



# FDM170 Series Fiber Optic Digital Modem



## Description

The FDM170 Fiber Digital Modem is specifically designed for Model 170 controllers to operate over Single or Dual Fiber Optic Rings. The FDM170 is 100% compatible with all modems in the FDM Series, e.g. FDM-FiberHub, FDM1SA standalone and the FDM2070-6D Plug-in for the 2070 Controller.

The FDM170 represents a new generation of fiber optic modems utilizing a Replaceable Operating System. As ITS requirements change, or new features become available, a new ROS Memory System can be created so as to provide a Migration Path to upgrade the existing system.

The modems can operate in the following topologies:

Point to Point  
Single Ring  
Daisy Chain  
Self-Healing Dual Counter Rotating Rings (DCRR)

When the FDM170 is operated in the DCRR format, it supports redundant communications paths, any single point of failure such as a modem failure or fiber cable cut, the system will automatically self heal around the point of failure making it the ideal choice for critical data communications.

Should the Master fail, a designated Auxiliary Master will automatically take over, this Aux-Master can be co-located with the Master or can be located anywhere in the ring. Any modem can be switched to operate as a Master, Auxiliary Master or Slave.

## FEATURES

- Master, Auxiliary Master or Remote operation
- *Intuitive Ring Status Display*
- ROS Memory System utilized to provide migration path and upgradeability
- Configurable Multiple Fiber Topology
- Immune to optical overloads
- All settings are externally switch selectable

Each modem has an *Intuitive Ring Status Display* that graphically mimics the switching status of the modem providing instant recognition as to the switching state of the modem and the ring system. Should a fold-back occur at a modem the display shows a pictorial view of the fold-back, its direction and all the other modems receive notification of this condition and flash the fold-back indication on their screens.

Automatic Receive Fiber Identification will flash either a 1 or 2 to identify the Ring 1 or Ring 2 fiber

The Modem can operate over Multimode or Singlemode fibers, is immune to optical overloads and therefore does not require the insertion of optical attenuators. The modem has no internal adjustments and all connections, adjustable options and their labeling are clearly accessible.

Anti-Streaming times are computer generated in precise, digitally programmed, 2 seconds increments starting from a base of 2 seconds to a maximum of 126 seconds to meet the demands for systems that require precise timing schemes.

The modem features a second or auxiliary RS232 port that can be utilized to connect to a hardwire or spread spectrum modem that will allow alternative communications mediums to be attached to a fiber communications system

**GDI Communications LLC**

**PO Box 1330, Verdi, NV 89439**

**Ph: 775-345-8000 Fax: 775-345-8010 E-mail: sales@sgdi.net**

FDM170—050306



# FDM170 Series Fiber Optic Digital Modem

## SPECIFICATIONS

### INTERFACES

#### Electrical

Plug-in unit	Standard 400 pin out Secondary AUX RJ45 jack
Data Rate	Up to 115.2 Kbps (Asynchronous)
Bit Error Rate	Better than $1 \times 10^{-9}$ within specified dynamic range
MTBF	In excess of 100,000 Hrs
Control Lines	RTS, CTS

#### Optical

Connectors	ST, FC, SC
Dynamic Range	12db @ 1300nm MM.
(Minimum)	21db @ 1310nm SM.

### USER ADJUSTABLE OPTIONS

#### Front Switches

Anti-Streaming	Clear (push button)
----------------	---------------------

Note: The anti-streaming feature clears automatically when a normal condition returns but the ERROR indicator stays on until cleared manually with the front panel push button.

#### Switches

Daisy Chain	Daisy Chain Configuration
Master/Slave	Master/Slave select
Aux-Mast	On/Off
2 Rings/1 Ring	Ring configuration
RS232/RS485	Data port operation selection
RTS/CTS	On/off
CTS	Delay time selection (0 or 8 ms)
Anti-Streaming	On/Off
Anti-streaming	Adjustable in 2 second increments from 2 to 126 seconds
Data Rate	Switch selectable 1200, 2400, 9600, 19200, 38400 56700, 115200 Bps
Parity	None, Odd, or Even

### INDICATORS

#### Front Panel

TX DATA	Transmit RS232/485/422 Data
RX DATA	Received RS232/485/422 Data
ANTI-STRM	Anti-Streaming
FIBER STATUS	Dual seven segment display

### FORM FACTOR

Plug-in Model... Type 400

### POWER REQUIREMENTS

Plug-in unit..... 200 ma Pk at  $\pm 12V$

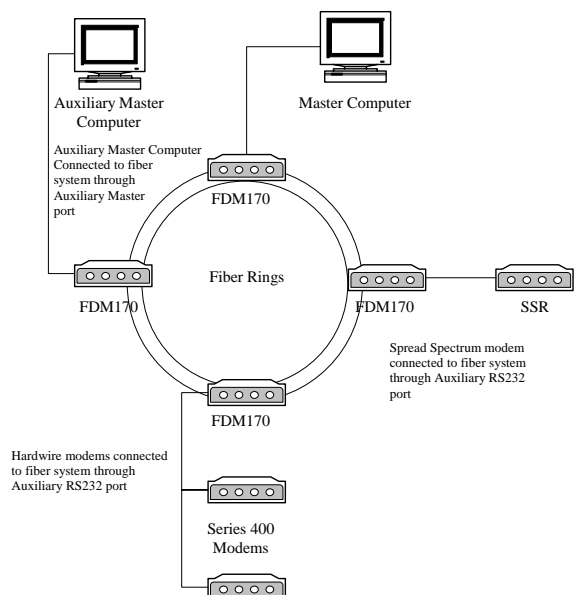
Optional Internal Battery Back-up for optical continuity

### ENVIRONMENTAL

Temperature	-37 to +74° C
Humidity	95% non-condensing

### VERSIONS

FDM170	-2 1300nm MM
	-3 1310nm SM



Specifications subject to change without notice

**GDI Communications LLC**

**PO Box 1330, Verdi, NV 89439**

**Ph: 775-345-8000 Fax: 775-345-8010 E-mail: sales@sgdi.net**