



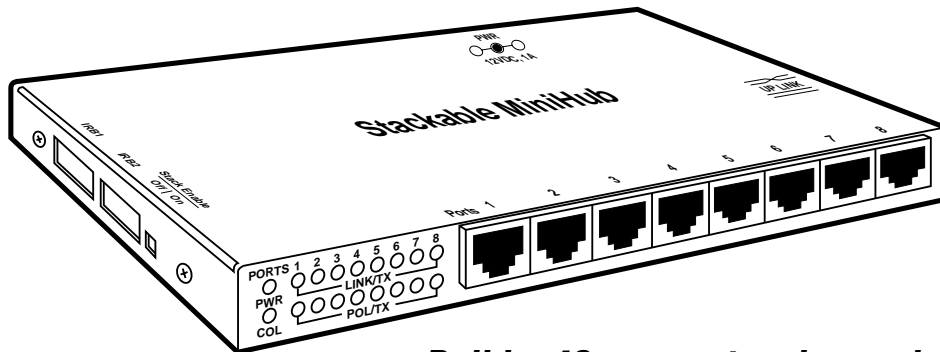
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# BLACK BOX<sup>®</sup>

## NETWORK SERVICES

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## STACKABLE MINIHUB



***Build a 40-user network anywhere—or add up to 40 users to your existing network.***

### Key Features

- ▶ **Stack five units to support up to 40 users.**
- ▶ **Includes eight shielded RJ-45 connectors and one AUI connector. Optional BNC or fiberoptic connectors available.**
- ▶ **Offers full 10BASE-T functionality with an exceptionally small footprint.**
- ▶ **LEDs show basic network activity.**
- ▶ **Durable steel enclosure and compact size.**

The Stackable MiniHub is a compact, unmanaged hub offering low-cost connectivity for IEEE 802.3/Ethernet 10BASE-T networks. Each hub has eight shielded modular jack ports and one AUI port. A BNC or Fiber port is optional in addition to the AUI.

Up to five hubs can be stacked to form a single logical repeater with 40 modular jack ports and four AUI, BNC, or Fiber ports. This feature allows you to build larger networks without violating IEEE 802.3 guidelines.

Port 8, on the front of the MiniHub, has an uplink switch for internal crossing over of the 10BASE-T port. This allows you to

connect to other hubs without using a crossover cable.

It may be tiny, but the Stackable MiniHub has everything you expect in a 10BASE-T hub. Featuring full repeater functionality, the MiniHub also offers jabber protection to prevent lockup from excessively long packets, automatic partitioning and reconnection of ports experiencing excessive collisions, and automatic polarity detection that compensates for wiring errors on the receive pair.

To aid operation, troubleshooting, and diagnostics, the MiniHub has 20 front-panel LEDs that display hub status and link activity.

### Typical Applications include:

- Networking a personal multi-system office using 10BASE-T twisted-pair cabling
- Temporary network for trade shows
- Lab or office environments that need an independent Ethernet network
- Expanding small independent networks
- Testing your network—use the MiniHub as a test port



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# Operating Features

Stackable MiniHubs perform signal amplification, retiming of data packets, and regeneration of preamble bits for each packet received. They also detect collisions, extend collision fragments, and automatically partition and reconnect individual ports. This section describes a few of these features in greater detail.

## Preamble Regeneration

As per Ethernet standards, the MiniHubs add bits to the preambles of output packets so that each output packet contains a minimum 64-bit preamble.

## Collision Condition

When carrier is detected simultaneously on multiple ports, a jam pattern is generated on each port to create a collision condition. When a collision signal from one port is detected, it generates a jam pattern to other ports.

## Partitioning and Reconnection

Stackable MiniHubs will automatically partition any port where 32 consecutive collisions occur or after 6.5 ms of continuous transmissions. Network integrity is checked every 800 ms, and the segment is reconnected after one 512-bit packet is transmitted without an error.

## Fragment Extension

The Stackable MiniHubs will automatically add bits to a received data packet of less than 96 bits (a "fragment") so that the size of the packet sent on toward its destination is at least 96 bits.

# Specifications

**Standards** — All: 10BASE-T;  
LE2801A: 10BASE5;  
LE2801A-BNC: 10BASE2;  
LE2801-FO: 10BASE-FL

**Data Rate** — 10 Mbps

**Diagnostics** — Via LEDs or network software

**Indicators** — (18) Front-mounted recessed LEDs:  
(1) Power; (8) Link/TX  
(1 for each port);  
(8) Pol/RX (1 for each port)

**Leads/Signals Supported** — Pins 1, 2, 3, and 6

**Partitioning** — Automatic after 32 consecutive collisions

**Reconnection** — Occurs after 512 bits of error-free transmission

**Maximum Segment Length** —  
UTP: 328 ft. (100 m);  
STP: 492 ft. (150 m);  
AUI drop cable: 164 ft. (50 m);  
BNC: 607 ft. (185 m);  
10BASE5: 1640 ft. (500 m);  
10BASE-FL multi-mode  
fiberoptic: 6562 ft. (2 km)

**Connectors** — All: (8) shielded RJ-45, (1) DB15 female, (2) stacking bus headers;  
LE2801A-BNC: (1) BNC;  
LE2801A-FO: (2) Fiber ST

**User Controls** — Rear-mounted slide switch for straight-through versus crossover (uplink) operation on port 8; Stackable switch to specify which hub is at the base of the stack

**Enclosure** — High-strength steel

**Cooling Method** — Convection

**MTBF** — 50,000 hours

**Temperature Tolerance** —  
Operating: 32 to 122°F (0 to 50°C);  
Storage: -4 to +140°F (-20 to +60°C);  
Humidity: 10 to 95%, noncondensing

**Power** — From wallmount power supply: Input: 95–125 VAC, 60 Hz; Output: 12 VDC, 1 amp; Consumption: 10 watts maximum

**Size** — 1"H x 6.8"W x 4"D  
(2.5 x 17.2 x 10.1 cm)

**Weight** — 1.3 lb. (0.6 kg);  
With power supply: 2.3 lb. (1 kg)

# The Complete Package

- (1) Stackable MiniHub
- (1) External 120-VAC, 60-Hz power supply
- (1) Velcro tape section, approximately 3 inches (7.6 cm) in length
- (2) Brackets for optional wall-mounting
- (1) User's manual
- (1) Stacking cable

## Ordering Information

ITEM	CODE
Stackable MiniHub .....	LE2801A
Stackable MiniHub-BNC .....	LE2801A-BNC
Stackable MiniHub-Fiber .....	LE2801A-FO



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