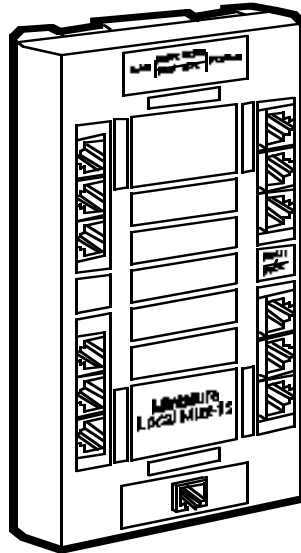# BLACK BOX®
NETWORK SERVICES

Miniature Local Mux-12

Connect up to 12 async terminals to an async host over twisted-pair cable.

Key Features

▶ *Compact, time-division multiplexor.*

▶ *Powered by an external 230-VAC power supply.*

▶ *Subchannel speeds up to 19.2 Kbps.*

▶ *Composite speed up to 1.2288 Mbps.*

▶ *LEDs indicate power, synchronization, and loopback.*

▶ *Configurable for 6 or 12 sub-channels.*

▶ *Distances up to 1 mile (1.6 km).*

Use the Miniature Local Mux-12 to multiplex up to 12 async terminals onto a single 4-wire twisted-pair cable, in point-to-point applications.

A built-in line driver extends the distance that the multiplexed data travels up to 1 mile (1.6 km) at 19.2 Kbps.

The Mux is powered from an AC adapter.

The 12 subchannels are connected by RJ-45 connectors accessible from the top panel.

Four LEDs function as follows:

• The Power LED is ON when the unit is powered.

• The Local Sync Loss LED is ON when synchronization is lost at the local Mux.

• The Remote Sync Loss LED is ON when synchronization is lost at the remote Mux.

• The Test LED is ON when the Mux is performing a loopback.

An over-sampling technique is used by the Mux to enable each one of the 12 channels to be sampled at a rate of 78.6 Kbps.

While the main application for the Mux is for point-to-point configurations at distances up to 0.6 miles (1 km), other applications are possible. For example, you can use the Mux in a ring-type configuration with clusters of terminals distributed in several locations. This application, however, limits the bit rate of the sub-channels.

Typical Application

Connect up to 12 terminals to a host via the MX873A and twisted-pair cable.

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Use a pair of Muxes to connect 12 async terminals to an async host in a point-to-point configuration, or create a ring configuration, as shown in the diagrams at right.

Figure 1. Point-to-point configuration.

Async Computer — Miniature Local Multiplexor-12 — Miniature Local Multiplexor-12 — Async Terminals
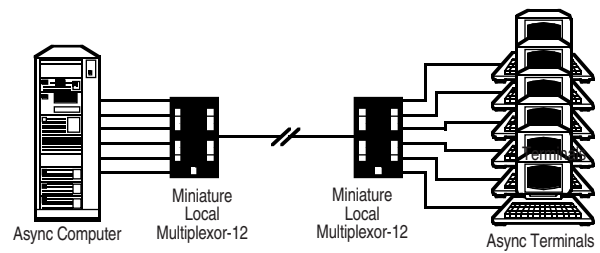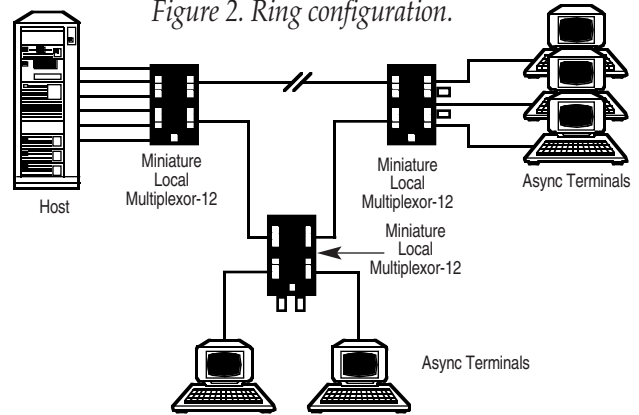
Technically Speaking

How the Mux Works

- The Mux can be strapped for 6 or 12 sub-channels mode of operation to suit your application.
- Multiplexing is implemented using an over-sampling technique, which enables each one of the 12 channels to be sampled at a rate of 78.6 Kbps.

Applications

- The Mux-12 primary application is for point-to-point configurations at distances of up to 0.6 miles (1 km). A cluster of terminals can be connected to a host computer through a single link.
- A second application of the Mux-12 is to install clusters of terminals distributed in several locations in a ring configuration. At each site, the unconnected channels must be bypassed by shorting TX pin to RX pin of the relevant sub-channel's connector. However, this application limits the bit rate of the sub-channels, since oversampling distortions are accumulative.

Figure 2. Ring configuration.

Host — Miniature Local Multiplexor-12 — Miniature Local Multiplexor-12 — Async Terminals — Miniature Local Multiplexor-12 — Async Terminals

Additional equipment you may need:

- Unshielded Twisted-Pair Cable
- Connector and gender adapters

For these and other components...

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

Ordering Information

This information will help you place your order quickly.

Specifications

Multiplexing Technique — Time-division

Flow Control — None

Interface — RS-232C/V.24, DCE

Operating Temperature — 32 to 122° F (0 to 50° C)

Humidity — Up to 95% noncondensing

User Channels — 12

Protocol — Async

Data Format — Async, full-duplex

Speed — Subchannel: Up to 19.2 Kbps; Composite: 1.2288 Mbps

Maximum Distance — 1.6 km (1 mile) at 19.2 Kbps over 22 AWG wire

Indicators — (4) LEDs: Power, Local Sync Loss, Remote Sync Loss, Test

Connectors — Subchannel: (12) RJ-45 female; Composite: (1) RJ-45 female

Power — PS017AE power supply, Input power: 230 VAC, 50 Hz; Output power: 9 VDC

Size — 3.4 x 11.4 x 18.7 cm

Weight — 0.3 kg

PRODUCT NAME	ORDER CODE
Miniature Local Multiplexor-12	MX873AE

Remember to order cables:

Twisted-Pair Cable	EYN712A

You might also need adapters:

DB9-to-RJ-45 Adapters	FA755, FA756
DB25-to-RJ-45 Adapters	FA770, FA771