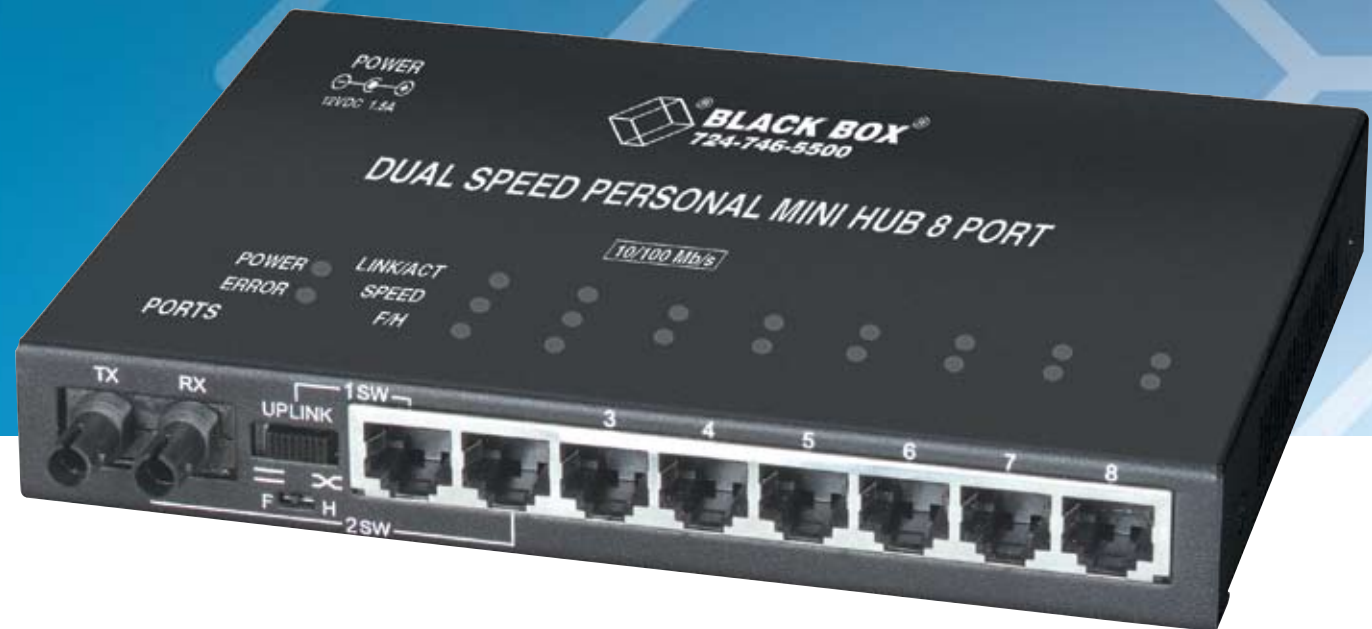


## Dual-Speed Personal MiniHubs

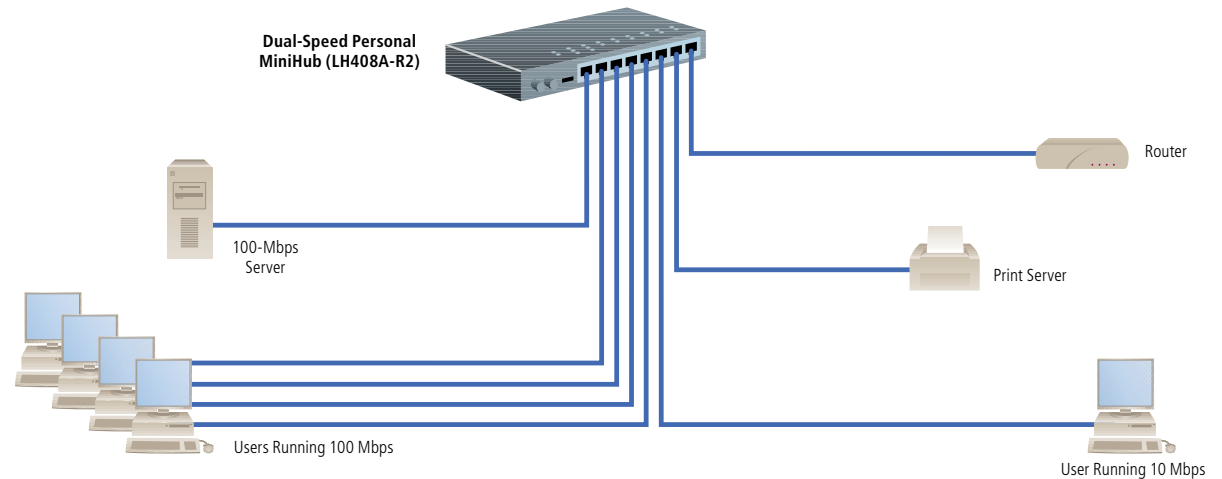
Combined hubs and switches for mixed-speed devices. Three models provide copper-to-fiber connectivity!



## FEATURES

- » Support 10- or 100-Mbps network connections on each autonegotiating and each autosensing RJ-45 port.
- » Fiber models include a 100-Mbps switched fiber port for backbone connection.
- » Internal bridge chip enables all connected devices to communicate.
- » LED indicators show the operating status of the unit and of each port.
- » External 115- or 230-VAC power supply included.
- » Plug-and-play operation.

With the Dual-Speed Personal MiniHub, you can connect mixed-speed devices over copper or over copper and fiber!



## OVERVIEW

More than just hubs, these [Dual-Speed Personal MiniHubs](#) also provide switched-port capabilities! Only about the size of a paperback book, each unit offers flexibility for offices and workgroups that want to mix high-bandwidth Fast Ethernet and fiber with more economical Ethernet systems.

Each MiniHub comes with an external power supply (115 or 230 VAC), an internal cooling fan, a user's manual, and a set of metal clips and screws for secure shelf or wall mounting.

Choose from either copper-only or copper/fiber models.

### All models

All the [Dual-Speed Personal MiniHubs](#) support two shared traffic domains, one at 10 Mbps and one at 100 Mbps. Each port is automatically connected into the appropriate domain, depending on the speed sensed.

All models also include an internal switch or bridge chip to connect the 10- and 100-Mbps domains. All users connected to the hub, whether 10 or 100 Mbps, can communicate with each other through this bridge. It's a self-learning, store-and-forward switch that filters and selectively forwards data packets between traffic domains. The performance of each domain is maintained at its peak potential, unaffected by local traffic on the other domain. This gives your MiniHub the flexibility needed for transitioning mixed-speed networks from 10 to 100 Mbps without requiring complex setup tasks or software configuration.

### Copper-only model

The base model (LH408A-R2) features eight shielded RJ-45 ports. Ports 3–8 are autonegotiating hub ports (half-duplex) operating at either 10 or 100 Mbps.

Port 1 is a manually operated switched port (full- or half-duplex and straight or crossover linkage) that also automatically operates at 10 or 100 Mbps. Its manual MDI/MDI-X uplink enables you to connect the MiniHub to either a central switch or a second MiniHub.

Port 2 is also a manually operated switched port. Its manual crossover MDI-X can be selected for full-duplex 100-Mbps or autonegotiated 10- or 100-Mbps operation.

The hub ports are typically used for workstation and small workgroup connectivity. The switched ports enable daisy chaining to other hubs or can be used for a high-speed uplink and backbone connections.

When the MiniHub is used for uplinks, its ports sense the speed of the incoming device. When used to interconnect two [Dual-Speed Personal MiniHubs](#), autosensing causes the connecting link to operate at 100 Mbps. You can then easily connect 10-Mbps hubs without adversely affecting your network.

### Copper/fiber models

The [Dual-Speed Personal MiniHubs](#) with Fiber Ports (LH408A-MSA, LH408A-MSC, LH408A-MST, LH408A-SSC) add fiber functionality to the base model's flexibility.



LH408A-R2

The fiber units include eight RJ-45 ports. Ports 3–8 are shielded, autonegotiating hub ports. They operate at 10 or 100 Mbps.

Port 1 is a manually operated switched port (full- or half-duplex and straight or crossover linkage) that also operates at 10 or 100 Mbps. Its manual crossover MDI/MDI-X uplink enables you to connect the MiniHub to either a central switch or a second MiniHub.

Port 2 is a 100-Mbps fiber connector. Note that when Port 2's fiber connector is used, Port 1 is automatically set to operate at 100 Mbps. Port 2's fiber optic uplink connector can be either multimode SC or ST® or single-mode SC.

### What's included

#### LH408A-R2, LH408AE, LH408A-MSC, LH408A-MST, LH408A-SSC:

- ◆ Dual-Speed Personal MiniHub with either a 115- or 230-volt power supply
- ◆ Set of metal clips and screw for secure shelf or wall mounting
- ◆ User's manual

### TECH SPECS

**Compliance** — UL® 1950, cUL, FCC Part 15 Subpart J Class A, DOC Class/MDC classe A

**Distance** — LH408A-R2: Up to 328 ft. (100 m) for 10BASE-T (UTP) or 100BASE-TX (CAT5 UTP)

**Enclosure** — High-strength metal; metal mounting brackets included; fan-cooled (internal fan @ 5 cfm)

**Interdomain Packet Processing** — Filtering and forwarding rate:

From 100-Mbps ports: 148,800 pps maximum;

From 10-Mbps ports: 14,880 pps maximum;

Processing type: Store and forward (fiber models include collision-based flow control);

Auto-learning: 1.8K address table, shared for both traffic domains;

Packet buffers: 256 KB, dynamically shared on both domains;

Latency (excluding packet time): 100 to 10 Mbps: 5 µs;

10 to 100 Mbps: 5 µs

**MTBF** — 50,000+ hours

**Performance** — At 100 Mbps: Path Delay Value (PDV) is 80BT (exceeds Class II);

At 10 Mbps: Partitioning after 63 consecutive collisions, auto-reconnect after one packet error-free reception

**Protocol** — Transparent

**Speed** — LH408A-R2: 10 or 100 Mbps, autosensing;

All others: Port 1: 10 or 100 Mbps;

Port 2: 100 Mbps for fiber or 10 or 100 Mbps for RJ-45;

Ports 3–8: 10 or 100 Mbps, autonegotiating

**Standards** — IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX (Fiber models also comply with 100BASE-FX)

**Connectors** — All: (8) RJ-45;

LH408A-MSC, -SSC: Also have (1) pair of SC (uplink);

LH408A-MST: Also has (1) pair of ST (uplink)

**Indicators** — LH408A-R2: Per unit: Power, Collision;

Per port: LINK/ACT ([8] Link/Act 10 Mbps; [8] Link/Act 100 Mbps;

[16] ACT, (1) per traffic domain);

All others: Per unit: Power, Error;

Per port: LINK/ACT; Speed (with LINK on: On for 100 Mbps,

Off for 10 Mbps); Ports 1 and 2 only (full-/half- duplex switched):

F/H (On for full, Off for half)

**Temperature Tolerance** — Operating: 32 to 122° F (0 to 50° C);

Storage: -5 to +160° F (-20 to +70° C)

**Relative Humidity Tolerance** — 10 to 95%, noncondensing

**Maximum Altitude Tolerance** — Up to 10,000 feet (3048 m)

**Power** — External supply: 5–125 VAC @ 50 Hz (200–250 VAC @ 50 Hz

for AE models) with an IEC power cable connector;

Output: 5 VDC, 3 amps;

Power consumption: 8 watts typical, 10 watts max.;

Polarity: Center positive, shell negative

**Size** — LH408A-R2: 1"H x 8.6"W x 4"D (2.5 x 21.8 x 10.2 cm);

All others: 1.3"H x 6.8"W x 5"D (3.3 x 17.3 x 12.7 cm)

**Weight** — LH408A-R2: Hub: 1.75 lb. (0.8 kg); Power supply: 0.8 lb. (0.4 kg);

All others: Hub: 1.5 lb. (0.7 kg); Power supply: 1 lb. (0.5 kg)

Item	Code
Dual-Speed Personal MiniHubs	
with Copper Ports	
115-VAC Power Supply	LH408A-R2
230-VAC Power Supply	LH408AE
with Copper and Fiber Ports	
Multimode	
SC, 115-VAC Power Supply	LH408A-MSC
ST, 115-VAC Power Supply	LH408A-MST
Single-Mode	
SC, 115-VAC Power Supply	LH408A-SSC

Item	Code
<b>You might also need...</b>	
Spare 115-VAC Power Supply for the LH408A-R2, LH408A-MSC, LH408A-MST, and LH408A-SSC	LH408A-PS
<b>You may also want to order cables...</b>	
CAT5 Solid-Conductor Cable, 568B, 4-Pair, PVC (NEC CMR)	EYN556MS-0010
Premium Ceramic, Multimode 62.5-Micron Fiber Optic Patch Cable, Duplex Riser, ST-ST	EFN110-STST