

# FRM220-FOM04

## 4x E1/T1 + FE Fiber Multiplexer

The FRM220-FOM04 is a 4 channel E1/T1 fiber multiplexer with an additional wire speed 100M Ethernet trunk, plus order wire and clear channel RS-232, constructed as a two slot wide card for the FRM220 series. When the FRM220-FOM04 card is placed in the FRM220 rack with NMC, the administrator can view the converter card's status, type, version, fiber link status and alarms. Remote, fiber connected standalone card, can also be managed through in-band management via the chassis NMC. The card can be configured to enable or disable the port, reset the port, and provide local or remote diagnostic loopback. The 1+1 redundant optical aggregate of this multiplexer employs industry standard pluggable optics (SFP) operating at OC3/STM-1 data rates (155M). The SFP modules can be chosen to support single-mode, multi-mode, single fiber bi-directional or Coarse and Dense Wave Division Multiplexing (CWDM and DWDM).



## Features

- 4 channels unframed E1/T1 (transparent)
- 10/100Base-TX Ethernet (100M wirespeed)
- Auto MDI/MDIX & Auto-Negotiation or Force Mode
- Supports flow control 802.3x & 9K jumbo packets
- Supports link fault Pass-Through for Ethernet
- One clear channel RS232 up to 250Kbps(Async)
- 1+1 fiber protection, switching time < 50ms

- Supports Digital Diagnostics Monitoring Interface (DDMI) SFP
- AIS on signal loss on E1/T1 and fiber port
- Loopback test on E1/T1, RS232, fiber ports
- Supports local or remote In-band management (Monitor or Configure status) by SNMP manager and console port
- Supports Order wire Ear / Microphone port
- Supports On-Line F/W upgrade & Dying Gasp

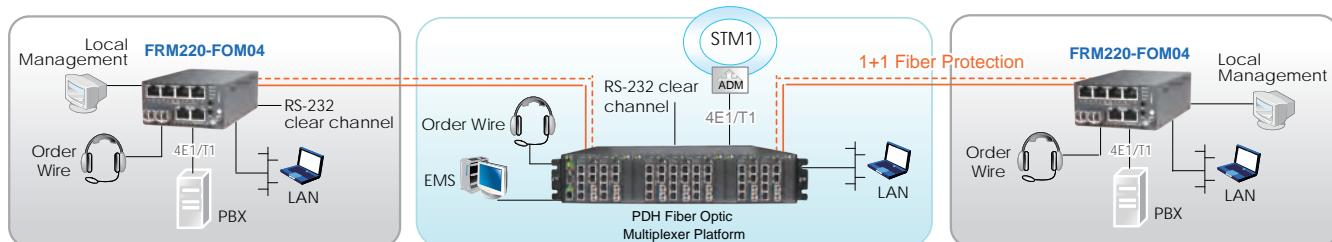
## Specifications

<b>E1/T1 ports</b>	Framing	Unframed (transparent)
	Bit Rate	E1:2.048 Mb/s , T1: 1.544Mb/s
	Line Code	E1:AMI/HDB3, T1: AMI/B8ZS
	Line Impedance	E1: Unbalanced 75 ohms (BNC cable) E1: Balanced 120 ohms (RJ-45) T1: Balanced 100 ohms (RJ-45)
	Receiver sensitivity	Short haul
	"Pulse" Amplitude	Nominal 2.37V+/-10% for 75 ohms Nominal 3.00V+/-10% for 120 ohms
	"Zero" Amplitude	+/-0.3V
	Internal Timing	+/-30 ppm
	Jitter Performance	According to ITU-T G.823
	Performance monitoring	According to ITU-T G.821
	Standards	ITU-T G.703, G.704, G.706 and G.732
	Interface Connectors	RJ-45
<b>E1/T1 ports</b>	Test Loops	LLB (Local Loop Back) NELB (Near End Loop Back)

<b>E1/T1 ports</b>	Test Loops	RLB (Remote Loop Back) RRLB (Request Remote Loop Back)
<b>Fiber</b>	Connector	SFP LC
	Data Rate	155 Mbps
<b>Ethernet</b>	Interface Type	10/100Base-TX
	Connector	RJ-45
	Standards	IEEE 802.3, 802.3u
	Duplex modes	full/half
<b>Indications</b>	FX1 Link, FX2 link, E1/T1 Mode/Link/Loopback test, Order wire phone indicator, LAN Link/Speed.	
<b>Power Input</b>	12VDC	
<b>Power Consumption</b>	< 7W	
<b>Dimensions</b>	Card: 155 x 42.1 x 88mm (D x W x H)	
<b>Weight</b>	200g	
<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% RH (non-condensing)	
<b>Certifications</b>	CE, FCC	
<b>MTBF</b>	65,000hrs	

## Application

### Managed 4E1/T1 + Fast Ethernet Fiber Optical Multiplexer Application



-Related Products: FRM220-GFOM08/GFOM04 (8 or 4x E1/T1 + GbE FOM), FRM220-FOM01 (E1/T1+ FE FOM)

## Ordering Information

Model Name	Description
FRM220-FOM04-SR	4 x E1/T1 RJ-45 and 100Mbps Ethernet Fiber Optic Multiplexer card (optional SFP module)
FRM220-FOM04-SB	4 x E1 BNC and 100Mbps Ethernet Fiber Optic Multiplexer card (optional SFP module)

Connector Type

**FRM220 – FOM04 – □□**

Example: FRM220 – FOM04 – SR

**Note:** This card may be locally configured by its own console when placed in CH02M with fan.  
When connected as a remote to a managed central chassis, this card supports in-band management and only needs a CH02M chassis.