



# CopperLink™ Ethernet Extender

## Patton Model 2168A

Overcome the distance limitations of Ethernet with the Patton Model 2168A CopperLink Ethernet Extender and provide up to 16.67 Mbps of Ethernet extension over a single twisted-pair of voice-grade wire.

### Ethernet Extension

Extends 10/100 Base-T Ethernet distances 1 mile using 2-wire 24 AWG unconditioned lines

### Seamlessly Connect and Extend the LAN

802.3 10/100Base-T LAN connection via built-in shielded RJ-45 port

### CopperLink 2-Wire Connection

Easy 2-wire CopperLink connection via built-in RJ-45 port or terminal block

### Switch Selectable

Asymmetrical or Symmetrical line rates up to 16.67 Mbps!

### Auto-sensing Full-Duplex Ethernet

Auto 10 or 100Base-T and full or half-duplex Ethernet operational

### Transparent LAN Bridging

Passes higher layer protocols and supports 802.1Q VLAN tagging

### Automatic Learning, Aging, and Filtering

Only allows packets with addresses outside the LAN to be forwarded

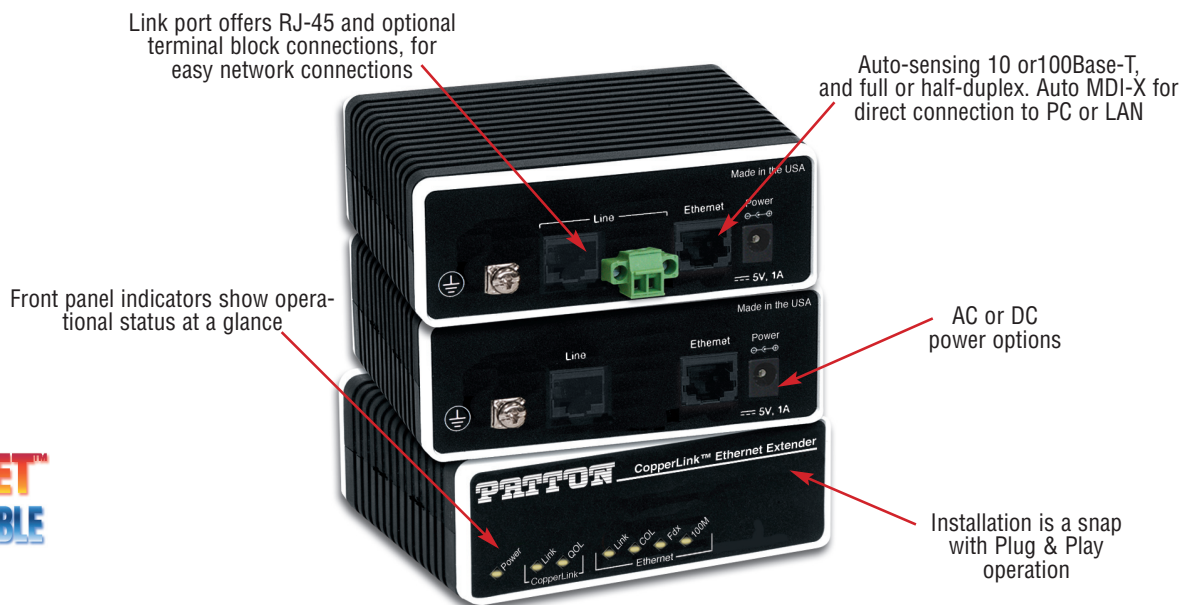
The Patton Model 2168A Multi-Rate CopperLink Ethernet Extender enables the utilization of existing copper infrastructure for high speed Ethernet extensions at data rates up to 16.67 Mbps. The 2168A includes asymmetrical and symmetrical settings for increasing the distance or speed of the Ethernet connections.

CopperLink applications include Ethernet extension, medical imaging, video-conferencing, and inter-connecting remote devices or remote networks to a central LAN. The multi-rate symmetrical line rates ensure the highest possible data rate is achieved over various lengths and types of copper wire and environments. Multi-rate asymmetrical line rates make the Model 2168A the ideal

solution for service providers who want to differentiate their services or extend the reach of their customer base. The Model 2168A allows service providers to offer unparalleled performance for such applications as always on Internet access, real-time bi-directional video streaming, and various multimedia applications.

If you want to take your network and voice connections farther and faster over existing copper and eliminate the expense of fiber, Patton's CopperLink Ethernet Extenders are the products for you! Just plug, power, and play!

Visit [www.patton.com](http://www.patton.com) for more information.



## Workgroup Ethernet extension application



### Ethernet Extender allows copper instead of fiber for vertical Ethernet spans!

These multi-rate Ethernet Extenders are ideal for bridging Ethernet spans inside buildings that are beyond the 328-foot (100-meter) distance limit of Ethernet.

For example, connecting workgroups located on different floors in a building no longer requires expensive switches or the installation of low capacitance cable.

#### Asymmetrical Line Rates

Line Rates		Distance in ft (m)
Upstream (Mbps)	Downstream (Mbps)	
1.56	4.17	6,000 (1,829)
1.56	9.38	5,500 (1,676)
2.34	16.67	5,000 (1,524)

#### Symmetrical Line Rates

Line Rates		Distance in ft (m)
Upstream (Mbps)	Downstream (Mbps)	
6.25	6.25	4,500 (1,372)
9.38	9.38	4,150 (1,265)
12.50	12.50	4,000 (1,220)
16.67	16.67	3,300 (1,006)

## Specifications

### CopperLink Line Interface

RJ-45 (pin 4 = ring; pin 5 = tip) and two-position removable terminal block (supports 19-26 AWG or 0.9-0.4 mm wire)

### Ethernet Interface

8-position shielded RJ-45. Auto-sensing 10/100Base-T with half or full-duplex operation. DIP switch capable of disabling 100-Mbps full-duplex for equipment that does not support 802.3X (Pause Packets)

### Protocol

Transparent to high layer protocol. Supports 802.1Q VLAN tagging

### Modulation

(Quadrature Amplitude Modulation) QAM 4-band

### Duplexing Method

FDD (Frequency Division Duplexing)

### Frequency Range

CopperLink:1-8 MHz

### Transmission

CopperLink line rate: Up to 16.67 Mbps; Data rate: Up to 15 Mbps full-duplex

### Surge Suppression

CopperLink line maximum current surge: 20kA (8/20 $\mu$ s) gas tube

### Front Panel Indicators

Power, CopperLink and QOL (quality of link), Ethernet Link and Activity Status

### Dimensions

1.5H x 4.13W x 3.75D in. (3.81H x 10.5W x 9.53D cm)

### Weight

0.4 lbs (0.18 kg) without power supply

### Power

External AC and DC options: 120VAC, and universal input (UI)—100–240 VAC, or optional -48 VDC, -24 VDC, or -12 VDC

### Environment

Temperature: 32–122°F ( 0–50°C)  
Humidity: Up to 90% non-condensing

### Compliance

FCC Part 15A, CE Mark, EMC Directive 89/336/EEC, Low-Voltage Directive 73/23/EEC

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