



# FRM220-FOM04

## 4x E1/T1 + FE Fiber Multiplexer

The FRM220-FOM04 is a dual slot, 4-channel E1/T1 plus 100M Fast Ethernet to 1+1 redundant fiber multiplexer card with an additional clear channel RS-232 and order wire. When the FRM220-FOM04 cards are 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 optical aggregate of this multiplexer employs either a fixed transceiver or 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 & 1514bytes MTU packets
- Supports link fault Pass-Through for Ethernet
- Supports Digital Diagnostics Monitoring Interface (DDMI) SFP
- Supports local or remote In-band management by SNMP manager and console port
- Supports On-Line F/W upgrade & Dying Gasp
- One clear channel RS232 up to 250Kbps(Async)
- 1+1 fiber protection, switching time < 50ms
- AIS on signal loss on E1/T1 and fiber port
- Loopback test on E1/T1, RS232, fiber ports
- Supports Order wire Ear / Microphone port

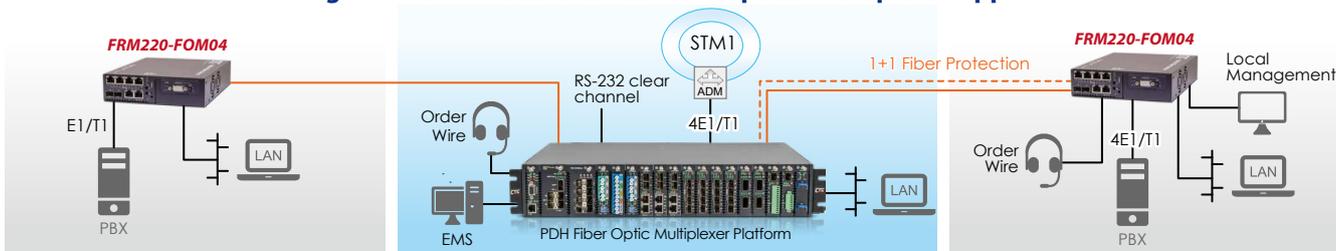
### Specifications

<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)
		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 +/-0.3V
	"Zero" Amplitude	w/external clock card option
	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	
Test Loops	LLB (Local Loop Back)	
	RLB (Remote Loop Back)	
	NELB(Near End Loop Back)	
	RRLB(Request Remote Loop)	

<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>	Power FX1 Link, FX2 link, E1/T1 Mode/Link/Loop back test, Order wire phone indicator, LAN Link/Speed.	
<b>Power Input</b>	12VDC	
<b>Power Consumption</b>	< 7W	
<b>Dimensions</b>	159.5 x 42.1 x 88mm (DxWxH)	
<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>	57,000hrs	

### Application

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



### 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	4x E1 BNC and 100Mbps Ethernet fiber optic multiplexer card (optional SFP module)

Connector Type

**FRM220 – FOM04 –**

Example: FRM220 – FOM04 – SR

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FE Fiber Multiplexer with In-Band Management FRM220-FOM04