



FDM2-FiberHub

Fiber Optic Digital Modem



Description

The **FDM2-Fiberhub** is part of the **Fiber Digital Modem** series and provides active bi-directional, optical star communications to three optical ports. The FDM2-Fiberhubs can be ganged together either optically or electrically to provide further expansion. Two Auxiliary Data Ports are provided with full handshaking and Anti-Streaming capabilities. As with all FDM Series it shares the unique capabilities of being operated in many other topologies such as Point to Point, Daisy Chain and Dual Redundant Ring Formats. The FDM2-Fiberhub is 100% compatible with all modems in the FDM Series, e.g. FDM1SA Stand Alone, FDM170 Plug-in for the 170 Controller and the FDM2070-6D Plug-in for the 2070 Controller.

A typical FDM2-Fiberhub application would be in a Daisy Chain or Dual Redundant Ring format at a point where two arterials, main and secondary intersect. The requirement here is to tie in the secondary optical branch circuits into the main arterial fiber trunk. Another feature is the two Auxiliary Data Ports that can operate as a DTE or DCE with full handshaking. Connect one of these data ports into the local controller plus add in another data branch circuit such as a Spread Spectrum Radio to bring in that orphaned controller on line.

The FDM2-Fiberhub 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.

FEATURES

- **Four Port Optical Star**
- Intuitive Ring Status Display
- ROS Memory System utilized to provide migration path and upgradeability
- Configurable Multiple Fiber Topology
- Immune to optical overloads
- Key-on-data (KOD) functionality

When the FDM2-Fiberhub 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.

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 modems ergonomic design has no internal adjustments and all connections, adjustable options and their labeling are on the external surfaces of the modem.

Activating the KOD function sets the FiberHub's auxiliary data port(s) to act as a DTE device. Signals based on data received from the fiber system will generate an RTS handshake. This unique Key-On-Data capability is essential for communicating with a communications device that requires active RTS/CTS handshaking from a DTE device.

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.



FDM2-Fiberhub Fiber Optic Digital Modem

SPECIFICATIONS

INTERFACES

Electrical

Standalone	Aux Data Port 1 DB9F Aux Data Port 2 RJ45 RS232/485/422
Data Rate	Up to 115.2 Kbps (Asynchronous)
Bit Error Rate	Better than 1×10^{-9} within specified dynamic range
MTBF	In excess of 100,000 Hrs
Control Lines	RTS, CTS, KOD-RTS

Optical

Connectors	ST, FC, SC
Dynamic Range (Minimum)	23db @ 1310nm SM.

USER ADJUSTABLE OPTIONS

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.

Daisy Chain	Daisy Chain Configuration
2 Rings/1 Ring	Ring configuration
RS232/RS485	Data port operation selection
RTS/CTS	On/off
CTS	Delay time selection (0 or 8 ms)
KOD	RTS, Data Delay
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
PWR	DC Power
FIBER STATUS	Dual seven segment display

FORM FACTOR

Stand Alone	2.306" W x 6.15" H x 8" D
-------------	---------------------------

POWER REQUIREMENTS

Stand Alone	18-30 VDC
Optional	External 115 VAC Supply External 220-240 VAC Supply Battery Back-up (six hours)

ENVIRONMENTAL

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

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

FDM2-Fiberhub—101007



FDM2-Fiberhub Fiber Optic Digital Modem

