

Installation Instructions *Ethernet ADSL Modem*



S-235P-A

Product Description.....1
Compatibility..... 2
Unpacking/Inspection..... 2
Installation.....3
 Safety.....3
 Installation Criteria3
 Connectors.....3
 Installing on Hollow, Drywall Surfaces (Optional..... 4
 Wiring..... 5
 Modem Connection..... 5
 Indicators..... 6
FCC Compliance Note..... 8
Technical/Product Assistance and General Inquiries..... 8
Product Specifications..... 9

Product Description

Westell's ADSL modem uses your existing phone line to provide reliable, high-speed, Internet access for your home or office. With the ADSL modem, your existing phone line becomes a dedicated, high-speed connection that ends the hassles of dial-up modems and busy signals.

Westell's ADSL modem is capable of downstream data rates of 8 Mbps and upstream rates of 800 kbps, making the ADSL modem up to 280 times faster than a 28.8 analog modem. Unlike traditional analog modems, Westell's Ethernet ADSL modem allows you to use the same phone line for voice/fax communications and high-speed Internet access simultaneously, eliminating the need for separate phone lines for voice and data needs. The ADSL modem is "plug-and-play" and requires no user configuration.

Home or office Installation can be done in two easy steps:

1. Connect the ADSL modem to an Ethernet-equipped PC or office LAN
2. Connect the ADSL modem to an ADSL-equipped phone line from your service provider.

The ADSL modem is “future-proof” because it allows you to download software upgrades. New applications, such as routing functions, can be downloaded to the ADSL modem, transforming the modem from a Ethernet bridging device to an ADSL Router for multiple Point-to-Point Protocol (PPP) destinations and users, without the need for new, expensive hardware.

Westell’s ADSL modem can share the existing phone line by using an optional external POTS splitter (Westell Model 36PR100, or equivalent) to separate the voice signal from the ADSL signal. A POTS splitter is not required for those applications that provide a dedicated line for ADSL use only.

Part Number	CLEI
36R515	VAHMHYPHAA
36R516	VAHMHY0HAA

The only difference between the R515 and R516 is the markings on the unit.

Compatibility

The ADSL modem is compatible with the Alcatel ASAM 1000.

Unpacking/Inspection

Upon receipt, thoroughly inspect the ADSL modem for damage. If the ADSL modem has been damaged during transit, report the damage immediately to the Transportation Company and to Westell Customer Support. The transportation carrier assures responsibility for safe delivery of goods. Refer to *Technical/Product Assistance* for further information.

Remove the ADSL Modem from the shipping box and verify the contents for the items listed below:

A99-36R51xA

A90-36R51x (x = 5 and 6) – 10BaseT ADSL modem
A90-602408 – Power Supply

The following cables may be needed but are not supplied:

- 10BaseT cable with RJ45 connectors for PC to ADSL modem connection
- 10BaseT crossover cable for with RJ45 connectors for Ethernet hub to ADSL modem connection
- 2/4/6/8 wire modular cable for phone line to ADSL modem connection

Installation

Safety

Before installing any equipment, ensure that these safety precautions are followed:

1. Never install any telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.
5. When installed, this equipment is to be used behind devices that provide primary lightning protection.

Installation Criteria

Will operate up to 300 feet (91.4 M) from ADSL modem to computer over 100-Ohm, Cat. 5 cable.

Connectors

On the side panel, the ADSL modem has a Power ON/OFF switch, Power connector, DSL LINE connector, and ETHERNET connector for customer terminal equipment.

Figure 1 shows a side view of the ADSL modem and Table 2 provides additional connector information. Table 3 lists LINE pinouts and Table 4 provides ETHERNET pinouts.

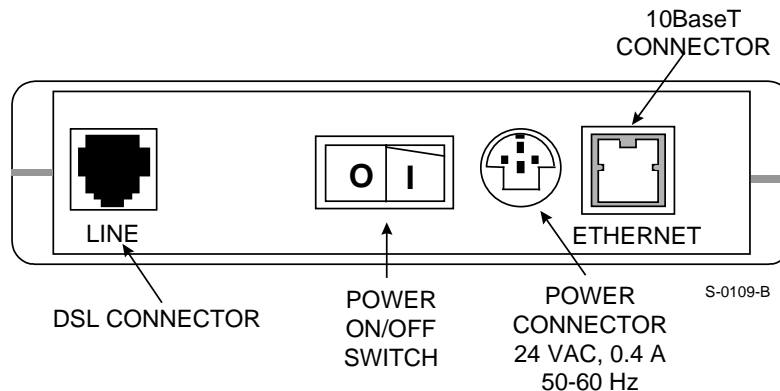


Figure 1. Ethernet ADSL Modem (Side View)

Table 2. ADSL Modem Connectors

Connector Name	Connector Type	Description
POWER	3-pin Mini DIN connector	Connection to the power transformer
LINE	8-pin modular jack	Connect to a telephone jack or POTS splitter
ETHERNET	8-pin RJ45 jack	Connect to PC or Ethernet hub

The LINE connector is designed to operate with either a 6-pin or 8-pin standard modular jack.

Table 3. Pinouts for LINE Connector

LINE Pinouts	
Pin #	
1	Not Used
2	Not Used
3	Not Used
4	DSL Tip
5	DSL Ring
6	Not Used
7	Not Used
8	Not Used

Table 4. Pinouts for ETHERNET Connector

ETHERNET Pinouts	
Pin #	
1	Rx+
2	Rx-
3	Tx+
4	Not Used
5	Not Used
6	Tx-
7	Not Used
8	Not Used

Installing on Hollow, Drywall Surfaces (Optional)

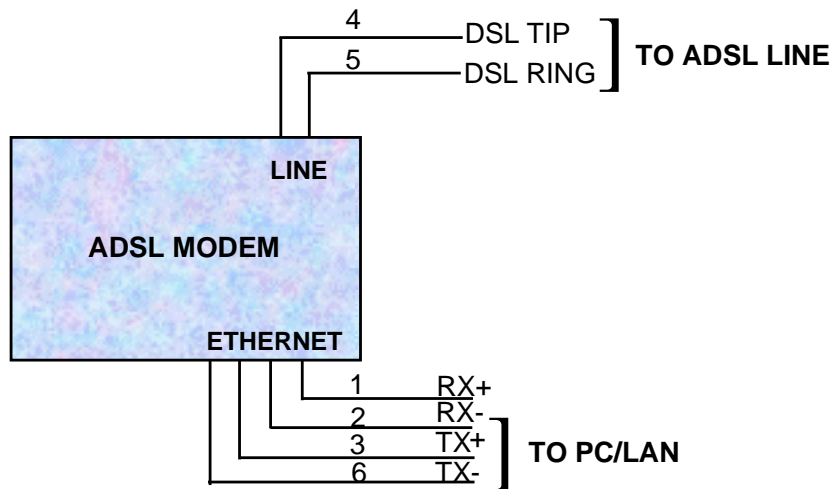
To mount the ADSL modem to a wall, use the following procedure:

1. Obtain two pan head screws (one #8 and one #6) and two #4 - #8 wall anchors (not provided).
2. Place the ADSL modem against the wall where it is to be mounted, and note and mark the upper keyhole slot and screw location.
3. Drill a 3/16" hole for the upper anchor. Insert the anchor until it is flush with the wall surface. Turn the larger (#8) screw until the face of the screw is approximately 3/16" from the wall.
4. Test fit the remote on the screw, and adjust the screw depth for a sliding fit.

5. With a pencil, mark the opening in the lower mounting tab mark on the wall. Remove the ADSL modem from the wall.
6. Drill a 3/16" hole for the lower anchor and insert anchor. Hang the remote on the upper screw.
7. Insert the smaller (#6) screw through the hole in the lower mounting tab into the lower anchor.
8. Tighten the lower screw lightly with a screwdriver. Do not overtighten.

Wiring

Figure 2 shows a wiring diagram.



S-0191-A

Figure 2. ADSL Modem Wiring Diagram

Modem Connection

NOTE

Refer to Indicators Paragraph for a description of the LEDs.

1. Connect the power supply to the power connector on the side of the ADSL modem and then plug it into the wall power receptacle.
2. Connect a standard 6-pin or 8-pin telephone cable from the LINE connector on the side of the ADSL modem to a POTS splitter (refer to POTS splitter data sheet for instructions [030-101144]) or to the network jack if POTS service is not provided.
3. Connect the 10BaseT cable from the ETHERNET connector on the side of the ADSL modem to the interface on the CPE equipment (for example, the Ethernet card in the PC).

A crossover cable may be required when connecting to other equipment, such as an Ethernet hub.

4. Turn the power switch ON. The Power LED lights steady.
5. Observing the Ready LED, ensure that the power self-test completes successfully, and that the ADSL modem is synchronized with the ADSL line card at the other end of the circuit. It may take up to 70 seconds for the ADSL modem to synchronize with the ADSL line card. The Ready LED lights a solid green to show that the unit is synchronized.
6. Verify proper wiring to the CPE by steady illumination of the Link LED.
7. During use, the Activity LED illuminates whenever data is being transmitted or received at the Ethernet interface.

Indicators

Figure 3 shows a front view of the Ethernet ADSL modem.

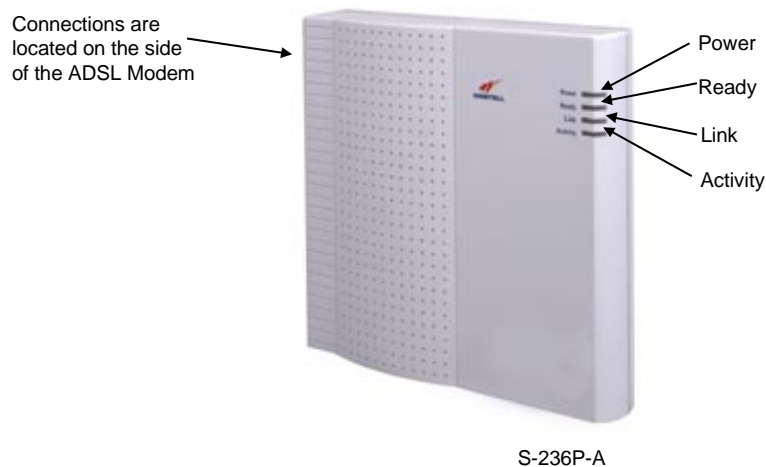


Figure 3. Ethernet ADSL Modem (Front)

The Ethernet ADSL modem has four LEDs on the front panel show the status of the ADSL modem. The green Power LED and the two-color (red and green) Ready LED are used to give an indication of the status of the unit and the network DSL connection. The green Link LED indicates that the 10BaseT link between the ADSL Modem and the CPE is established and the yellow Activity LED indicates whether transmit or receive data is present at the 10BaseT connection.

The LEDs have the following states:

Power

State	Description
Solid Green	Power ON
No Light	No power

Ready

State	Description
Flashing Green	Power ON and attempting synchronization
Solid Green	Power ON and synchronized with an ADSL line card
Solid Green/ Intermittent Red	Power is ON and synchronized with ADSL line card, but a line error exists
Solid Red or Blinking Red	Unit diagnostic failed
No Light	No power

Link

State	Description
Solid Green	Link established
No Light	No 10BaseT link

Activity

State	Description
Pulsing Yellow	Data being transmitted
No Light	No data on Ethernet interface

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 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.*

Technical/Product Assistance and General Inquiries

Product Return

For equipment return, contact:

Westell Customer Support

Phone: 1-630-375-4500

Fax: 1-630-375-4931

Address:

750 North Commons Drive
Aurora, Illinois 60504

6.2 Inspection

DO NOT return damaged merchandise to Westell until you have first obtained a Return Material Authorization from Westell. For return of material, contact your Westell Customer Support representative

Product Specifications

DIMENSIONS

7.5 in (19 cm) x 7.78 in (19.76 cm) x 1.9 in (4.82 cm)

WEIGHT

Approx. 2.3 lbs (1.04 kg) with power supply

ENVIRONMENTAL

Ambient Operating Temperature – +32 to +113°F (0 to +45°C)
Relative Humidity – 5 to 95%, non-condensing

POWER SUPPLY

120 VAC (±10%) wall mount power supply

POWER CONSUMPTION

Less than 10 watts typical from 120 VAC

CONNECTORS

POWER – 3-pin Mini DIN connector
LINE – 8-pin modular jack
ETHERNET – 8-pin modular jack RJ45

ETHERNET CONNECTOR PINOUT

RJ45 that carries Receive data on Pins 1 and 2, and Transmit data on Pins 3 and 6

ETHERNET INTERFACE

10BaseT network connection.

LINE CONNECTOR PINOUT

The LINE connector is an 8-pin modular ADSL and POTS (if equipped) that carries signals on Pins 4 and 5.

DSL (Alcatel Interoperable)

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

POTS FILTER

An external POTS filter is required (if POTS service is used on the same line)

EMC/EMI/ESD

FCC Part 15, Class B
EN55022, Class B
EN50082-1

SAFETY

UL 1950, 3rd Edition
cUL 950
EN60950

REGULATORY APPROVAL

CE (Europe)
UL (US)