CopperLink™ Ethernet Extender

Model 2174

Achieving symmetrical line rates greater than 100 Mbps over single twisted-pair, Cat 5e/6/7 or coaxial cable, Patton's CopperLink™ Model 2174 Ethernet Extender is the fastest CopperLink™ ever.

Ethernet Extension
Extend 10/100Base-TX Ethernet well beyond its 328-foot (100-meter) limitation over a single twisted-pair, Cat 5e/6/7, or even coaxial cable.

Operates Over Twisted Pair
Realize fiber-optic speeds without the expense—and hassle—of installing new cables or line-of-site wireless circuits.

Plug and Play
Set these units up straight out of the box. No configuration is required. Auto-sensing 10/100 Ethernet ports support full or half duplex operation.

Multiple Line Rates Supported
Switch-selectable rate mode options optimize rate and reach for the noise environment, wire gauge/type and length.

Transparent LAN Bridging
Bypass network configuration requirements by transparently passing all higher layer protocols—including 802.1Q VLAN frames (tagged and untagged). Data-transmission mechanism is fully transparent to such IP video compression schemes as MPEG-4, H.264 and MJPEG.

Perfect for bandwidth-intensive applications the Model 2174 delivers off-the-chart symmetrical line rates greater than 100 Mbps. Best of all—like all CopperLink™ products—the Model 2174 leverages existing copper infrastructure to deliver high speed Ethernet connectivity over voice-grade twisted pair, Cat 5e/6/7, and—new to the CopperLink™ line—coaxial cabling.

Four user-selectable configuration profiles—combined with Patton's auto-rate adaptation feature—ensure maximum achievable symmetrical or asymmetrical rates for the installed noise environment, wire gauge/type and length.

Symmetrical line-rate settings are ideal for such applications as remote LAN extension, video teleconferencing, and data backhaul. Asymmetrical configurations are well-suited for applications requiring higher downstream speeds and/or longer distances between Ethernet devices. Typical symmetrical scenarios include medical imaging, livestock monitoring, underwater video, internet gaming, and transporting high-resolution IP video from security cameras.

Realize fiber-like speed and distance without the expense of fiber with Patton's Ultra-High-Speed CopperLink™ Ethernet Extenders.

To view our huge selection of network extension products, please visit www.patton.com.

CopperLink Model 2188 Media Access Concentrator

- ✓ Connect up to 8 Model 2174s and aggregate them to a 100/1000Base-TX Ethernet link
- ✓ Rackmount or desktop installations (1U high; fits into any 19-inch rack)
- ✓ Supports Plug and Play operation or fine-tuned individual connections

Now Available in Coax (2174C)

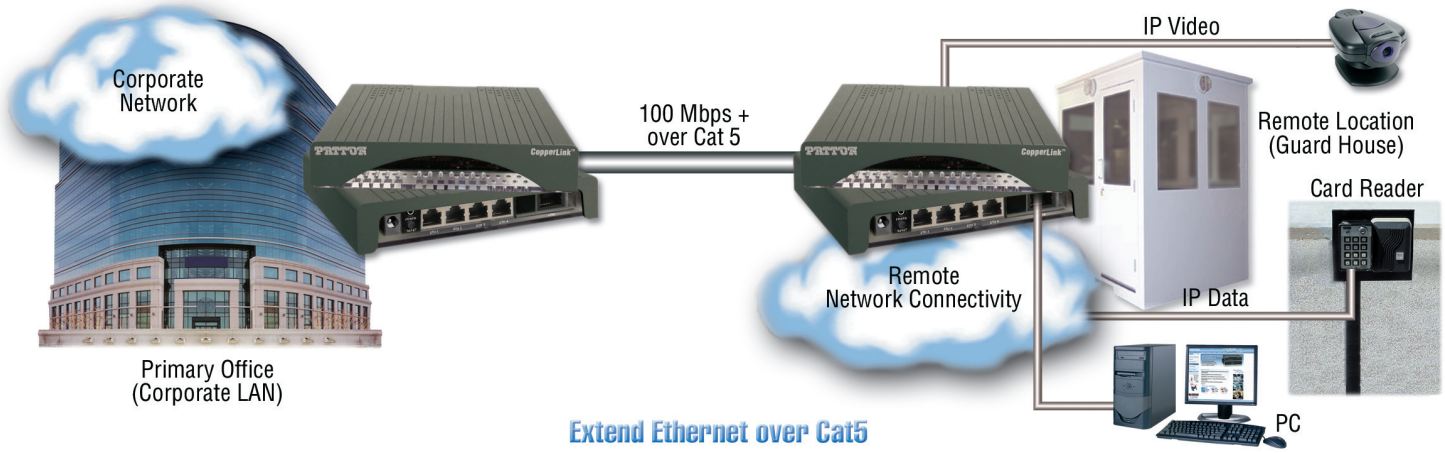
PATTON®

Ethernet Extender Applications

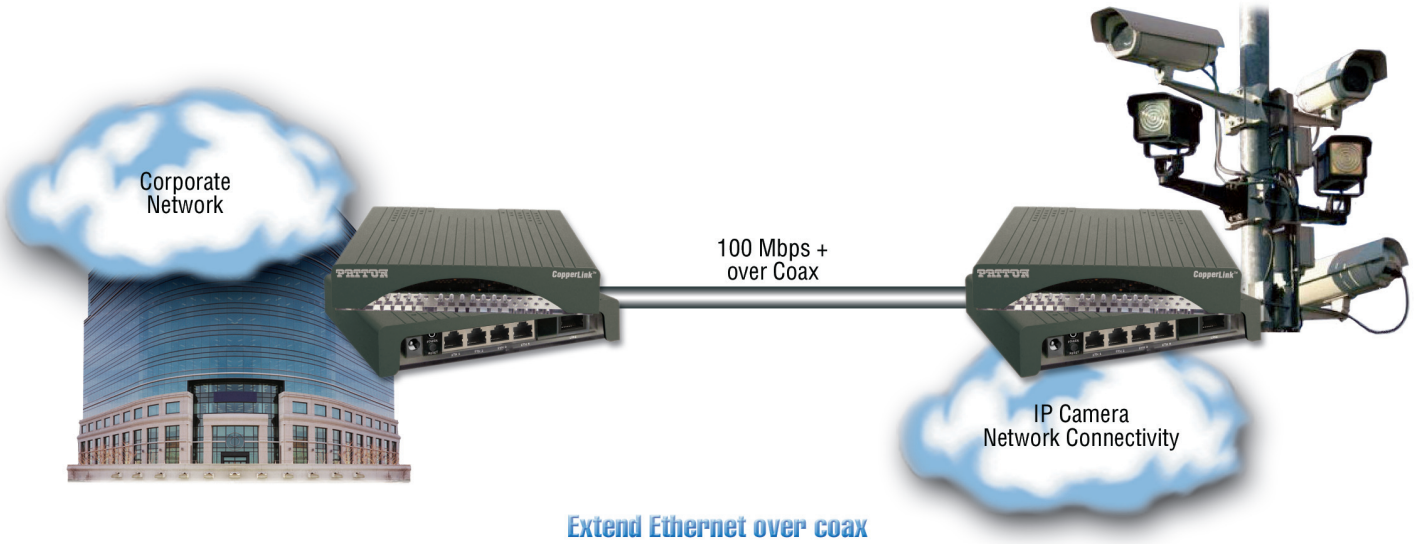
A built-in 4-port Ethernet switch makes the CopperLink Model 2174 ideal for delivering multiple IP information streams over a single cable. For example, at a guardhouse or security kiosk, you could aggregate IP data from a laptop, a motion sensor, and two high resolution IP video cameras for simultaneous transmission over a single Ethernet connection.

Combining data flows from up to four network-enabled devices onto a single twisted pair or coax cable, the Model 2174 can deliver IP traffic up to 4,250 ft (1295 m) away—well beyond the standard 328-foot (100-meter) Ethernet distance limitation.

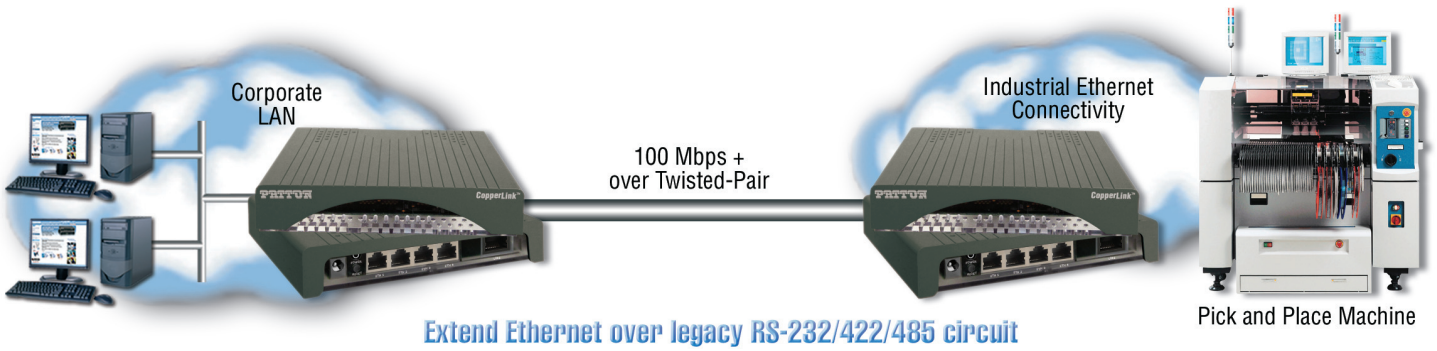
With achievable line rates up to 100 Mbps, the CopperLink 2174 eliminates the bandwidth constraints commonly experienced with other copper-based transmission technologies. The Model 2174 is engineered to re-use existing infrastructure previously employed in legacy applications including alarm circuits, E1/T1 circuits, RS-232, RS-422, RS-485, CCTV and CATV. Many newer cabling standards are also supported, including Cat 5e, Cat 6 and Cat 7.



Extend Ethernet over Cat5



Extend Ethernet over coax



Extend Ethernet over legacy RS-232/422/485 circuit

Specifications: Rate and Reach

Mid-Range Asymmetrical Mode (24 AWG)

Length in feet (meters)	US Data Rate in Mbps	DS Data Rate in Mbps
0	16	74
250	16	71
500	16	68
750	16	69
1000	16	65
1250	15	62
1500	14	59
1750	13	57
2000	11	53
2250	10	48
2500	9	43
2750	7	39
3000	5	35
3250	4	33
3500	2	31
3750	0.74	29
4000	0.73	27
4500	0.69	23
5000	0.68	18
5500	0.63	15
6000	0.55	13
6500	0.49	10
7000	0.45	9
7500	0.40	8
8000	0.44	7
8500	0.41	6
9000	0.37	5
9500	0.35	4
10000	0.26	3

Mid-Range Symmetrical Mode (24 AWG)

Length in feet (meters)	US Data Rate in Mbps	DS Data Rate in Mbps
0	51	75
250	51	74
500	50	73
750	50	72
1000	47	71
1250	43	68
1500	36	64
1750	32	62
2000	24	57
2250	15	54
2500	10	50
2750	8	45
3000	6	39
3250	5	36
3500	3	33
3750	1	30
4000	0.68	29
4500	0.87	24
5000	0.88	18
5500	0.84	15
6000	0.77	12
6500	0.70	10
7000	0.65	8
7500	0.60	7
8000	0.62	6
8500	0.57	5
9000	0.51	4
9500	0.48	3
10000	0.37	3

High Speed Mode (24 AWG)

Length in feet (meters)	US Data Rate in Mbps	DS Data Rate in Mbps
0	50	111
250	50	106
500	49	104
750	49	99
1000	46	91
1250	42	81
1500	36	70
1750	31	63
2000	24	57
2250	15	54
2500	9	50
2750	8	44
3000	6	39
3250	5	36
3500	3	33
3750	1	31
4000	0.88	28
4500	0.87	24
5000	0.88	18
5500	0.84	15
6000	0.77	12
6500	0.71	10
7000	0.66	8
7500	0.59	7
8000	0.62	6
8500	0.56	5
9000	0.51	4
9500	0.47	3
10000	0.37	2

Note: Distance and link performance may vary depending on the environment and type/gauge of wire used.

Very High Speed Mode (24 AWG)

Length in feet (meters)	US Data Rate in Mbps	DS Data Rate in Mbps
0	103	160
250	108	158
500	98	149
750	85	133
1000	64	117
1250	48	98
1500	41	80
1750	36	71
2000	29	62
2250	18	60
2500	10	55
2750	91	49
3000	71	44
3250	57	39
3500	28	35

Note: Distance and link performance may vary depending on the environment and type/gauge of wire used.

Patton CopperLink™ Ethernet Extenders

# of Ethernet ports	# of wire pairs	Max. Speed	Distance at Max. Speed	Operating Temperature	CopperLink™ Model
2	Cat 5 or greater	10/100Base-TX	100 meters per Model 2110	0 to 50 °C	2110
2	1	155 Mbps asymmetrical	152 m	0 to 40 °C	2173
2	1	155 Mbps asymmetrical	152 m	-40 to 85 °C	2173R
4	4	45.6 Mbps	1.4 km	0 to 50 °C	2162
4	2	22.8 Mbps	1.4 km	0 to 50 °C	2161
2	1	15 Mbps	1.2 km	0 to 50 °C	2151
4	1	11.4 Mbps	1.4 km	0 to 50 °C	2160
2	1	10 Mbps	1.5 km	0 to 50 °C	2150
1	1	4.6 Mbps	3.2 km	0 to 50 °C	2157
1	1	4.6 Mbps	3.2 km	-10 to 70 °C	2157R
1	1	2.3 Mbps	5.0 km	0 to 50 °C	2156

ENVIRONET ALSO AVAILABLE

EXTENDED TEMPERATURE
MAX +185°F/+85°C
MIN -40°F/-40°C

ENVIRONMENTALLY CONTROLLED
MAX +185°F/+85°C
MIN +32°F/0°C

ENVIRONMENTALLY HARDENED
MAX +122°F/+50°C
MIN +32°F/0°C

Ruggedized

Weather Proof (NEMA 4)

Weather Resistant (NEMA 3)

Specifications

CopperLink Line Interface
- RJ-45 (pin 4 = ring; pin 5 = tip)
- BNC 75 Ω coax
- Terminal block, 2-position

CopperLink Line Modulation
DMT (Discrete Multi-Tone)

Ethernet Interface (x4)
8-position shielded RJ-45. Auto-sensing 10/100Base-TX with half or full duplex operation.

Protocol
Transparent to high layer protocols: supports 802.1Q VLAN tagged or untagged frames. Transparent to IP Video schemes: fully transparent to such compression schemes as MPEG-4, H.264, and MJPEG.

Ethernet Interface (x4)
8-position shielded RJ-45. Auto-sensing 10/100Base-TX with half or full duplex operation.

Impulse Noise Protection Modes
Selectable fast and interleave modes

Target SNR Modes
6 dB & 9 dB

Management
8-position DIP switch

Monitoring
8 LEDs display Power, Link, Ethernet 1-4, Remote, and Local status.

MTBF
XXXXXXXXXX

Dimensions
1.5 H x 4.13 W x 3.75 D in.
(38.1 H x 105 W x 95.3 D mm)

Power Supply
External AC: 100–240 VAC
External DC: -48, -24, or -12 VDC

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

Environment
Temperature: 0 to 50°C
Extended Temperature: -40 to 85°C
Humidity: 5 to 95%, non-condensing

Dimensions
4.17W x 1.52Hx5.0L in.
(10.6W x3.9H x12.7L cm)

Weight
0.4 lbs (181 g)

07M2174-DS1

PE-Inalp Networks Private Ltd
An Associate of PATTON Electronics Co., USA
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**
Web **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**
Web **www.inalp.com**

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**
Web **www.patton.com**