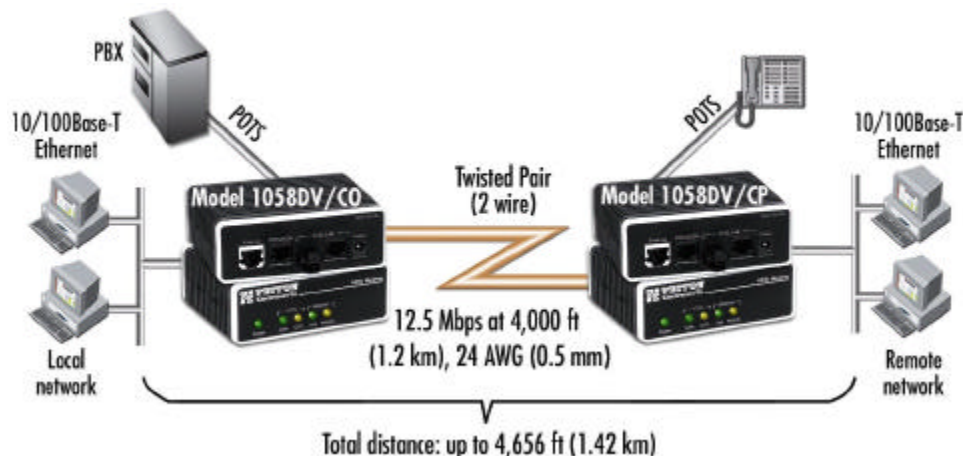


## Applications

What are the primary applications for the Model 1058 VDSL Modem?



### LAN Extension & Service Integration

Used in pairs (Central Office and Customer Premise), the Model 1058 establishes a high-speed, line sharing, symmetrical 12.5 Mbps voice and data link. The Model 1058 interconnects 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 splitter allows users to simultaneously talk on the phone while surfing the web, downloading files or receiving e-mails.

Other Applications include:

- MTU/MDU Integrated Services (Voice and Data)
- Network Backbones
- Hybrid Copper-Fiber Infrastructure
  - Fiber To The Closet/VDSL to the desktop
  - Fiber To The Curb (FTTC)/VDSL to the home
- Remote Workstations and Equipment
- ISP Last Mile Extension
- Remote Medical Imaging

## Product Related Questions

### What is VDSL?

VDSL technology (Very high bit-rate Digital Subscriber Line) allows for the simultaneous transmission of voice, data, and video on existing voice-grade copper wires. VDSL is the fastest DSL technology currently available. Depending on the intended applications, VDSL can be set to run symmetrically or asymmetrically. VDSL's high bandwidth allows for applications such as high-definition television, video-on-demand (VOD), high quality video conferencing, medical imaging, fast Internet access, and regular voice telephone services all over a single voice-grade twisted pair. Achievable VDSL distances vary based on data rate, gauge/type of wire, and noise/cross talk environment.

### How is the VDSL connection established?

Five steps are required to establish a communications link between the two Model 1058 VDSL Modems (Central Office and Customer Premise) and the respective network devices.

- 1) Connect the 10/100Base-T 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 VDSL 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 Link 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 five 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, 1058's are approaching their maximum distance capabilities under the current environment.

**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.

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 (1.0 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.

**Can the line rate be altered on the Model 1058 to achieve lower bandwidths and/or longer distances?**

No, the line rate is factory configured at 12.5Mbps. Please inquire for special factory configurations.

**Can the Model 1058 be configured for symmetrical or asymmetrical transmission from the field?**

No, the Model 1058 is factory configured for symmetrical transmission only. Please inquire for asymmetrical versions.

**Does the Model 1058 operate in pairs?**

Yes, the Model 1058 must operate in pairs. For each link, a Central Office (1058D/CO or 1058DV/CO) and Customer Premise (1058D/CP or 1058DV/CP) unit is required.

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

The Model 1058D/CO or 1058DV/CO and 1058D/CP or 1058DV/CP should be located according to their descriptions. The CO should be placed at the Central Office and the CP should be placed at the Customer Premise due to special filtering for each application.

**Does the Patton Model 1058 support VLAN or WLAN?**

The Model 1058 does not support WLAN (802.11). 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 (1058DV only) 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-T 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-T?**

There is absolutely no configuration necessary. The Ethernet port automatically senses 10 or 100Base-T 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.

## 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.

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