

# 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.

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

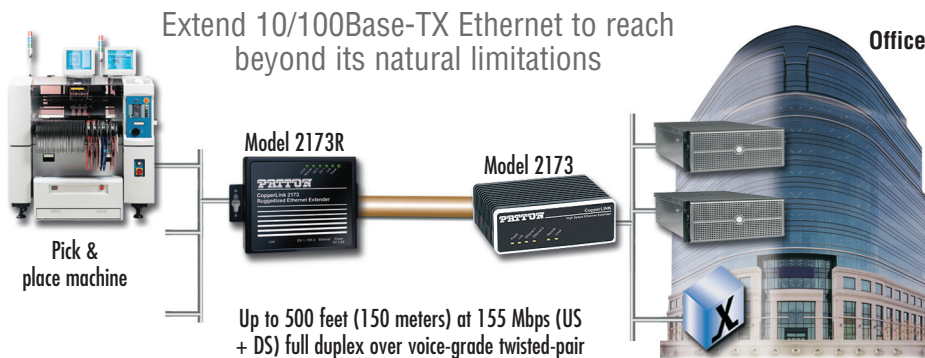
### CopperLink™ Copper Ethernet Extenders

# of Ethernet Ports	# of wire pairs	Max. Speed	Distance at Max. Speed	Model
2	CAT5	10/100 Base-TX	328 ft per 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

## 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.

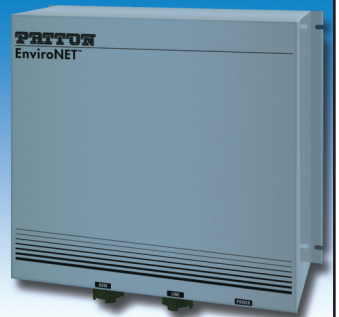
**Note:** DS = downstream, US = upstream

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

EnviroNET™ models also available



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.

**PATTON**  
Let's Connect!

**Patton Electronics Co.**  
7622 Rickenbacker Drive  
Gaithersburg, Maryland 20879  
USA  
Phone +1 301 975 1000  
Fax +1 301 869 9293  
E-mail [sales@patton.com](mailto:sales@patton.com)  
Web [www.patton.com](http://www.patton.com)

**PE-Inalp Networks Private Ltd**  
Old No. 14 and New No.6,  
Brahadambal Road,  
Nungambakkam High Road  
Chennai: 600 034, India  
Phone +91 44 45490395/6/7  
Fax +91 44 4549.0394  
Email [sales@patton.co.in](mailto:sales@patton.co.in)  
Web [www.patton.co.in](http://www.patton.co.in)

**Patton-Inalp Networks AG**  
Meriedweg 7  
CH-3172 Niederwangen  
Switzerland  
Phone +41 (31) 985 25 25  
Fax +41 (31) 985 25 26  
E-mail [sales@inalp.com](mailto:sales@inalp.com)  
Web [www.inalp.com](http://www.inalp.com)

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