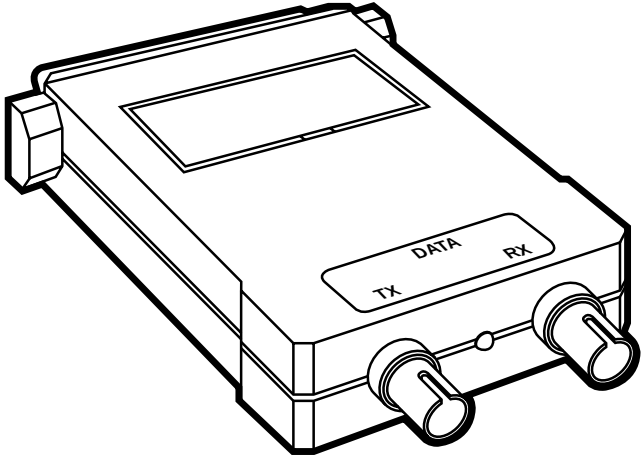
BLACK BOX
NETWORK SERVICES

APRIL 1998
ME605A-FST
ME605A-MST

Async Fiber Optic Mini Modem



CUSTOMER SUPPORT INFORMATION

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TRADEMARKS

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1. Specifications

Data Rate — Up to 19.2 Kbps

Pulse Width Distortion — Less than 25%

Transmission Line — Duplex optical cable

Transmission Mode — Asynchronous, full- or half-duplex

Transmission Controls — Carrier constantly on or controlled by RTS

Optical Output Levels — -28 dBm into 100/140 fiber; -32 dBm into 62.5/125 fiber; -36 dBm into 50/125 fiber

Receiver Sensitivity — -45 dBm

Operating Wavelength — 850 nm

Operating Range — Maximum range is 2 miles (3 km) of continuous fiber with the following fibers: 100/140 fiber with attenuation of 4 dB/km; 62.5/125 fiber with attenuation of 3.5 dB/km; 50/125 fiber with attenuation of 3 dB/km

Indicators — (1) Power LED

Terminal Interface — (1) ITU V.24/EIA RS-232C integral DB25 male or female connector

Fiberoptic Interface — (2) ST connectors

Temperature — 32 to 122°F (0 to 50°C)

Humidity — Up to 90%, noncondensing

Power — None required; uses ultra-low power from the data and control signals

Size — 0.7"H x 2.1"W x 3.1"D (1.8 x 5.3 x 7.8 cm)

Weight — 1.3 oz. (36 g)

2. Description

2.1 General

The Async Fiber Optic Mini Modem is used for local data distribution, connecting full- or half-duplex async computers and terminals. A pair of modems ensures integrity of data transmission over fiberoptic cable at distances up to 2 miles (about 3 km).

The Modem features a switch-selectable DCE/DTE option. This allows operation as DTE, for connection to another DCE such as a multiplexor port, eliminating the need for a cross cable. The carrier can be strapped for either continuous operation, or for switched operation, controlled by the RTS signal, for transfer of a control signal end-to-end.

Innovative circuitry allows the Modem to operate without connection to the mains power supply, by using ultra-low power from the data and control signals. The Modem operates even if only transmit data is connected—no control signals or any other source of power are required.

The Modem comes in a durable plastic case.

The Modem incorporates all the advantages of a fiberoptic system, providing:

- Lower attenuation than with copper wire.

NOTE

Attenuation is not related to frequency.

- EMI/RFI immunity, saving the cost of expensive and heavy shielding, and complex error checking routines.
- Almost absolute security and reduction in the cost of data encryption; eavesdropping is virtually impossible since negligible power is radiated from the fiber.
- Safety and electrical isolation: no spark hazard and no ground-loop noise problems.

2.2 Features

- Asynchronous transmission up to 19.2 Kbps.
- Transmission range up to 2 miles (about 3 km), regardless of data rate.
- Full- or half-duplex operation.
- Transfers one control signal end-to-end.
- DCE-DTE switch.
- No external power required.
- Plugs directly into V.24/RS-232C terminal connector.
- Compact, lightweight, and easy to install.

2.3 Application

A pair of Async Fiber Optic Mini Modems ensures secure data transmission over fiberoptic cable at distances up to 2 miles (about 3 km).

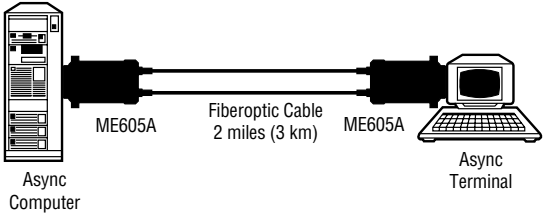

Figure 2-1. Typical application of the modem.

3. Installation

Installation of the Modem is simple. Just follow these instructions:

1. To access the switches, insert a slim screwdriver under the nameplate and ease the nameplate off.

2. Strap the modem according to the strapping diagram (**Figure 3-1**) and the strap selection table (**Table 3-1**). Explanations of the switches are also given on the printed circuit board.

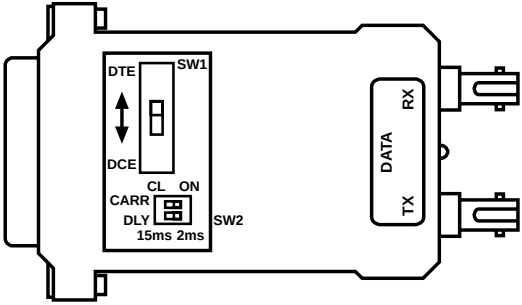

Figure 3-1. Strapping diagram.

Table 3-1. Strap/Switch Selection.

Strap Identity	Function	Position	Factory Setting
CARR	Selects Carrier constantly ON controlled by RTS	On (ON) controlled (CL)	ON
DLY	Selects RTS/CTS delay	2 msec 15 msec	2 msec
DCE/DTE Switch	Selects DCE or DTE	DTE DCE	DCE

3. The Modem is factory-set for DCE. For DTE operation, move the switch to the DTE position (see **Figure 3-2**).

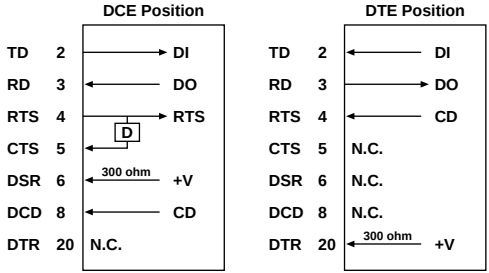

Figure 3-2. DTE/DCE Switch Operation.

4. To close the unit, snap the nameplate back into place. Plug the modem directly into the DB25 connector of the terminal/computer port and tighten the screws on each side of the modem connector.

5. Remove the plastic dust caps from the fiberoptic connectors and connect the cable to the unit. Observe the following directions:

   - TX on the local modem should be connected to RX on the remote modem.

   - RX on the local modem should be connected to TX on the remote modem.

6. The Modem is now ready for operation. The red Data LED lights when the modem is receiving power.

NOTES

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