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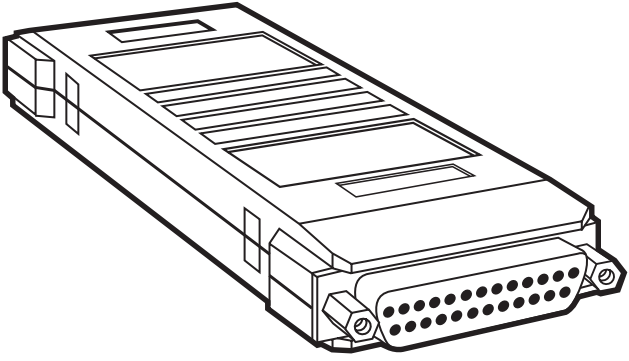
BLACK BOX®
NETWORK SERVICES

JULY 1997
MC124A

Tail-Circuit Adapter (TCA-232)



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
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TRADEMARKS

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CONTENTS

1. Specifications

Transmission Format — Synchronous, transparent to protocol

Data Rate — Up to 256 Kbps

Tail-to-System Buffering — 16-bit buffer, automatic centering

Connectors — (2) DB25 female

DCE to DTE Connection — The TCA-232 provides cross-pinning function

Temperature — 32 to 140°F (0 to 60°C)

Humidity — Up to 95%, noncondensing

Power — No AC power required; uses ultra-low power derived from the EIA RS-232C, CCITT V.24 data and clock signals

Size — 1.2"H x 2"W x 5.3"D (3 x 5 x 13.5 cm)

Weight — 0.22 lb. (0.1 kg)

2. Introduction

2.1 Description

The Tail-Circuit Adapter (TCA-232) has a 16-bit buffer that helps you synchronize clock signals in your tail circuit.

Data is transferred from the multiplexor directly to the adjacent modem, using the mux receive clock (pin 17), which is also provided to the modem external clock (pin 24). Data received from the remote terminal is loaded into the buffer using the mux transmit clock (pin 15).

Since the TCA-232 performs all necessary cross connections between the two DCEs, you only need straight-through cables.

2.2 Features

- DCE to DCE connection
- Built-in buffer to prevent jitter errors
- Data rates up to 256 Kbps
- No strapping, easy to install
- No AC power required
- Compact and lightweight

3. Installation

1. Connect the side of the TCA-232 labeled "SYSTEM, J1" to the multiplexor sub-channel or the main modem.
2. Connect the side of the TCA-232 labeled "TAIL, J2" to the local modem. The local modem should be strapped to external clock.

NOTE

The remote modem on the tail circuit should be strapped for CLOCK LOOPBACK.

4. Application

The TCA-232 is used to couple two DCE devices together whose clocks are of the same frequency but are not “in phase.”

An example is an extension of a multiplexor channel using modems in a “tail circuit” (see **Figure 4-1**). When the distance between the two tail modems is significant, there is a difference in phase between the multiplexor’s transmit clock and the adjacent modem’s receive clock, resulting in transmission errors. The TCA-232 acts as a buffer between the DCEs to prevent these transmission errors.

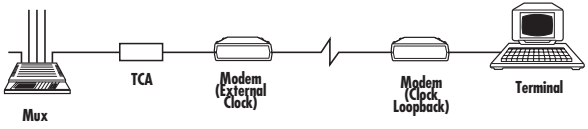

Figure 4-1. Typical Application.

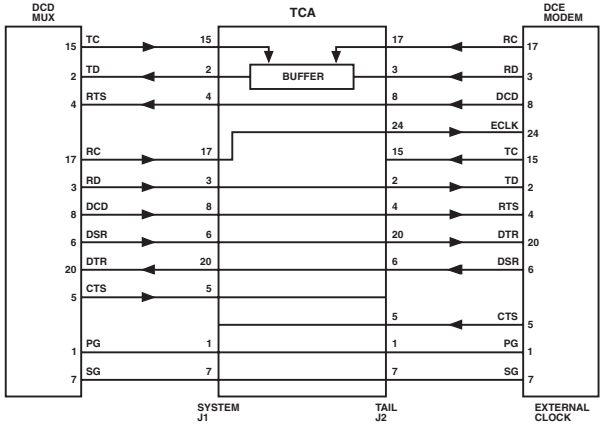

Figure 4-2. Schematic Diagram of Data Flow.