



# CopperLink™ Ruggedized High Speed Ethernet Extender Model 2173R

Patton's 2173R extends Ethernet connections at distances up to 4,250 feet over already existing serial infrastructure cabling

### Operates Over Twisted Pair

Reduces the cost and hassles of new installations. Utilizes installed voice-grade twisted pairs to eliminate the expense of fiber or Cat5e cabling.

### Plug and Play

No configuration or cable hassles during installation with auto-sensing 10/100, full or half duplex, and auto MDI-X Ethernet ports.

### Full-duplex data-line rate of 155 Mbps

Provides near fiber performance for bandwidth intensive applications

### Ruggedized

Operating temperature of -40 to 85°C

### Flexible installation

Wall-mount ready and an optional DIN rail mounting kit is available

The Patton Model 2173R utilizes pre-existing twisted pair infrastructure enabling twisted pair previously used for legacy systems such as TTL, RS232 and 422/485 to be used for extending networks or connecting Ethernet devices together. With a pair of 2173Rs or combined with a desktop-style 2173, twisted pair can carry an extraordinary bandwidth of 155 Mbps full-duplex (upstream plus downstream). Reusing the already existing infrastructure for Ethernet

Networking eliminates the cost of purchasing expensive fiber and Cat5E or greater cabling. Most important, it avoids the downtime and hassles that installing cable would cause.

The 2173R operates in rugged environments where temperatures range from -40 to 85°C. The 2173R's sturdy aluminum case can be quickly mounted on a wall or DIN rail (with optional DIN rail kit).

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

## CopperLink™ Copper Ethernet Extenders

| # of Ethernet Ports | # of wire pairs | Max. Speed            | Distance at Max. Speed | Model |
|---------------------|-----------------|-----------------------|------------------------|-------|
| 2                   | CAT5            | 10/100 Base-TX        | 328 ft per Model 2110  | 2110  |
| 2                   | 1               | 155 Mbps asymmetrical | 5,500 ft               | 2173  |
| 4                   | 4               | 45.6 Mbps             | 4,600 ft               | 2162  |
| 4                   | 2               | 22.8 Mbps             | 4,600 ft               | 2161  |
| 2                   | 1               | 15 Mbps               | 4,250 ft               | 2151  |
| 4                   | 1               | 11.4 Mbps             | 4,600 ft               | 2160  |
| 2                   | 1               | 10 Mbps               | 5,000 ft               | 2150  |
| 1                   | 1               | 4.6 Mbps              | 10,560 ft              | 2157  |
| 1                   | 1               | 2.3 Mbps              | 16,368 ft              | 2156  |

100 Mbps full duplex over one ordinary-grade twisted-pair

Front panel indicators show operational status at a glance

Six asymmetric/symmetrical data rates available via DIP switch



RJ-45 CopperLink port

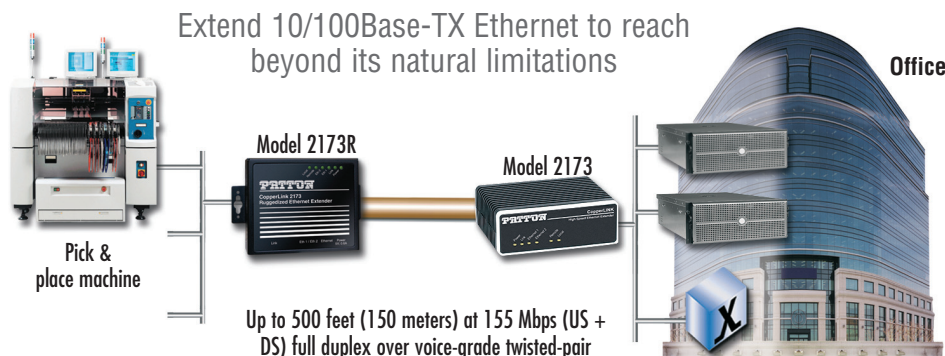
Local/remote DIP switch

Dual auto-sensing 10/100Base-TX, full or half-duplex, and auto MDI-X switch

## Workgroup Ethernet Extension Application

The Model 2173R multi-rate Ethernet Extenders are ideal for delivering Ethernet links to remote buildings that are beyond the 328-foot (100-meter) distance limit of Ethernet. 100 Mbps throughput eliminates bandwidth con-

cerns previously experienced with other copper wired transmission technologies. By utilizing existing voice grade copper pairs the expense and hassle of installing low capacitance or fiber cable is no longer required.



Distance Chart, Based on 24 AWG (0.5 mm)

| Data Rate | Distance in feet (km) | Mode       | Throughput at Max Distance in Mbps |
|-----------|-----------------------|------------|------------------------------------|
| 4/1       | 5,500 ft (1.6 km)     | Fast       | 4.00 (DS)/1.00 (US)                |
| 4/1       | 5,500 ft (1.6 km)     | Interleave | 4.00 (DS)/1.00 (US)                |
| 100/70    | 500 ft (0.15 km)      | Fast       | 83 (DS)/69.5 (US)                  |
| 100/70    | 250 ft (0.07 km)      | Interleave | 83 (DS)/69.5 (US)                  |
| 25/25     | 2,250 ft (0.6 km)     | Interleave | 24.89 (DS)/24.89 (US)              |
| 50/50     | 1,750 ft (0.5 km)     | Fast       | 49.78 (DS)/49.78 (US)              |
| 50/50     | 1,750 ft (0.5 km)     | Interleave | 49.78 (DS)/49.78 (US)              |
| 70/70     | 1,750 ft (0.5 km)     | Fast       | 51 (DS)/51 (US)                    |
| 70/70     | 1,750 ft (0.5 km)     | Interleave | 51 (DS)/51 (US)                    |

**Note:** Distance and link performance may vary depending on the environment and type/gauge of wire used.  
**Note:** DS = downstream, US = upstream

**Sample rates:** These extenders automatically set the highest achievable rate based on the distance and type of cable used.

**EnviroNET™ models also available**

**MAXIMUM +85°C**  
**MINIMUM -40°C**

**Protection from the elements**

## Specifications\*

**CopperLink line interface:** RJ-45 (pin 4 = ring; pin 5 = tip)

**Ethernet interface:** Dual 8-position shielded RJ-45. Auto-sensing 10/100Base-T with half or full-duplex operation.

**Protocol:** Transparent to high layer protocol- Supports 802.1Q VLAN tagged frames. Transparent to IP video

schemes- Fully transparent to compression schemes such as WMV, MPEG-4 and MJPEG

**MTBF:** 193,766 hours

**Modulation:** Discrete Multi-Tone (DMT)

**Frequency Range:** 0–17 MHz

**Transmission:** CopperLink line rate: Up to 155 Mbps (upstream plus downstream)

**Front Panel Indicators:** Power, Link, Ethernet 1 & 2, Remote & Local

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

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

**Temperature:** Standard: -40 to 85°C

**Humidity:** Up to 90% non-condensing

**Dimensions:** 1.12H x 5.57W x 3.57D in. (2.84H x 14.15W x 9.07D cm) with brackets

1.12H x 4.44W x 3.57D in. (2.84H x 11.28W x 9.07D cm) without brackets

**Weight:** 0.4 lbs (0.18 kg) without power supply

\* Specifications subject to change without notice.



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