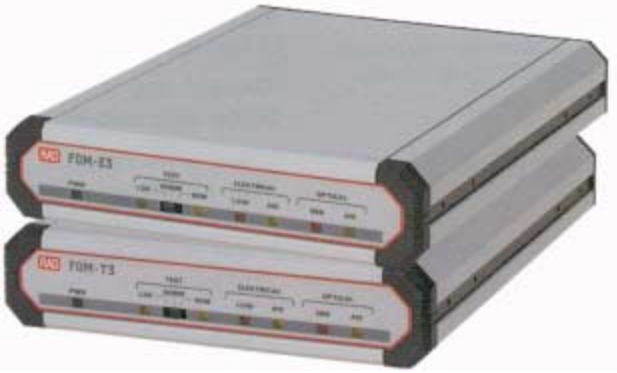
FOM-E3, FOM-T3

E3/T3 Fiber Optic Modems



- Front panel LEDs indicate system faults in the electrical and fiber optic circuits.
- Alarm relay port transmits the following alarm conditions:
  - Minor alarm – AIS received at electrical or fiber optic interface
  - Major alarm – Low level of E3/T3 electrical input level or high bit error rate at the fiber optic interface.

FEATURES

- High speed fiber optic modems, extending the range of E3/T3 services over optic cables up to 110 km (68.35 miles)
- Transparent to E3/T3 signals
- Operate opposite RAD's DXC cross-connect system, Optimux-XLE1 multiplexer (FOM-E3) and Optimux-T3 multiplexer (FOM-T3)
- Available with laser diode option for extended ranges
- Support WDM for transmission over a single fiber
- Conform with all relevant ITU series standards, including V.54 diagnostics support
- Operate over single mode or multimode fibers
- Front panel LED indicators for status monitoring
- Relay of minor and major alarm conditions

DESCRIPTION

- FOM-E3 and FOM-T3 fiber optic modems convert an E3/T3 electrical signal into an optical signal. After the conversion, the signal is transmitted over fiber optic cable, extending the E3/T3 service range up to 110 km (68.35 miles).
- FOM-E3 and FOM-T3 support various optical interfaces:
  - 850 nm for multimode fiber
  - 1300 nm for single or multimode fiber
  - 1300 nm and 1550 nm laser diode, long haul laser for extended range over single mode fiber
  - WDM laser for transmission over a single fiber.
- FOM-E3 and FOM-T3 operation complies with ITU G.703. G.921 and G.956 standards.
- The modems support activation of local and remote loopbacks in compliance with ITU V.54.

SPECIFICATIONS

E3/T3 ELECTRICAL INTERFACE

- **Transmission Rate**
  - E3: 34.368 Mbps
  - T3: 44.736 Mbps
- **Impedance**
  75Ω, unbalanced
- **Zero Suppression**
  - E3: HDB3
  - T3: B3ZS
- **Connectors**
  Two BNC connectors

FIBER OPTIC INTERFACE

- **Specifications and Ranges**
  See *Table 1*
- **Connectors**
  ST, SC or FC (see *Ordering*)

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E3/T3 Fiber Optic Modems

GENERAL

- **Diagnostics**
  Comply with ITU V.54; local and remote loopbacks activated via front panel slide switch
- **Indicators**
  PWR – ON when the unit is powered up
  OPTICAL AIS – ON when "all 1s" string is received at fiber optic interface
  OPTICAL ERR – ON when bit error rate is 10^{-6} or worse
  ELECTRICAL LOW – ON when electrical interface input is below G.703 level
  ELECTRICAL AIS – ON when "all 1s" string is received at electrical interface
- **Alarm Relay Port**
  Dry contact via 9-pin, D-type, female connector.
  Operates as Normally Open and Normally Closed, using different pins.
- **Power**
  AC: 100–240 VAC, 47–63 Hz
  DC: -48 VDC
- **Physical**

Height:	4.4	cm	/ 1.7	in
Width:	19.4	cm	/ 7.6	in
Depth:	24.3	cm	/ 9.6	in
Weight	1.4	kg	/ 3.0	lb

- **Environment**
  Temperature: 0–45°C/32–113°F
  Humidity: Up to 90%, non-condensing

Table 1. FOM-E3 and FOM-T3 Fiber Optic Interface Characteristics

Wavelength (nm)	**Fiber Type** (µm)	**Transmitter Type**	**Power** (dBm)	**Receiver Sensitivity** (dBm)	**Typical Max. Range** (km/miles)
850	62.5/125 multimode	LED	-18	-28	2.5/1.55
1300	62.5/125 multimode	LED	-18	-31	5.5/3.4
1300	9/125 single mode	LED	-15	-31	27/16.8
1300	9/125 single mode	Laser	-12	-31	38/23.6
1300	9/125 single mode	Laser (long haul)	-2	-34	70/43.4
1550	9/125 single mode	Laser	-12	-31	68/42.2
1550	9/125 single mode	Laser (long haul)	-1	-34	110/68.35
1300/1550	9/125 single mode	Laser (WDM)	-12	-30	40/24.8

Notes:

- *Receiver sensitivity above was calculated for BER = 10E-9.*
- *Ranges above were calculated according to the following typical attenuation rates: 3.5 dB/km for 850 nm multimode, 0.4 dB/km for 1300 nm single mode, 0.25 dB/km for 1550 nm single mode.*

ORDERING

FOM-E3/*/#/&
E3 fiber optic modem

FOM-T3/*/#/&
T3 fiber optic modem

* Specify power supply:
AC for 100 to 240 VAC
48 for -48 VDC

Specify fiber optic interface type (**#** for connector type, followed by **&** for optical wavelength):
ST for ST type connector
SC for SC type connector
FC for FC type connector

& **85** for 850 nm, multimode
13MM for 1300 nm, multimode
13 for 1300 nm, single mode
13L for 1300 nm, single mode, laser diode
15L for 1550 nm, single mode, laser diode
13LH for 1300nm, single mode, long haul laser diode
15LH for 1550 nm, single mode, long haul laser diode
SF1 for transmit 1300 nm, receive 1550 nm, WDM laser
SF2 for transmit 1550 nm, receive 1300 nm, WDM laser

APPLICATION