



# FDM2070-6D Fiber Modem for 2070 Controllers

## Applications

The FDM2070-6D Fiber Modem facilitates the exchange of data related to traffic signal control between a 2070 Controller and various components in the traffic management system. The 2070 Controller, a widely utilized type of traffic signal controller overseeing traffic light operations, relies on modems like the FDM2070-6D for seamless communication.

The FDM2070-6D Fiber Modem assumes a pivotal role in ensuring smooth communication across traffic signal controllers and the broader traffic management network. This harmonious communication is essential to maintain the smooth and safe flow of traffic. The 2070 Controller depends on modems like the FDM2070-6D to transmit and receive crucial data, encompassing real-time traffic conditions, pedestrian crossings, signal timing adjustments, and other pertinent information to optimize traffic signal functionality.

## Features

- Single card fiber optic modem
- Operates in many different topologies
- Easy installation into 2070 Controller

## General Description

The FDM2070-6D is a single card fiber optic modem designed to be installed in a 2070 Traffic Controller.

The FDM2070-6D is a hardened modem designed for polling applications utilizing RS232/422 Asynchronous transmission over singlemode fiber optics cables.

The FDM2070-6D can operate in many different topologies, even on a simple fiber ring when there is only one fiber available, later as more fibers become available, simply flip a switch to change to the new topology.

Switch Selectable Topologies:

- Single Fiber Ring
- Daisy Chain Format
- Dual Fiber Redundant Self Healing

The FDM2070-6D has a high dynamic range yet it is immune to



optical over loads, therefore no optical attenuators are required for short runs or even bench top "back to back" testing!

Every modem can be configured as a master or a slave. For auto recovery operation any modem can be configured as an Auxiliary Master.

A unique and intuitive built in fiber identification system uses a dual seven segment display to graphically indicate the status of the fiber network.

Other advantages include multiple use Dual Data Ports enabling branch circuit capabilities such as an On Street Master to Local Controller at the same location.

The controllers SP2 (or SP4) is extended to the front panel of the FDM2070-6D.

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### General Characteristics

- Form Factor: Standard 2070 plug in board size:  
8.375" x 5.69" x 1.592" (212.7mm x 144.5mm x 40.4mm)
- Temperature: -34.6°F to +165.2°F (-37°C to +74°C)
- Humidity: 5 to 95% non-condensing
- Power: +5 V @ 500ma  
+12V @ 100 ma  
-12V @ 100ma
- Interfaces:
  - VME Connector
  - Standard RS422 Controller pinout
  - RJ45 "AUX" port: RS232
  - RJ45 "Serial" port: RS232
- Control Lines: RTS, CTS
- Optical Interface:
  - Connectors: ST, FC, SC
  - Dynamic Range: 23db @ 1310nm
  - Topologies:
    - + Single Fiber Daisy Chain
    - + Dual Fiber Daisy Chain
    - + Dual Fiber Redundant Self Healing
- Configurable Options:
  - Handshaking: On/Off
  - CTS Delay: 0 or 8 ms
  - Anti-Streaming: On/Off
  - Anti-Streaming Timing: 2s increments from 2s to 126s
  - Baud Rate: 1200, 2400, 9600, 19200, 38400, 56700, 115200
  - Parity: None, odd, even
- Performance: Bit Error Rate better than  $1 \times 10^{-9}$  within specified dynamic range (MTBF in excess of 100,000 Hrs)
- Front panel push button to clear Anti-Streaming
- Front Panel Indicators:
  - TX DATA Transmit RS232/485/422
  - RX DATA Received RS232/485/422
- Optional Internal Battery Back-up for optical continuity