

NEW



FRM220-10G-FEC

10G Ethernet FEC Multi-rate Transponder

FRM220-10G-FEC is a conversion module suitable for high-speed 10G signals with Forward-Error-Correction (FEC). The module supports four flexible SFP+ ports suitable for wavelength conversion and the transferring application for 10GbE and STM-64. The main field of FRM220-10G-FEC application is cost-optimized CWDM and DWDM networks. As an intelligent transponder module, the FRM220-10G-FEC converts a transparent data channel to a corresponding CWDM/DWDM wavelength. By means of the implemented 3R functionality (re-amplification, re-shaping, re-timing) for signal processing, the module is also suited for the use as a repeater. The data rates between 9.95Gbps and 11.32Gbps can be provided. Two types of housings are available for installation in a 19" FRM220 chassis. 20 slots are provided by using the FRM220-CH20 chassis 2U while the FRM220-CH08 1U supports up to 8 modules. Both housings can be monitored and configured through SNMP, Web GUI or Telnet using a NMC management module.

Feature

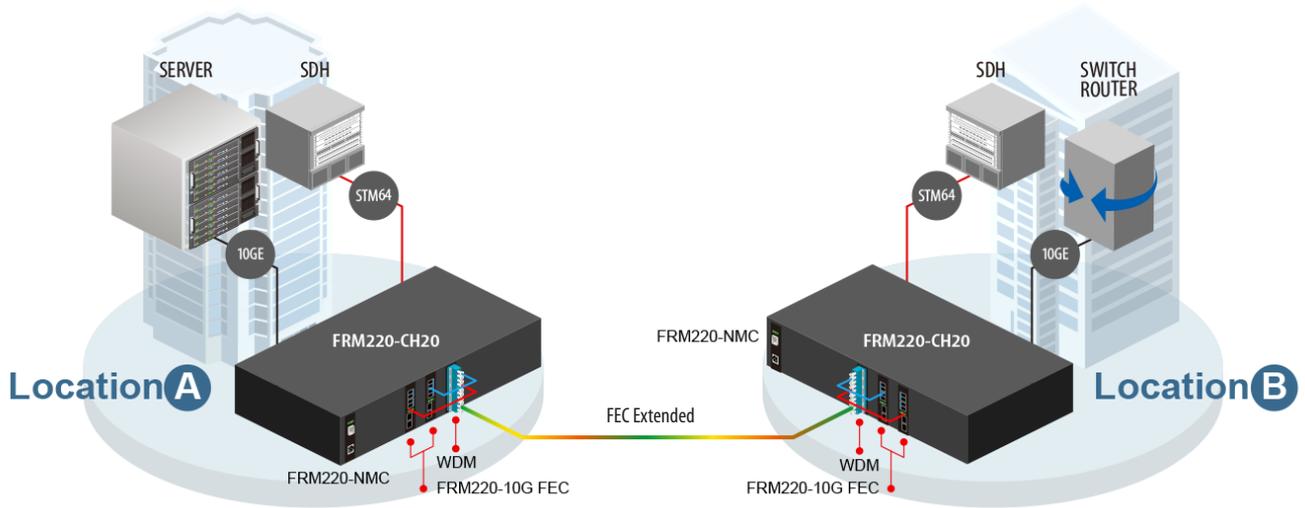
- Protocol transparent (9.95 – 11.32Gbps)
- 10Gbps signal repeating for 10GbE and STM-64
- 10Gbps conversion: Multimode, Single mode, CWDM, DWDM
- Future-proof and flexible SFP+ technology
- 3R functionality (Re-amplification, Re-shaping and Re-clocking)
- Low power consumption
- Wide range of applications
 - Dual OTN transponder or OTN repeater
 - Lambda conversion with FEC exchange
- Multiple clients data rate support
 - 10G Ethernet LAN/WAN PHY
 - 10G OC-192/ STM-64 SONET/SDH*
- Non OTN/FEC
 - 10G Ethernet LAN-PHY to LAN-PHY
 - 10G Ethernet LAN-PHY to WAN-PHY
- Per interface Forward Error Correction (FEC) encoding selection:
 - ITU-T G.709 Standard RS(255,239) (GFEC) – 6.2 dB
 - ITU-T G.975.1 Section I.7 Ultra-strong FEC with scaled - overhead (UFEC 7%) – 8.1 dB
 - ITU-T G.975.1 Section I.4 Ultra-strong FEC with scaled - overhead (UFEC 10%) – 8.3 dB
 - Zero FEC (wrapper done, FEC is zero)
 - No FEC (wrapper done, FEC is disabled)
- Comprehensive access performance monitoring
 - 10G Ethernet, 10G SONET/SDH*
- Comprehensive G.709 line and service performance monitoring
- Connection testing tools
 - Loopback
 - Notification or fault propagation
- SNMP management through NMC management module
- SFP+ transceivers for flexible configuration including DWDM
- SFP+ Digital Diagnostics

Specifications

General	1-slot module for integration in a FRM220 platform Operating temperature: 0°C – 40°C Dimensions (D x W x H): 155 x 88 x 23mm	Management	SNMP, Telnet and Web management using a NMC management module SFP+ management information provided by integrated DMI functions: input/output power, wavelength, bit rate, status, supported protocols, temperature
Interfaces	4x SFP+ ports (1 x line, 1 x client) Protocol : STM-64, 10G Ethernet Data rate: 9.92Gbps – 11.32Gbps depending on SFP+ type and application used	Housing Types	FRM220-CH08 1U 8-slot chassis FRM220-CH20 2U 20-slot chassis FRM220-CH02M, FRM220-CH02/NMC, 2-slot chassis
SFP+ Types	Optical (LC) 10Gigabit Ethernet (with or without FEC) STM-64 (with or without FEC) Multi-rate for 10Gigabit, STM-64 Wavelengths: 850nm, 1310nm, 1550nm, DWDM or tunable optics		

10G FEC Transponder

Application



Ordering Information

Model Name	Description
FRM220-10G-FEC	10G Ethernet FEC Transponder

Note: This card MUST be placed in CH02M chassis with fan.
For SNMP management, place this card in CH02/NMC or CH04A Chassis.