



# FRM220-10/100i

10/100Base-TX to 100Base-FX In-Band Managed Converter

The FRM220-10/100i is a 10/100Base Ethernet to 100Base-FX fiber slide-in card converter designed for central and remote applications. With advanced features like bandwidth control, this media converter is targeted for customer premises equipment in metro LAN, campus, enterprise and FTTx applications. By offering in-band management, this converter can be completely controlled and monitored from a centrally located managed rack controlling all converter settings including bandwidth control, duplex, and speed configuration. This media converter is completely transparent to Layer 2 and Layer 3 protocols including IEEE 802.1q, VLAN tag, Q in Q, STP, IPX, IP, etc. When used stand-alone, this converter has no access to management functions except to force Ethernet connection and apply Link Fault Pass-thru via setting of a 4-pole DIP switch.

#### // Features

- 1-Port 10/100Base-TX to 100Base-FX Converter
- Auto-Negotiation or forced mode
- Supports remote CPE power fail detect (dying gasp)
- Supports Far End Fault Indication (FEFI)
- Supports Link Fault Pass-Through (LFPT)
- Supports Loop Back Test
- Supports RMON counter
- Auto Laser Shutdown (ALS)
- Auto MDI/MDIX
- Forward 2046 bytes (max.) packets in switch mode
- Forward 9K jumbo packets in converter mode

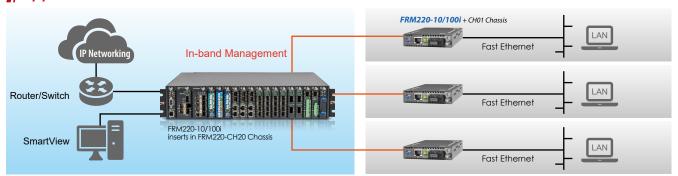
- Supports transparent Q in Q double tagged frame
- Supports IEEE 802.1q Tag VLAN pass thru
- Supports local / remote In-band management (Monitor and Configure) by the SNMP manager. (NMC)
- Bandwidth control (Nx32Kbps or Nx512Kbps)
- Supports IEEE 802.3x flow control (Pause)
- Fiber Hardware Reset (FHR)
- Online local / remote f/w upgrade

#### // Specifications

Ontical Interface	Connector	1 v 0 (00 0T EO)			
Optical Interface		1 × 9 (SC, ST, FC)			
	Data rate	125Mbps			
	Duplex mode	Full duplex			
	Fiber	MM 50/125µm, 62.5/125µm			
		SM 9/125µm			
	Distance	MM 2km, SM 15/30/50km			
		WDM 20/40km			
	Wavelength	MM 1310nm, SM 1310, 1550nm			
		WDM 1310Tx/1550Rx (type A)			
		1550Tx/1310Rx (type B)			
Electrical Interface	Connector	RJ45			
	Data rate	10Mbps, 100Mbps			
	Duplex mode	Half / Full duplex			
	Cable	10Base-T Cat.3, 4, 5, UTP			
		100Base-TX Cat.5, 5e or higher			
Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3x				
Indications	LED (Power, FEF, FX-Link, TX-SPD, TX-Duplex, TX-Link)				
Power Input	12VDC				
Power Consumption	< 6W				
Dimensions	159.5 × 20.8 × 88mm (D×W×H)				
Weight	120g				
Temperature	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)				
Humidity	10 ~ 90% non-condensing				
Certification	CE, FCC				
MTBF	65,000 hrs				



## // Application



**Central Office (CO)** 

**Customer Premise Equipment (CPE)** 

### // Ordering Information

Model Name	Description				
FRM220-10/100i	10/100Base-TX to 100Base-FX In-band managed converter card				
Connector Type	Connectivity Distance				
SC, ST, FC	002: 2km 015: 15km	030: 30km 050: 50km	1		
	20A: WDM 20km A type	20B: WDM 20km B type	40A: WDM 40km A type	40B: WDM 40km B type	