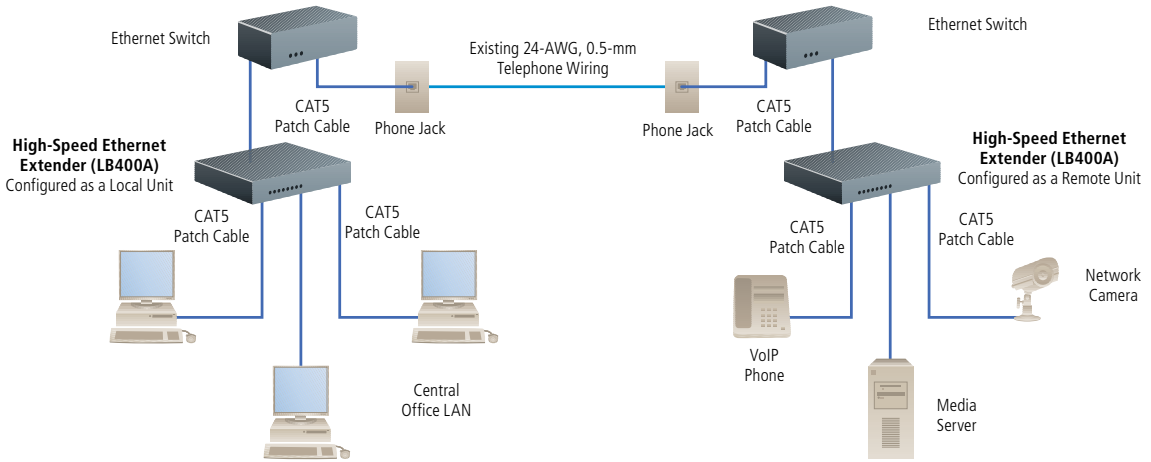
High-Speed Ethernet Extender Kit

Get data throughput of 50 Mbps at 800 feet over ordinary voice-grade wiring!

FEATURES

- Breaks distance and speed barriers—extends a network as far as 6000 feet or achieves 50-Mbps full-duplex speeds over voice-grade wiring.
- Less expensive than using CAT5e or fiber to connect remote Ethernet LANs, PCs, or 10BASE-T/100BASE-T devices.
- Great for bandwidth-intensive applications.
- Easy to configure; DIP-switch controls set line rates.
- Six symmetric or asymmetric settings.
- Includes a pair of extenders that work together to create a transparent extension between two peered LANs.
- Auto MDI-X ports adapt to the type of Ethernet cabling—no crossover cabling required!
- Once configured, operates transparently without any further user intervention.
- Link-side surge suppression.
- Front-panel LEDs indicate activity.

Extend your Ethernet network using your existing infrastructure.



OVERVIEW

Go farther and faster without spending a lot on cabling. With the BLACK BOX® High-Speed Ethernet Extender Kit, use ordinary voice-grade wiring to connect links far beyond the 328-foot (100-m) distance limit of Ethernet.

Depending on the distance between connections, you can achieve even greater speeds, too—as fast as 50 Mbps upstream and downstream over 24-gauge, 0.5-mm cable.

And, in many cases, you can achieve this distance without having to supply additional wiring. By using existing two-wire unconditioned twisted-pair cabling, you can use your legacy wiring infrastructure and eliminate the expense and hassle of having to run new UTP or fiber optic cable.

The kit includes a pair of extender units. Each unit can be configured as either a local or remote unit simply by flipping a switch. They have an RJ-45 port for the interconnection and a shielded RJ-45 port for a LAN link. Because the LAN port has an automatic MDI-X feature, you can connect it to a hub or PC with a straight-through or crossover cable.

Easy to deploy for many demanding applications.

The High-Speed Ethernet Extenders are designed to easily interconnect a central LAN to remote devices or remote networks located at lot farther away.

Use them, for instance, to deliver Ethernet links to peered 10BASE-T/100BASE-TX Ethernet LANs or remote PCs in buildings located beyond the typical 328-foot Ethernet distance limit.

Because they use ordinary voice-grade copper, the extenders give you an easy-to-deploy solution. Connect one to a network-enabled device—whether it's a security camera, a server, or workgroup PC—and simply plug it into a nearby RJ-11 jack to provide the interconnection to your central network. The RJ-45 connector on the extenders' twisted-pair interconnection interface is polarity insensitive and is wired for a two-wire interface.

What's more, their larger throughput provides you with bandwidth greater than that of traditional copper-wired technologies—with performance approximating that of fiber optic technologies. For this reason, they're particularly useful in medical imaging, LAN broadcasting, videoconferencing, and Voice over IP (VoIP) applications.

You choose the rate to fit user or customer needs.

By having six selectable line rates, you can tailor the reach and rate of the extenders to a specific application, while also taking into consideration the noise-level constraints of the specific environment. Use asymmetrical rates for streaming audio and video-on-demand applications. Or choose symmetrical rates to deliver business-class VoIP or high-resolution imaging.

The extenders also bring greater flexibility to service providers, especially those wanting to differentiate their services and provide various speeds to customers. They're particularly useful at satisfying customer demand for triple-play services by enabling you to deliver HDTV, VoIP, and Web access without having to use more expensive cable media.

NOTE: Actual distance and link performance may vary depending on the environment and gauge type of wire you use.

LB401A: top: front view; bottom: rear view (LB401A includes both units.)

Technically Speaking

The High-Speed Ethernet Extender Kit passes higher-layer protocols across the physical link, and it supports 802.1Q VLAN tagged and untagged traffic, ensuring that VLAN information reaches the remote side and is propagated across your network.

All data is forwarded across the link unmodified, with the extenders adding and deleting MAC addresses automatically and passing only packets meant for the remote peered LAN over the interconnection.

The extenders work in pairs, with one of the units configured as a local unit and the other configured as a remote unit. It doesn't matter which end is the local side and which is the remote side; the link is always initiated by the the unit set to operate as the remote unit. As long as the local unit is powered on, the remote unit can establish a link by being powered on or by having its power reset.

Eight DIP switches enable you to quickly configure each extender unit for a wide variety of applications. Set their line rate for either symmetric or asymmetric operation and configure their Ethernet network speed (10 or 100 Mbps) for either half- or full duplex. You can also set them to autonegotiate for duplex and network speed, as well as disable the Ethernet interface when no interconnection link is detected.

Once configured, the High-Speed Ethernet Extenders operate transparently. To monitor or troubleshoot operation, observe the three front-panel LEDs.

- A solid green PWR LED indicates that it's powered on.
- A sold green LINK LED indicates that an end-to-end link between units has been established.
- A solid green ETH LED indicates that a 10/100 Ethernet link has been established. When the extender detects network activity, this indicator flashes.

TECH SPECS

Compliance — FCC Part 15A, EMC Directive 89/336/EEC, Low-Voltage Directive 73/23/EEC
Duplexing Method — Frequency Division (FDD)
Frequency — Copper link: 0–12 MHz
Interconnection Cable Required — 19 AWG (0.9-mm) or 26 AWG (0.4-mm) twisted-pair, unconditioned, dry, metal wire
Modulation — Quadrature Amplitude (QAM) 4-band
Operation — Half- or full duplex
Surge Suppression — Interconnection: Current surge up to 20 kA (8/20 µs) gas tube
CE Approval — Yes
Connectors — Interconnection: (1) RJ-45 (link), wired for 2-wire interface with RING and TIP on Pins 4 and 5;
Local network: (1) Shielded RJ-45 (LAN)
Indicators — (3) LEDs: Power, Link, Ethernet
Operating Environment — Temperature: 32 to 122°F (0 to 50°C); Humidity: Up to 90%, noncondensing
Power — 100–240 VAC, 50–60 Hz, autosensing, external
Size — Each extender unit: 1.5"H x 4.1"W x 3.75"D (3.8 x 10.4 x 9.5 cm)
Weight — Each extender unit: 1.4 lb. (0.6 kg)

Buyer's Guide | Line Data Rates

Upstream	Downstream	Distance
1 Mbps	4 Mbps	6000 ft. (1828.8 m)
1 Mbps	16 Mbps	4000 ft. (1219.2 m)
2 Mbps	50 Mbps	2000 ft. (609.6 m)
Upstream	**Downstream**	**Distance**
10 Mbps	10 Mbps	4000 ft. (1219.2 m)
25 Mbps	25 Mbps	2000 ft. (609.6 m)
50 Mbps	50 Mbps	800 ft. (243.8 m)

Item	Code
High-Speed Ethernet Extender (kit)	**LB401A**
If you need a replacement unit, order an individual extender…	
High-Speed Ethernet Extender Unit	**LB400A**