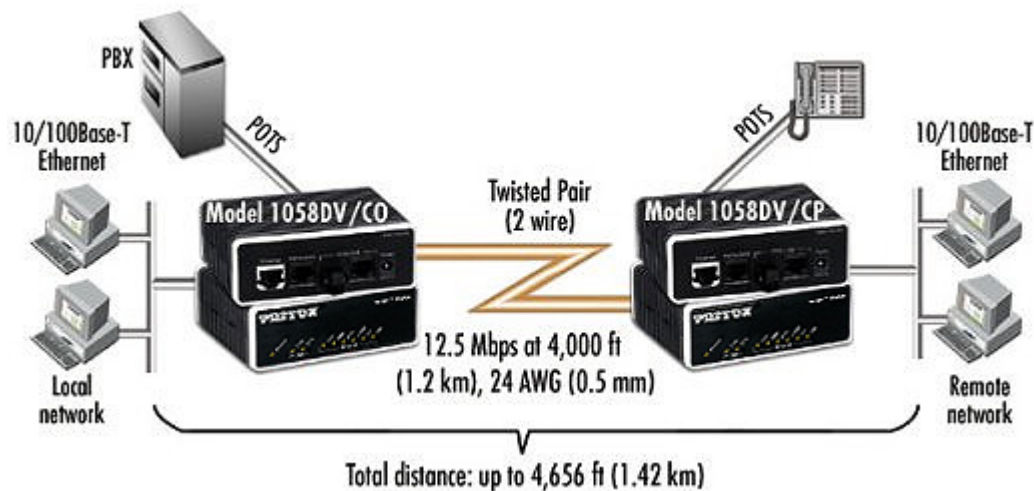


Applications

What is the primary application for the Model 1058, 12.5 Mbps VDSL Ethernet Extender?

LAN Extension & Service Integration

Used in pairs, the Model 1058 establishes a high-speed, line sharing, symmetrical 12.5 Mbps voice and data link. The Model 1058 inter-connects two geographically separated LANs over a voice-grade twisted pair wire. Operation is simple: packets destined for the remote LAN are sent transparently, at full line rate, to the peered LAN. The Model 1058DV's built-in POTS/ISDN splitter allows users to simultaneously talk on the phone while surfing the WWW, downloading files, or receiving emails.

Other Applications include:

- MTU/MDU Internet Services
- Network Backbones
- Remote Workstations and Equipment
- ISP Last Mile Extension

Product Related Questions**How is the VDSL connection established?**

Four steps are required to establish a communications link between the two Model 1058 Ethernet Extenders (CO and CP) and the respective network devices.

- 1) Connect the 10/100Base-TX devices to the Ethernet port of each 1058 unit.
- 2) Connect the POTS/ISDN device to the POTS/ISDN port of each 1058 unit (1058DV only)
- 3) Connect each end of the twisted-pair wire to the Link port of each 1058 unit.
- 4) Plug the 1058 power supplies into a suitable power source.
- 5) Plug the output jack of each power supply to the rear power jack of each 1058 unit.

Once powered up, a communications link is established between the two 1058 units and the VDSL LED on each 1058 unit will glow solid green.

Does the Model 1058 include any management capabilities or test modes?

No, the Model 1058 does not have any management capabilities or test modes. However, it does feature seven status LED indicators to provide operational status at a glance and assist with troubleshooting.

Why does the Model 1058 VDSL QOL/error light occasionally flash?

When the QOL/"error" LED flashes it signifies that error correction is taking place and data integrity is maintained. It is possible for the error light to be constantly lit and the link will still function with data intact. However, when the QOL/Error LED is continuously lit, the 1058's are approaching their maximum distance capabilities under the current environment and line rate. When the QOL is constantly lit, we recommend switching the modem to a lower line rate to ensure the most reliable connection.

What are the distance limitations of the Model 1058 using different gauge wires?

Using 24 AWG (0.5 mm) wire, the Model 1058 is capable of providing Ethernet extensions up to 4,656 ft (1.42 km) including the potential 328 ft (100 m) Ethernet connections on both ends of the communications link. Using 26 AWG (0.4 mm) wire, the Model 1058 is capable of providing Ethernet extensions up to 3,856 ft (1.18 km). Actual distance and link performance will vary based on the environment (cross talk/noise) and type/gauge of wire used. The chart below shows an example of how the gauge of wire affects the distance.

Approximate Distances at 12.5 Mbps (Default Setting)	
Wire Gauge: AWG (mm)	Distance: Feet (km)
26 AWG (0.4 mm)	3856' (1.18 km)
24 AWG (0.5 mm)	4656' (1.42 km)
22 AWG (0.64 mm)	5256' (1.60 km)
20 AWG (0.81 mm)	5556' (1.69 km)
18 AWG (1.00 mm)	5756' (1.75 km)
16 AWG (1.29 mm)	5856' (1.78 km)

*NOTE: Distances are based on a minimum to no cross talk environment. This distance table includes the potential 328ft (100 m) Ethernet connections on both ends of the communications link.

Does the Model 1058 operate in pairs?

Yes, the Model 1058 must operate in pairs. For each link, a Central Office (1058DV/CO/E) and Customer Premise (1058DV/CP/E) unit is required. For concentrated applications, the 1058DVRC/CP and 1058DV/CP/E standalone can be used to operate with the VDSL Concentrator (Model 3324).

Which end of the link should the “CO” Central Office unit and “CP” Customer Premise unit be located?

The Model 1058DV/CO and 1058DV/CP should be located according to their descriptions. The 1058DV/CO unit should be placed at the Central Location and the 1058DV/CP should be placed at the Customer Premise (Remote) due to special filtering requirements for each application.

Does the Patton Model 1058 support VLAN?

The Model 1058 will support VLAN (802.1Q) by passing the larger sized packets transparently. The Model 1058 does not have configuration commands to add a VLAN tag to a packet.

Does the Patton Model 1058 pass higher layer protocol such as TCP/IP packets?

Yes, the Model 1058 does pass higher layer protocols such as TCP/IP. The Model 1058 does not read the TCP/IP packets, but will pass the packets on transparently.

Is the Model 1058 capable of bridging?

Yes, the Model 1058 will automatically learn, age, and filter 32 source addresses. Destination addresses of incoming frames are compared with the Source Address in the address table and discarded if an entry exists; otherwise, they are forwarded over the VDSL link.

Can voice and data be used simultaneously?

Yes, voice and data can be used simultaneously.

Will the POTS/ISDN port on the Model 1058DV operate without power?

The built-in POTS/ISDN Splitter is a passive element and does not require power to operate. The POTS/ISDN port is able to provide a “life-line” telephone link provided the physical connection between the CO and CP VDSL modems is still intact.

Ethernet (10 or 100Base-T) Interface

What devices typically connect to the Ethernet 10/100Base-TX port?

Devices that typically connect to the Ethernet port are Ethernet Hubs/Switches, Remote PC's, and any other network enabled device.

How is the Ethernet port configured to accept 10 or 100Base-TX?

The Ethernet port automatically senses 10 or 100Base-TX Ethernet connections.

Does the Ethernet port require configuration for full or half-duplex connections?

The Model 1058 will automatically sense full or half-duplex Ethernet connections. To fully utilize the 100Base-TX Full-Duplex feature, your network enabled devices must support 802.3x flow control (pause packets). A switch setting is provided on the Model 1058 to transparently lock out the 100Base-TX full duplex communication if your network enabled devices do not support 802.3x flow control (pause packets). This feature will only allow Ethernet connections in 10Base-T full/half duplex or 100Base-TX half duplex and transparently avoid the 802.3x issue without degrading link performance.

Do I use straight-through or crossover cables?

The 1058 is equipped with an MDI-X switch that enables automatic connections to a hub (DCE) or PC (DTE) interface, thereby eliminating confusion over whether a straight-through or crossover cable is needed. The Ethernet port will automatically sense the required connection type.

Power Supply

What are the power supply options for the Model 1058's?

The Model 1058's come standard with an external 120VAC or UI (100-240VAC) power supply. -48, -24, or -12VDC power supplies are optional and ordered separately.

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