

# CopperLink™ Ruggedized Multi-Drop Ethernet Extender & Repeater

## CopperLink Model 1314MDE



Use the CopperLink 1314MDE Multi-Drop Ethernet Extender to interconnect and daisy chain multiple remote networks and network enabled devices over 6 miles or more apart using single-twisted-pair cabling.

### High Speed Extension

Achieve up to 15.3 Mbps over 1 (2-wire) pair or 30 Mbps over 2 (4-wire) pairs.

### Flexible Uses

Use as a long-distance Ethernet extender (repeater) and/or in Multi-Drop Ethernet applications

### Multi-rate Selection

Just plug the units in and select the ideal user-configurable rate for your application.

### Extended Temperature

-40 to 85°C operation.

### Ruggedized

Operating temperature of -40 to 85°C and optional conformal coating to protect against condensing humidity and corrosion

### Transparent LAN Bridging

Transparently pass higher-layer protocols with support for 802.1Q VLAN tagging.

### Automatic Learning, Aging, and Filtering

Keeps local traffic local, ensuring efficient utilization of the long-range link.

### Made in the USA

This Patton equipment is designed by Patton engineers and built in our Gaithersburg, Maryland facility.

The CL1314MDE Multi-Drop Ethernet Extender used in conjunction with the CL1314R makes Ethernet extension a breeze. The MDE series of Ethernet Extenders allows users to replace their legacy serial coms with cost-effective Ethernet (IP) that is easy and inexpensive to set up. Featuring plug-and-play installation, the CL1314 MDE leverages existing copper twisted-pair infrastructure to interconnect Ethernet devices and networks at moderate speeds over long distances. The MDE Extender not only allows multi-drop functionality but also serves a repeater function doubling your maximum distance at every hop.

Operating over standard 0.5 mm (24 AWG) voice-grade wiring, the CL1314MDE delivers speeds up to 15.3 Mbps and extends Ethernet connections across distances up to 10 km (6.2 miles) per hop. Whether you need connect to a remote offices, kiosks, guard stations, train stations, digital sensors or IP cameras—Patton Ethernet Extenders offer the industry's optimum combination of speed and distance. Patton's CopperLink Ethernet Extenders ensure hassle-free set-up and operation, while

achieving the highest possible line rate for the required distance and electromagnetic environment. Users can "hard-set" the desired line rate via DIP switch, GUI or console Telnet.



Operating at layer 2 of the OSI model (data link layer), the CL1314MDE transparently passes all higher-layer protocols—including VLAN tagging, multi-cast addressing, VPN pass-through for IPsec, and all IP-video compression schemes. All common industrial protocols are also transparently supported, including MODBUS/TCP and PROFINET IO.

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

Chart based on 24 AWG (.5mm) one cable pair

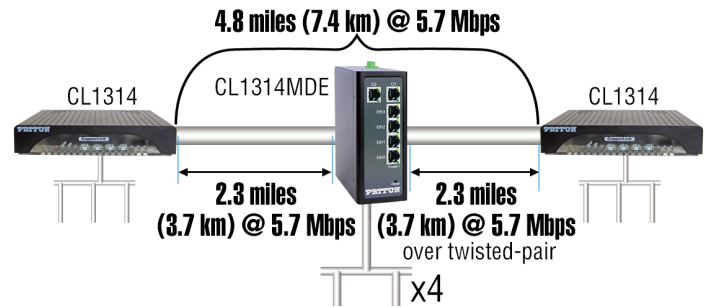
Line Rate	K Feet	Miles	km
192K	33972	6.4	10.4
512K	33188	6.3	10.1
1024K	29453	5.6	9.0
2048K	23332	4.4	7.1
4096K	16093	3.0	4.9
5696K	12098	2.3	3.7
8192K	9710	1.8	3.0
15296K	3844	0.7	1.2

# CopperLink™ 1314MDE Ruggedized Ethernet Extender

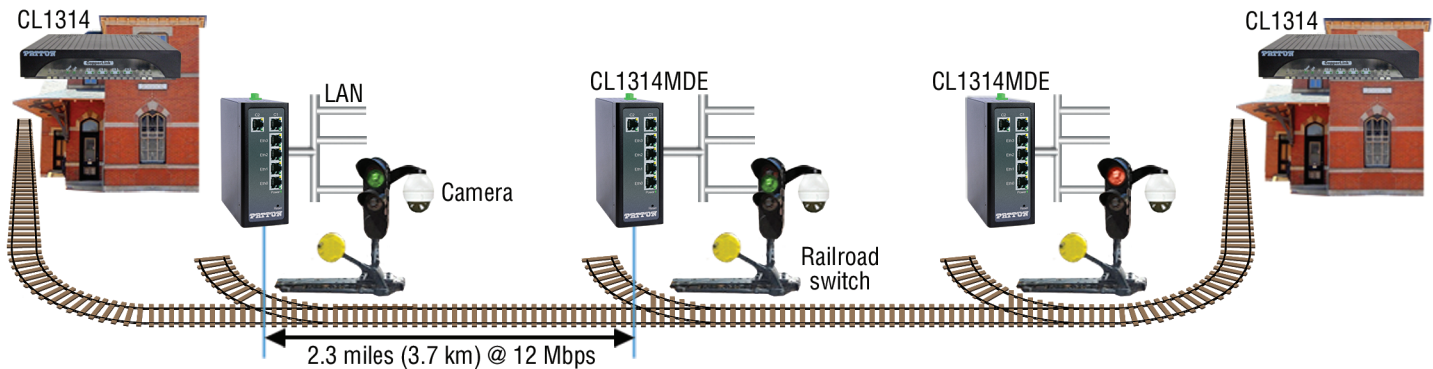
## Typical Applications

Model CL1314MDE ruggedized multi-drop Ethernet extenders are ideal for delivering drop add Ethernet links to multiple remote locations that are beyond the 328-foot (100-meter) distance limit of Ethernet. The 15.3 Mbps throughput eliminates bandwidth concerns previously experienced with other legacy copper wired transmission technologies.

The CL1314MDE includes several user configurable line rates so that a user will get a consistent link, even in noisiest environments. Using existing voice-grade copper pairs or legacy serial circuits eliminates the expense and hassle of installing low capacitance or fiber cable.



### Transit App



## Specifications\*

### Transmission Line

1 (2-wire) pair or 2 (4-wire) pairs

### Line Rates

Rates from 192 kbps to 15.3 Mbps, selectable in all 64 kbps increments up to 15.3 Mbps

### Front Panel LED Status Indicators

WAN: Link, LAN (Ethernet): Link/Act, Power

### Line Coding

TC-PAM 16 for rates of 192 kbps to 2.3 Mbps • TC-PAM 32 for rates above 2.3 Mbps • TC-PAM 64 for rates above

5.7 Mbps • TC-PAM 128 for rates above 11 Mbps

### Connectors

2 x RJ-45 on copper line side and 4 x 10/100 Ethernet

### Line Interface

Transformer coupled, 1500 VAC isolation

### Management

DIP switch • HTTP • NTP • SNMPv3 • SYSLOG Client • CLI (Telnet, SSH, Console Port) • TFTP firmware upgrade • Import/export config

### Ethernet Protocols

Transparent bridging (IEEE 802.1D) • VLAN based QOS

(802.1P/Q) • ARP • DHCP Client/Server • STP • DNS Server/Relay

### MTBF

4.7 years

### Power

**External:** 90–260 VAC, 50–60 Hz (Universal Input) via Terminal Block

**Internal:** +12 to +48 VDC (optional)

### Operating Temp.

-40 to 185°F (-40 to 85°C)

### Humidity

5 to 95%, non-condensing (CC option 85% condensing)

### Altitude

0 to 15,000 ft (0 to 4,600 m)

### Enclosure

Aluminum (designed to meet IP40)

### Dimensions

2.25W x 5.62H x 4.66D in. (5.7W x 14.27H x 11.83D mm)  
PCB: 4 X 4.9 in. (10.6 x 12.4 cm)

### Weight

0.7 lbs (0.30 kg)

### Compliance

FCC Part 15A • CE Mark per EMC directive 89/336/EEC • Low Voltage Directive 73/23/EEC



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