

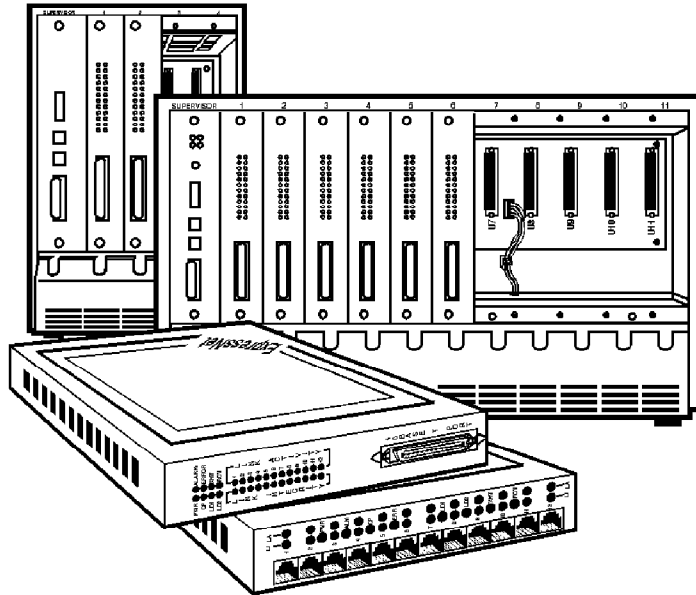


# BLACK BOX®

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Black Box Corporation.

The Source for Connectivity™

## ExpressNet Hubs, Concentrators, and Modules



*Consolidate your network connections with the ExpressNet Chassis and Modules, or connect up to eight devices to your network with the ExpressNet Hub.*

*Connect up to 12, 48, or 132 10BASE-T or FOIRL users with one of our ExpressNet Concentrators.*

### Key Features

- ▶ Counts as only one repeater, but you still get multiple ports.
- ▶ Automatic partitioning and reconnection.
- ▶ Modules are hot-swappable for fast and easy network changes.
- ▶ Traffic and error reporting, and diagnostic LEDs.
- ▶ Connect up to 12 users with the Hub, up to 48 users with the 5-slot chassis, and up to 132 users with the 12-slot chassis.
- ▶ Complies with popular standards.

### Overview

The ExpressNet product line consists of a twelve-user Hub, a five-slot Concentrator for 12 to 48 users, and a twelve-slot Concentrator for 12 to 132 users.

The 5- and 12-slot Concentrator enclosures (Chassis) and Modules are sold separately, so you can configure your network to suit your application.

ExpressNet Hubs are designed to preserve your initial investment. Just remove the Hub card from its enclosure, add an upgrade kit, and plug it in the 5- or 12-slot Concentrator.

The Concentrators fully comply with the 10BASE-T, FOIRL, and IEEE standards, so they're sure to work with your standard equipment.

Plus, the Modules are hot-swappable, so if you have to replace one module, all the other modules will continue operating.

Also available is the Supervisor Module, an exclusive management module that lets you monitor your network from a single location.

With either Hubs or Concentrators, you can purchase a Simple Network Management Protocol (SNMP) version, which lets you manage your network from any station on the

network running an SNMP package.

10BASE-T modules are available with RJ-45 or telco connectors, FOIRL modules are available with SMA or ST connectors, and the Hub comes with RJ-45 or telco connectors.

And the units feature diagnostic LEDs, so you know what your network's doing at a glance.

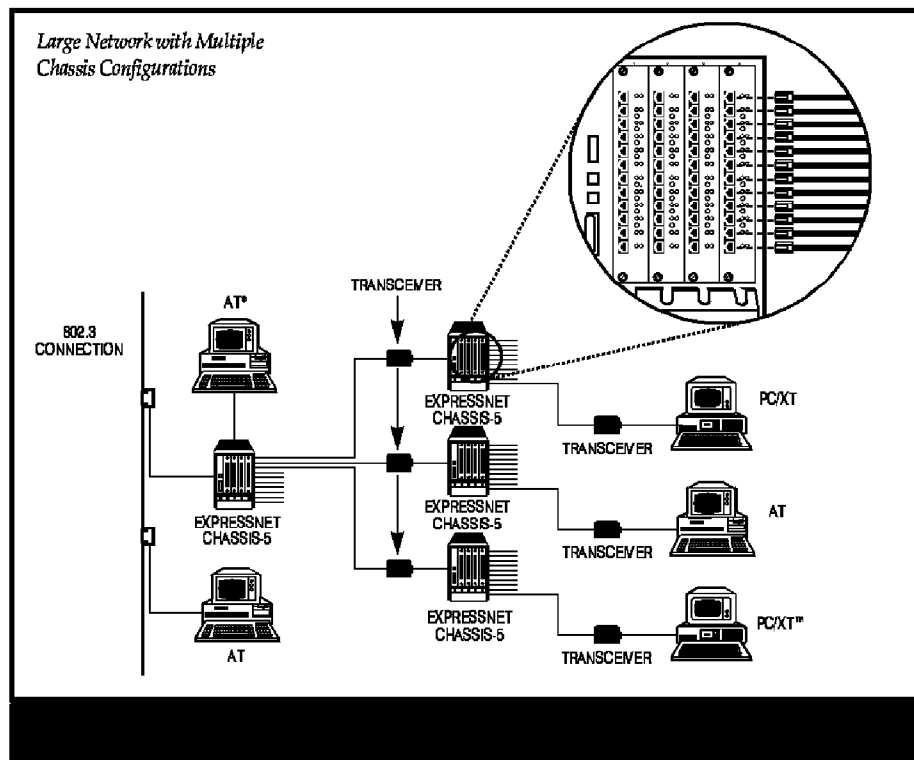
For your 10BASE-T network connections, you might want to order our Twisted-Pair Transceiver.

### Typical Applications

*Link a 10BASE-T segment of up to 12 users to your backbone with the ExpressNet Hub.*

*Mix and match fiberoptic and 10BASE-T segments with the 5- or 12-slot Concentrator and 10BASE-T and FOIRL modules.*

Create a large 10BASE-T network with several ExpressNet Chassis, Hubs, 10BASE-T Modules, and Supervisor Modules.



## Technically Speaking

Here you will find descriptions of each component of the ExpressNet product line:

- ◆ **ExpressNet Chassis—5 (LE1105A) and ExpressNet Chassis—12:** These are 5- and 12-slot empty chassis into which you can plug 10BASE-T or FOIRL Modules. With the 5-slot model, you can connect up to 24 FOIRL or 48 10BASE-T users to your network. With the 12-slot model, you can connect up to 132 10BASE-T users or up to 66 FOIRL users, depending on how many Modules you install. The following Modules slide into the Chassis:
- **10BASE-T Module—RJ (LE1130-RJ):** This module slides into a 5- or 12-port Chassis and has 12 RJ-45 ports to connect up to 12 users to the network. It has 32 LEDs: 8 for the module itself and the particular backplane segment you select, 12 for link integrity,

and 12 for network link activity.

- **10BASE-T Module—Telco (LE1130-T):** This module features a 50-pin telco connector linking up to 12 users to your network. It has 32 LEDs: 8 for the module itself and the particular backplane segment you select, 12 for link integrity, and 12 for network link activity.
- **FOIRL Module—ST (LE1140-ST):** This module has 6 pairs of ST connectors so you can attach up to 6 users to your network. It has 20 LEDs.
- **FOIRL Module—SMA (LE1140-SMA):** This module has 6 pairs of SMA connectors so you can attach up to 6 users to your network. It has 20 LEDs.
- **ExpressNet Supervisor (LE1122):** This module lets you manage the ExpressNet network via an administrative monitor. It has four LEDs: one each for Power, Alarm, Collision Present, and AUI. The Management Port on the module links the module to the monitor.

- **ExpressNet Supervisor and Management Pak (LE1124):** This consists of a Supervisor module plus an SNMP module.

◆ The following standalone hubs are also available. (With an upgrade kit for each Hub, you can remove the hub from its case and slide it into one of the slots on the ExpressNet Concentrator-5 or -12).

- **ExpressNet—Telco (LE1101A):** This Hub comes with a telco connector that lets you attach up to 12 10BASE-T devices to your network. It has 32 LEDs: 8 for the hub itself, 12 for network link activity, and 12 for link status.
- **ExpressNet—RJ-45 (LE1102A):** This Hub comes with 12 RJ-45 connectors that let you attach up to 12 10BASE-T devices to your network. It has 32 LEDs: 8 for the hub itself, 12 for network link activity, and 12 for link status.

- **ExpressNet SNMP—Telco (LE1103A):** This Hub comes with a 50-pin telco connector to connect up to 12 10BASE-T devices to the hub, *plus* it also includes an SNMP management module that you can install in the hub. It has 32 LEDs: 8 for the hub itself, 12 for network link activity, and 12 for link status.

- **ExpressNet SNMP—RJ (LE1103A-RJ):** This Hub comes with 12 RJ-45 connectors and an SNMP management module. It has 32 LEDs: 8 for the hub itself, 12 for network link activity, and 12 for link status.

### Managing Your Network

- ◆ The ExpressNet product line offers two methods of management:
  - In-band management via the Simple Network Management Protocol (SNMP) module.
  - Out-of-band management via an administrative monitor attached to the management port.

## Tech Glossary

A mini-glossary for the technical terms in this brochure.

**10BASE-T**—An IEEE 802.3 standard for 10-megabit-per-second LANs using twisted-pair wire.

**AUI**—Attachment Unit Interface. The physical interface between an ExpressNet Hub or Concentrator and an 802.3 backbone, or between a network device and the transceiver or MAU.

**backplane**—The back wall of the Chassis. It provides the required connections between modules, and carries power for all modules.

**Chassis or Concentrator**—A modular multiport repeater in either a 5-slot or a 12-slot model. The Chassis consists of an enclosure with one slot reserved for a Supervisor Module, and the remaining slots available for plug-in modules. The Chassis has built-in diagnostic and administrative capabilities provided by the Supervisor module.

**Hub**—A multiport repeater.

**Module**—A card that plugs into an ExpressNet Chassis. There are several types of plug-in modules, including the Supervisor Module, 10BASE-T Modules, and FOIRL Modules.

**Simple Network Management Protocol (SNMP)**—A standard network management protocol, part of the TCP/IP protocol suite.

## Hot Topics

*With in-band or out-of-band management, you can control your network from a single location.*

With Simple Network Management Protocol (SNMP), a form of in-band management, you can assign an alphanumeric name for the Hub, each link (port), and the network interface port. These strings give you a means for identifying Hubs and links.

With the management port on the Hub or with the Supervisor Module installed in the Chassis, you get out-of-band management. Simply connect the management port or module to an external administrative monitor and observe and control each station on the LAN.

*Diagnostic LEDs tell you your network's status at a glance.*

The ExpressNet Hubs (LE1101A, LE1102A, LE1103A, and LE1103A-RJ) and Modules (LE1130-RJ and LE1130-T) feature 32 LEDs. The first group of 8 LEDs pertains to the Hub itself:

- PWR—Steady green light indicates that power is on.
- ALM—Flashing amber light indicates that the AUI port has experienced a +12-volt power failure. The LED will flash until you replace the AUI power fuse. Steady amber light indicates trouble—the module has failed the self test. Repair or replace the card.
- ERR—Flashing amber light indicates a configuration error.
- LD1—Steady green light indicates that the network interface module is present.
- LD2—Currently not used.
- XMT—Flashing green light indicates that the network interface module is transmitting data.
- RX—Flashing green light indicates that the network interface module is receiving data.

The Hubs and Modules also have 12 LEDs for network link activity and 12 LEDs for link status.

The FOIRL Modules feature 20 LEDs. They have the same first group of 8 LEDs as the Hubs do (PWR, ALM, ERR, LD1, LD2, XMT, and RX).

The FOIRL Modules also have 6 LEDs for network link activity and 6 LEDs for link status.

- The Supervisor Module has 4 LEDs:
- PWR—A steady green light indicates that power is on. During startup, a flashing green light indicates that the module is not passing internal diagnostics.
  - ALM—A rapidly flashing light indicates that the AUI port has experienced a +12-volt power failure.
  - CP—A momentarily flashing red light indicates that a collision is present.
  - AUI—A momentarily flashing yellow light indicates that data is being received from the AUI port.

## Specifications

### ExpressNet

#### ExpressNet Chassis:

**Connectors** — LE1105A: (1) Supervisor Module Slot, (4) 10BASE-T or Fiber Module Slots; LE1112A: (1) Supervisor Module Slot, (11) 10BASE-T or Fiber Module slots

**Power** — 115/230 VAC, 120 VA max.

**Size** — LE1105A: 12.6"H x 8"W x 10.8"D (32 x 20.3 x 27.4 cm); LE1112A: 12.6"H x 17"W x 10.8"D (32 x 43.2 x 27.4 cm)

**Weight** — LE1105A: 17.5 lb. (7.9 kg); LE1112A: 40 lb. (18.1 kg)

#### Supervisor Module:

**Connectors** — (1) 15-pin AUI female, (2) RJ-45; (1) management, (1) supervisor port

**Power** — 24 VAC, 25 VA

**Size** — 9.3"H x 1.3"W x 10.5"D (23.6 x 3.3 x 26.7 cm)

**Weight** — 1.4 lb. (0.6 kg)

#### 10BASE-T Modules:

**Connectors** — LE1130-RJ: (12) RJ-45 female; LE1130-T: (1) 50-pin telco

**Power** — 24 VAC, 13 VA

**Size** — 9.3"H x 1.3"W x 10.5"D (23.6 x 3.3 x 26.7 cm)

**Weight** — 1.4 lb. (0.6 kg)

#### FOIRL Modules:

**Connectors** — LE1140-SMA: (6) pairs of SMA; LE1140-ST: (6) pairs of ST

**Size** — 9.3"H x 1.3"W x 10.5"D (23.6 x 3.3 x 26.7 cm)

**Weight** — 1.4 lb. (0.6 kg)

#### ExpressNet Hub:

**Connectors** — LE1101A, LE1103A: (1) 50-pin telco female, (1) RJ-45 female, (1) AUI 15-pin female; LE1102A: (13) RJ-45 female (12 10BASE-T and 1 RS-232), (1) AUI 15-pin female

**Power** — 24 VAC, 40 VA

**Size** — 1.7"H x 7.8"W x 10"D (4.3 x 19.8 x 25.4 cm)

**Weight** — 4.1 lb. (1.9 kg)

## Additional equipment you may need

- ◆ 10BASE-T or Fiberoptic network interface cards to attach your PCs to the Concentrator or Hub.
- ◆ 10BASE-T cable.
- ◆ Fiberoptic transceivers.
- ◆ Fiberoptic cable.
- ◆ 10BASE-T and Fiberoptic repeaters.

## The Complete Package

What you get when you order ExpressNet.

- ◆ ExpressNet—Telco includes the ExpressNet Hub with a telco connector.
- ◆ ExpressNet—RJ includes the ExpressNet Hub with 12 RJ-45 connectors.
- ◆ ExpressNet SNMP—Telco includes the ExpressNet Hub with a telco connector and SNMP module.
- ◆ ExpressNet SNMP—RJ includes the ExpressNet Hub with RJ-45 connectors and SNMP software.
- ◆ ExpressNet Chassis—5 includes a 5-slot chassis only. You order modules separately.
- ◆ ExpressNet Chassis—12 includes a 12-slot Chassis only. You order modules separately.
- ◆ ExpressNet Supervisor includes the Supervisor Module.
- ◆ ExpressNet Supervisor and Management Pak includes a Supervisor Module and an SNMP Module.
- ◆ 10BASE-T Module—RJ includes a 10BASE-T Module with 12 RJ-45 connectors.
- ◆ 10BASE-T Module—T includes a 10BASE-T module with a telco connector.
- ◆ The FOIRL Modules include the card with either ST or SMA connectors.

## For these and other components...

Call our expert Technical Support Staff for all your LAN needs. They'll help you find the best equipment for your application.

## Ordering Information

This information will help you place your order quickly.

PRODUCT NAME	ORDER CODE
ExpressNet—Telco .....	LE1101A
ExpressNet—RJ-45.....	LE1102A
ExpressNet SNMP—Telco.....	LE1103A
ExpressNet SNMP—RJ.....	LE1103A-RJ
ExpressNet Chassis—5 .....	LE1105A
ExpressNet Chassis—12 .....	LE1112A
ExpressNet Supervisor .....	LE1122
ExpressNet Supervisor and Management Pak .....	LE1124
10BASE-T Module—RJ.....	LE1130-RJ
10BASE-T Module—Telco.....	LE1130-T
FOIRL Module—ST .....	LE1140-ST
FOIRL Module—SMA.....	LE1140-SMA