

# FOM-6MP

**RAD**

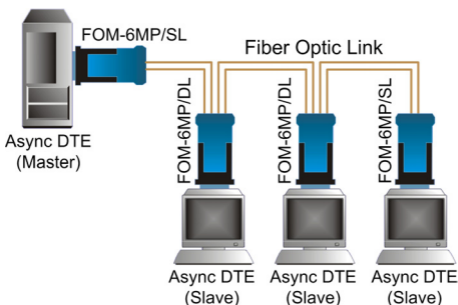
*Asynchronous Fiber Optic  
Multipoint Modem*



## FEATURES

- Asynchronous fiber optic modem for multidrop data distribution
- Data rates of up to 38.4 kbps
- Transmission range of up to 46 km (28 miles) over single mode fiber
- Automatic disabling of DTE port while streaming data
- Fiber optic interface options: multimode and single mode
- Compact, lightweight, easy to install
- Wide-range DC supply, 10V to 30V

## APPLICATION



## DESCRIPTION

- FOM-6MP is an asynchronous fiber optic multipoint modem used for multidrop data distribution to connect full- or half-duplex async computers and DTEs.
- FOM-6MP ensures data integrity transmitting over fiber optic links at distances of up to 46 km (28 miles). Only one fiber optic link is required between DTEs for transferring data in full-duplex.
- FOM-6MP is available with a single or dual fiber optic interface. The single fiber optic interface modem must be connected to the host (master) and the dual link versions must be attached to the slave DTEs.
- FOM-6MP/DL (dual link) contains bidirectional optical interfaces and a single V.24/RS-232 DTE interface. Data received on optical link A is sent to the DTE and repeated to optical port link B for transmission to the upstream FOM-6MP. When data is received on link B, it is repeated and transmitted to link A to respond to the master computer's request.
- FOM-6MP is used only in multidrop applications, where a host (master) transmits data to all DTEs (slaves), but only one slave responds. The responding DTE contends for transmission either by raising RTS or by transmitting data (user-selectable).

- To prevent port blockage while streaming data, a DTE port can be disabled automatically if it remains active for more than 1 or 13 seconds (time interval is user-selectable). The automatic disable resets if DTE RTS drops or data is not transmitted.
- Diagnostics include indication of DTE data receive and transmit status, and streaming detection. If FOM-6MP does not receive data from the fiber optic link, the LINK FLT A indicator lights. If transmission is not received by the remote unit, FOM-6MP sends a signal that flashes the local LINK FLT B indicator.
- FOM-6MP is powered by an external power supply or through the V.24/RS-232 DTE connector.



## SPECIFICATIONS

- **Data Rate**  
Up to 38.4 kbps
- **Transmission Line**  
Duplex optical cable
- **Transmission Mode**  
Asynchronous, full- or half-duplex
- **Transmission Controls**
  - Controlled by RTS or data contention (user-selectable)
  - Automatically disabled when RTS is Off or no data is being transmitted
- **Transmitter**  
850 nm VCSEL or  
1310 nm laser (see *Ordering*)
- **Fiber Optic Characteristics**  
See *Table 1*
- **Connectors**  
ST or FC (see *Ordering*)

**Table 1. Fiber Optic Characteristics**

Operating Wavelength/ Transmitter	Fiber Type	Typical Output [dBm]	Receiver Sensitivity [dBm]	Range	
				[km]	[mi]
850 nm / VCSEL	62.5/125 $\mu$ m multimode	-20	-36	3.7	2.2
1310 nm / Laser	9/125 $\mu$ m multimode	-30	-45	46.0	27.6

- **DTE Interface**  
V.24/RS-232, 25-pin, female connector
- **Indicators**  
See *Table 2*
- **Power**  
Powered by an external power supply (10–30 VDC) or via DTE interface connector, pin 9
- **Physical**  
Length: 18.2 cm (7.2 in)  
Height: 3.2 cm (1.3 in)  
Width: 11.4 cm (4.5 in)  
Weight: 325g (11.4 oz)
- **Environment**  
Temperature: 0°–50°C (32°–122°F)  
Humidity: Up to 90%,  
non-condensing

**Table 2. LED Indicators**

Indicator	Status	Description
Fiber Optic Link Status –2 LEDs: LINK FAULT A LINK FAULT B	Off	Normal operation
	On	Not receiving optical transmission
	Flashing	Remote side not receiving optical transmission
DTE interface	TD on	Transmit data
	RD on	Receive data
STREAM	Off	Normal operation
	On	Streaming detected
PWR	On	Power on
	Off	No power received



## INSTALLATION

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**Caution:** *When setting the jumpers or performing any actions inside the open product, be careful not to bend or break any components.*

To install FOM-6MP:

1. Set the DIP switches located on the side panel of the modem according to *Figure 1*, *Table 3*, and *Table 4*.
2. Connect the DTE cable (see *Figure 2* for the DTE connector pinout).
3. Remove the plastic dust caps from the fiber optic connectors and connect the cables to the unit as follows:
  - Connect link B Tx of the local FOM-6MP to link A Rx of the remote upstream unit
  - Connect link B Rx of the local FOM-6MP to link A Tx of the remote upstream unit.
4. If the unit is not powered from the DTE connector pin 9, connect the power supply connector to FOM-6MP, and plug the power supply into the mains.

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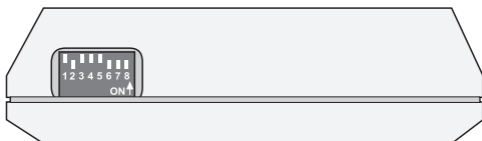
**This product may be equipped with a laser diode. For your safety:**



- **Do not look directly into the optical connectors while the product is operating.**
- **Do not attempt to adjust the laser drive current.**

**The use of optical instruments with this product will increase eye hazard.**

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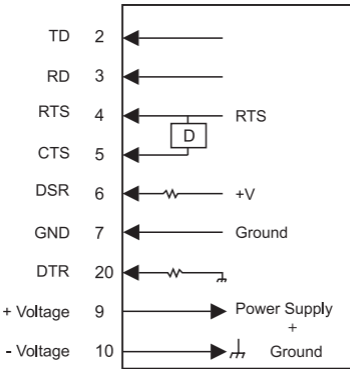
**Figure 1. DIP Switch Location**

**Table 3. DIP Switch Settings  
(SW1, SW2, SW6, SW7)**

<b>Identity</b>	<b>Function</b>	<b>Position</b> (Factory settings in bold)
SW1, Anti-streaming	Controls anti-streaming	↑ <b>Enable</b> ↓ Disable
SW2, Anti-streaming timeout	Controls anti-streaming timeout period	↑ 1 sec ↓ <b>13 sec</b>
SW3–SW5	See <i>Table 4</i>	
SW6, CTS delay	Controls delay between RTS ON and CTS ON	↑ 1 msec ↓ <b>13 msec</b>
SW7, Contention mode	Selects contention mode	↑ Data ↓ <b>RTS</b>
SW8	Reserved	No connection

**Table 4. Selecting the Data Rate  
(SW3, SW4, SW5)**

<b>Data Rate</b> [kbps]	<b>Position</b> (Factory settings shown in bold)		
	SW3	SW4	SW5
1.2	↓	↑	↓
2.4	↓	↑	↑
4.8	↑	↓	↓
9.6	↑	↓	↑
19.2	↑	↑	↓
38.4	↑	↑	↑



**Figure 2. DTE Connector Pinout**

## Declaration of Conformity

**Mfr. Name:** RAD Data Communications Ltd.

**Mfr. Address:** 24 Raoul Wallenberg St.

Tel Aviv 69719

Israel

declares that the product:

**Product Name:** FOM-6MP

Conforms to the following standard(s) or other normative document(s):

**EMC:** EN 55022 (1994):

Limits and methods of measurement of radio disturbance characteristics of information technology equipment.

EN 50082-1 (1992):

Electromagnetic compatibility – Generic immunity standards for residential, commercial and light industry.

### Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 89/336/EEC. The product was tested in a typical configuration.

Tel Aviv, October 2nd, 1996



Haim Karshen

Quality Manager

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## **ORDERING**

### **FOM-6MP/h/e**

Asynchronous fiber optic multipoint modem

- h** Specify number of fiber optic links:
  - SL** for single link
  - DL** for dual link
- e** Specify fiber optic interface and connector:
  - FC85** for 850 nm VCSEL, multimode, FC connector
  - ST85** for 850 nm VCSEL, multimode, ST connector
  - FC13L** for 1310 nm laser, single mode, FC connector
  - ST13L** for 1310 nm laser, single mode, ST connector

### OPTIONAL ACCESSORY

#### **P/S-AC/12/800**

12 VDC / 90–264 VAC power supply



**data communications**

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