items listed below. If anything is missing or damaged, please contact your DSL Service Provider.

- WireSpeed ADSL Modem
- Power Supply
- RJ-11 DSL Phone Cable
- RJ-45 Ethernet Cable (straight-through)
- Westell CD-ROM containing a User Guide in .PDF format
- Quick Start Guide

### 3.3 Microfilters

ADSL signals must be blocked from reaching each telephone, answering machine, fax machine, computer modem or similar conventional devices. Failure to do so may degrade telephone voice quality and ADSL performance. Install a microfilter if you desire to use the DSL-equipped line jack for telephone, answering machine, fax machine or other telephone device connections. Microfilter installation is simple and requires no tools or telephone rewiring. Just unplug the telephone device from the baseboard or wall mount and snap in a microfilter, next snap in the telephone device. Contact Westell to obtain a microfilter kit, which contains multiple microfilters for your installation.

### 3.4 Connectors

The following items are located on the rear panel of the ADSL Modem (see Figure 1). Tables 1 through 3 list the connector types and pinout designations.

- DSL (LINE) connector (RJ-11)
- Power connector (Barrel)
- Ethernet connector (RJ-45)

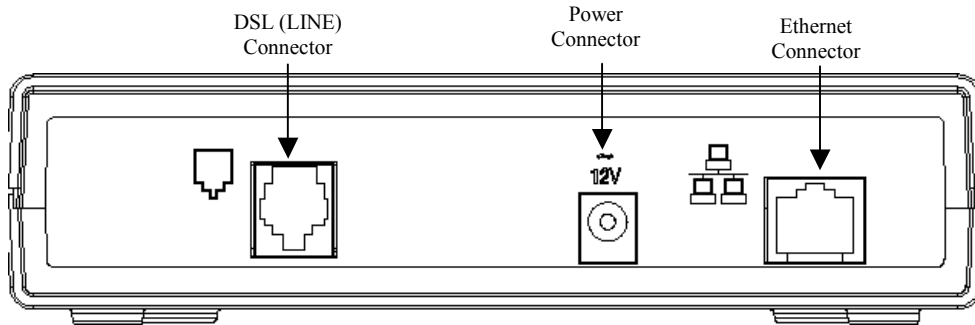


Figure 1. ADSL Modem Rear Panel

Table 1. ADSL Modem Connectors




SYMBOL	NAME	TYPE	FUNCTION
	LINE	6-pin RJ-11 modular jack	POTS/DSL is used to connect the telephone jack with ADSL
	Power	Barrel connector	Power source from plug-top transformer
	Ethernet	8-pin (RJ-45) modular jack	Connects to PC or 10/100 BaseT hub

Table 2. Line Connector Pinouts

LINE Pinout (RJ11)	
PIN#	
1, 2, 5, 6	Not Used
3	DSL Tip
4	DSL Ring

Table 3. Ethernet Connector Pinouts

Ethernet Pinouts (RJ45)	
PIN#	
1	Rx+
2	RX-
3	Tx+
4,5,7,8	Not Used
6	Tx-

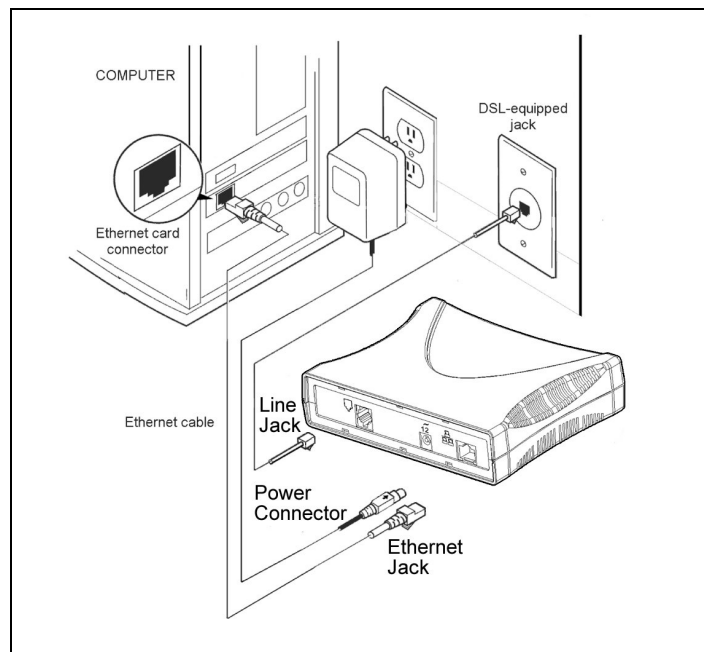
## 3.5 Installation Instructions

### 3.5.1 Getting Connected

Refer to the diagram shown in Figure 2 and follow steps below to connect the ADSL modem.




Note: Before you connect the modem via 10/100Base-T, you must have an available Ethernet card installed in your computer. If your card does not auto-negotiate, you must set it to half duplex. Refer to the Ethernet card manufacturer's instructions for installing and configuring your Ethernet card.




**Figure 2. ADSL Modem Connection**

Note: Please wait until you have received notification from your Service Provider that your DSL line has been activated before installing your modem.

1. Verify that you have an available Ethernet card. Note: See the above caution box.

2. Connect the Ethernet cable to the Ethernet port on your computer and to the Ethernet jack marked  on the rear panel of the modem.

3. Connect one end of the power supply cord to the connector marked **12V** on the rear panel of the modem. Plug the other end of the power supply cord into an AC wall socket.

4. Connect the DSL phone cable from the rear panel of the modem marked  to the DSL-equipped telephone line jack on the wall. **IMPORTANT:** Do not use a DSL filter on this connection. Note: You must use the modem phone cord that was provided with your modem kit.

5. Wait for the Ready, and Link LEDs to light steady green.



### 3.5.2 Installing Your ISP Software

Follow the steps below to install the modem software.

1. Install the software that was provided by your Service Provider per their instructions.
2. Enter your user password and ID information that was provided by your Service Provider.

## 4. TROUBLESHOOTING

### 4.1 LED Indicators

The LED indicators are used to verify the unit’s operation and status. The LED states are described in Table 4.

Table 4. LED States and Descriptions

LED	State	Description
POWER	Solid Green	Power ON
	No Light	No power
READY	Slow Flashing Green	Power ON and passed power-up diagnostics (1 flash/sec)
	Moderate Flashing Green	Power ON and attempting synchronization (2 flashes/sec)
	Steady Green	Power ON and synchronized with the ADSL line card
	Steady RED (less than 20 sec.)	Hardware power-up in progress
	Blinking Red	Unit failed power-up diagnostic
	Alternating Red/Green	Modem diagnostic failed
	No Light	No power
LINK	Solid Green	Link established
	No Light	No 10/100 Base-T Link
ACTIVITY	Pulsing Green	Data being transmitted or received. Pulses should match the reception or transmission of Ethernet data.
	No Light	No data on Ethernet interface

### 4.2 Routers

If you are using a Westell ADSL modem in conjunction with a router, refer to the router manufacturer’s instructions for proper installation and configuration.



## 5. TECHNICAL SUPPORT INFORMATION

### 5.1 Westell Technical Support

If technical assistance is required, contact Westell by using one of the following options:

Phone: 1-630-375-4500  
email: [global\\_support@westell.com](mailto:global_support@westell.com)

Visit Westell at [www.westell.com](http://www.westell.com) to obtain additional information, view frequently asked questions, or enter on-line service requests.

### 5.2 Warranty and Repairs

#### 5.2.1 Warranty

Westell warrants this product to be free from defects at the time of shipment. Westell also warrants this product to be fully functional for the time period specified by the terms and conditions of the warranty. Any attempt to repair or modify the equipment by anyone other than an authorized Westell representative will void the warranty.

#### 5.2.2 Repairs

Westell will repair any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, improper installation, or acts of nature. Before returning the defective equipment, request a **Return Material Authorization (RMA)** number from Westell. Once an RMA number is obtained, return the defective unit, freight prepaid, along with a brief description of the problem to:

Westell, Inc.  
ATTN: R.G.M Department  
750 N. Commons Drive  
Aurora, IL 60504-7940

Westell will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact a Westell Technical Support Representative for details.



## 6. PRODUCT SPECIFICATIONS

### **DIMENSIONS**

Width: 6.3 in. (16.0 cm)  
Depth: 5.07 in. (12.8 cm)  
Height: 1.6 in. (4.0 cm)

### **WEIGHT**

Approx. 2.0 lbs. (.90 kg)

### **ENVIRONMENTAL**

Ambient Operating Temperature: +32 to +104°F (0 to +40°C)  
Relative Humidity: 5 to 95%, non-condensing

### **POWER SUPPLY**

120 VAC (10%) to 12 VAC wall-mount power supply

### **POWER CONSUMPTION**

Less than 8 watts typical, from 120 VAC

### **CONNECTORS**

POWER: Barrel connector  
LINE (DSL): 6-pin (RJ-11) modular jack  
ETHERNET: 8-pin (RJ-45) modular jack

### **ETHERNET CONNECTOR PINOUT**

An RJ-45 type that carries the Receive data on Pins 1 and 2, and the Transmit data on Pins 3 and 6

### **ETHERNET INTERFACE**

Provides transmit and receive data paths for 10/100 Base-T Network Connection.

### **LINE (DSL) CONNECTOR PINOUT**

An RJ-11 type that carries combined ADSL and POTS signals on Pins 3 and 4.

### **DSL**

DSL Line Code: Discrete MultiTone (DMT)  
DSL Rates: 32 Kbps to 8 Mbps downstream and 32 Kbps to 800 Kbps upstream  
Power Spectral Density: -40 dBm/Hz  
DSL Impedance: 100 Ohms  
DSL Performance: per Category 1 in ANSI T1.413

### **EMC**

FCC, Part 15 Class B

### **SAFETY**

UL 1950  
cUL, CAN/CSA-22.2 950-93  
EN60950

### **REGULATORY APPROVAL**

UL  
CSA  
FCC Part 68  
Industry Canada CS03



*User Guide*

*WireSpeed ADSL Modem*

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