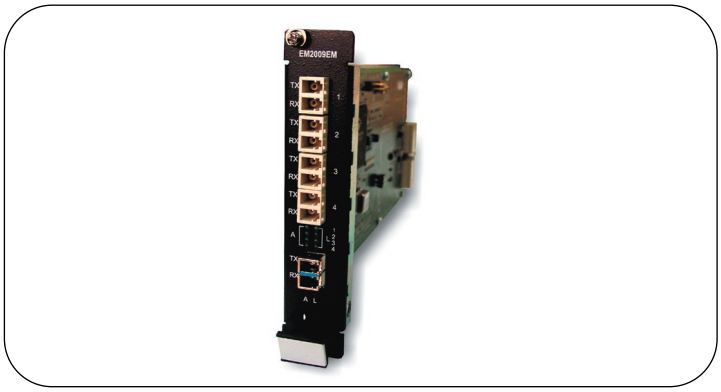
MRV Communications, Inc.

FIBER ACCESS SOLUTIONS

Datasheet

LambdaDriver® 4xESCON Module

4xESCON channels F/O TDM multiplexer module



EM2009-EM4/P

Overview

The TDM, or Time Division Multiplexing, is a widely accepted technology enabling multiple channels to be transmitted over one single line (fiber). The simplest application is just passing 4 x ESCON (200 Mbps Storage protocol) channels to distances up to 100 Km over two strands of regular Single Mode fiber.

Larger channels aggregation can be achieved by using DWDM (Dense Wavelength Division Multiplexing) or CWDM (Coarse Wavelength Division Multiplexing) technology. Placing 4x ESCON services over one CWDM/ DWDM wavelength will quadruple the capacity of an existing CWDM/ DWDM system.

As a result, 128 applications will be run over one fiber pair with 32 wavelengths.

Funtionality:

The EM2009-EM4/P concentrates four ESCON optical data streams onto one common link, thereby saving fiber by a factor of 4:1. The ultra compact design is ideally suited for ESCON applications, which often require many parallel links.

A combination of the EM2009-EM4/P and the LambdaDriver® DWDM or CWDM achieves extremely high levels of density. The electrically based multiplexing allows for a significant cost reduction and higher fiber utilization when compared to a pure optical multiplexing solution.

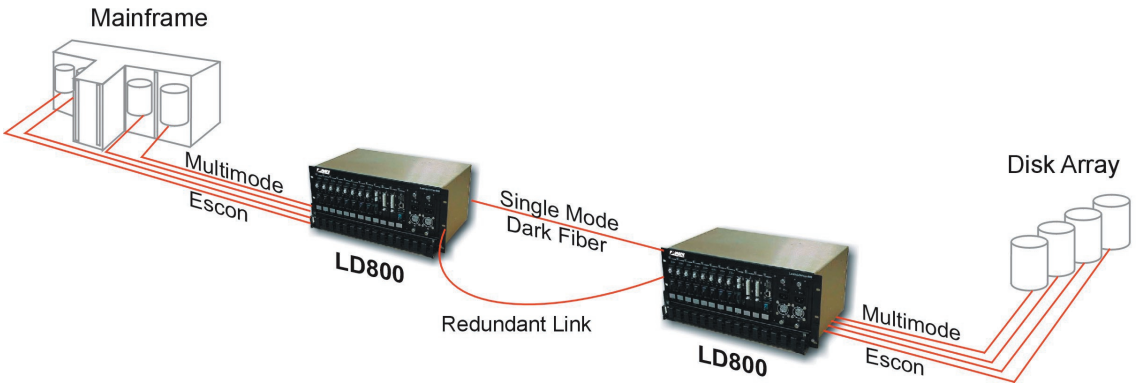
The 4 ESCON ports are standard Dual LC connectors working at 1310nm wavelength over Multimode fiber (Single Mode optional). The aggregation port is running 1Gbps proprietary protocol through SFP (Small Form Factor Pluggable – LC Duplex connector) receptacle. Any 1Gbps SFP transceiver can be used, therefore providing a wide range of applications for different fiber types (MM or SM) and distances (using different SM SFP transceivers). Using CWDM SFP transceiver allows direct connection to CWDM network through CWDM OADM or Multiplexer.

Features

- Fiber Driver-LD (LambdaDriver®) transponder slot size
- ESCON ports: multimode, 1310 nm, Dual LC
- Trunk port: Standard SFP receptacle
- Trunk port data rate : 1Gbps
- Placing 4xESCON services over one CWDM or DWDM wavelength

Applications

- Remote site connection over Multimode or Singlemode fiber
- Disaster recovery site connection
- Redundancy storage with 1+1 protection
- A combination of ESCON and other services in one chassis for transmission over a single fiber pair
- 4xESCON services for transmission over optical wireless systems (TereScope®)



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Technical Specifications

ESCON Interfaces	LC Duplex Connectors MM-1300nm / 50-200Mbps Tx Power –21dBm min / -14dBm max Rx Sensitivity –32dBm min / Saturation -14dBm
TDM trunk interface	SFP receptacle
Management	SNMP and craft interface (RS232) as part of the LD400/800/1600 chassis
Temperature	Operating: 0 – 40 °C, non condensing Storage: 0 – 70 °C
Front Panel indicators	Loss of Signal indication and transmission error for all optical ports

Ordering Information

Subrate TDM Mux	
EM2009-EM4/P	4 ESCON ports (1310nm MM) TDM Multiplexer channel card with SFP trunk interface
LD1600 Platform	
LD1600	Lambda Driver-1600, 16 channels, Chassis without power supply (EM2005 power supplies should be ordered separately)
EM2005-PS/AC	AC power supply for the LD1600 (90-240V AC)
EM2005-PS/DC	DC power supply for the LD1600 - (48V AC)
EM1600-MNG	MNG Management Module for the Lambda Driver-1600
LD800 Platform	
LD800/AC	Lambda Driver-800, 8 slot Chassis with single AC power supply (90-240V AC)
LD800/DC	Lambda Driver-800, 8 slot Chassis with single DC power supply (48V DC)
LD800/2AC	Lambda Driver-800, 8 slots Chassis with dual power AC supply (90-240V AC)
LD800/2DC	Lambda Driver-800, 8 slots Chassis with dual power DC supply (48V DC)
EM800-PS/AC	Redundant power supply for the LD800/AC (90-240V AC)
EM800-PS/DC	Redundant power supply for the LD800/DC (48V DC)
EM800-MNG	MNG Management Module for the Lambda Driver-800
LD400 Platform	
LD400/AC	Lambda Driver-400, 4 slot Chassis for WDM with single AC power supply (90-240V AC)
LD400/DC	Lambda Driver-400, 4 slot Chassis for WDM with single DC power supply (48V DC)
LD400/2AC	Lambda Driver-400, 4 slots Chassis for WDM with dual power AC supply (90-240V AC)
LD400/2DC	Lambda Driver-400, 4 slots Chassis for WDM with dual power DC supply (48V DC)
EM400-PS/AC	Redundant power supply for the LD400/AC (90-240V AC)
EM400-PS/DC	Redundant power supply for the LD400/DC (48V DC)
SFP transceivers	
SFP-EFG	SFP Copper (10/100/1000) RJ45 (must be used in pairs with MRV Pluggable Optical Modules)
SFP-G-SX	SFP 1000Base-SX, MM, 850nm, 0-550m
SFP-G-MX	SFP 1000Base-SX, Extended MM, 1310nm, 0-2km
SFP-G-LX	SFP 1000Base-LX, SM, 1310nm, 10km
SFP-GD-ELX	SFP 1000Base-ELX, SM, 1310nm, 25km, with Digital Diagnostics.
SFP-GD-XD	SFP 1000Base-XD, SM, 1550nm, 50km
SFP-GD-ZX	SFP 1000Base-ZX, SM, 1550nm, 80km, with Digital Diagnostics
SFP-GD-EZX	SFP 1000Base-EZX, SM 1550nm, 120km, with Digital Diagnostics.
SFP-GCWXD-XX	SFP 1000Base-XD, SM CWDM (XX=Wavelength 1470-1610nm), 20db, CWDM
SFP-GDCWZX-XX	SFP 1000Base-ZX, SM CWDM (XX=Wavelength 1470-1610nm), 24db, CWDM with Digital Diagnostics.
SFP-GDCWEZX-XX	SFP 1000Base-EZX, SM CWDM (XX=Wavelength 14710-1610nm) 120km with Digital Diagnostics.

Note: For different optical interfaces and CWDM/DWDM solutions, please contact your local representative.

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