

SFP Media Cross-Connect



Overview

With the introduction of the Fiber Driver SFP Media Cross-Connect chassis (NC316-XP32-3R and NC316-XP32-2R), MRV Communications has brought fiber optic connectivity to a new level of flexibility and scalability. These products have been designed with leading-edge features, including any-port-to-any-port connectivity, software selectable data rates, protocol transparency, Small Form Factor Pluggable (SFP) optical interfaces, and support for physical layer multicasting.

With these features the SFP Media Cross-Connect chassis enable the implementation of an unprecedented range of optical networking solutions from media conversion, distance extension and signal repeating to lambda conversion and Wave Division Multiplexing (WDM), all within a compact, fully managed platform. With a high-density form factor, a single chassis can manage up to 16 separate data channels (32 data ports) in just 1 U of rack space.

The NC316-XP32-3R performs full 3R (retime, reshape and retransmit) signal regeneration per data channel at any selected data rate from 100 Mbps to 2.7 Gbps (100 MHz to 2.7 GHz). This range covers Fast and Gigabit Ethernet, FDDI, ESCON, SONET (OC-3, OC-12, OC-48 and OC-48 with FEC), Fibre Channel (1 Gbps & 2 Gbps), Serial Digital Video Interface (SDI) SMPTPE-269 and SMTPE-292, DVB, HDTV (1.5 Gbps), and many other protocols.

The NC316-XP32-2R automatically and transparently handles data connections with rates from 100 Mbps to 2.7 Gbps (100 MHz to 2.7 GHz) while performing 2R (reshape and retransmit) signal conditioning. It is compatible with Fast and Gigabit Ethernet, FDDI, ESCON, SONET (OC-3, OC-12, OC-48 and OC-48 with FEC), Fibre Channel (1 Gbps & 2 Gbps), Serial Digital Video Interface (SDI) SMPTPE-269 and SMTPE-292, DVB, HDTV (1.5 Gbps), and any other protocol within the range.

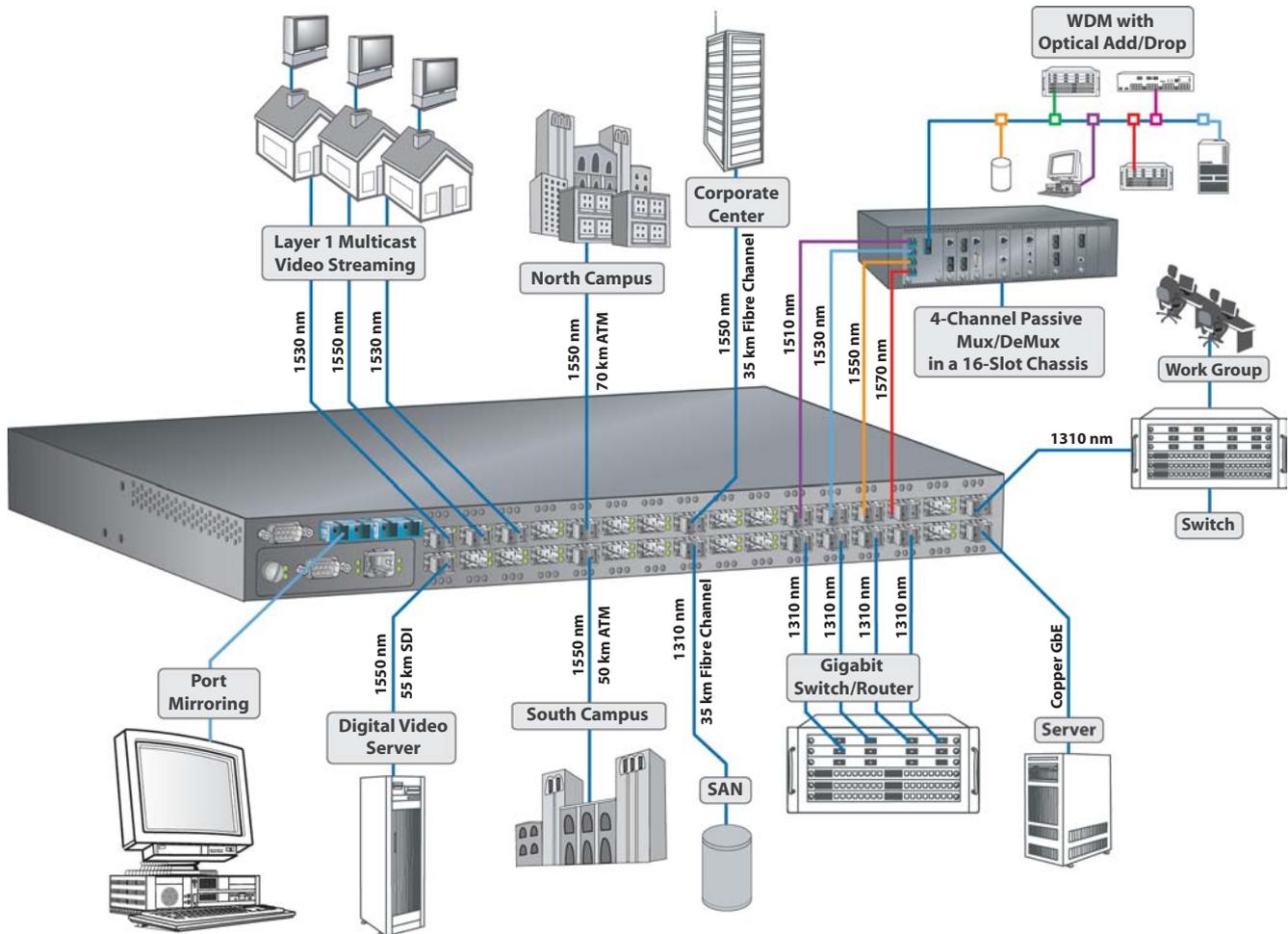
Used in conjunction with an external Mux/Demux unit - such as the 4- or 8-channel Fiber Driver CWDM Passive Mux/Demux (EM316PA4N, EM316PA8N) - and configured with corresponding wavelength-specific SFPs, a SFP Media Cross-Connect can be used to create a highly flexible and scalable WDM solution for any combination of supported protocols. The NC316-XP32-3R can also be used to create a WDM repeater with or without wavelength conversion.

Features

- Any-port-to-any-port connectivity, including physical layer multicasting
- Per connection selectable data rates from 100 Mbps to 2.7 Gbps (NC316-XP32-3R)
- Protocol transparency from 100 Mbps to 2.7 Gbps (NC316-XP32-2R)
- Utilizes Small Form Factor Pluggable (SFP) optical transceivers
- High-density form factor - 32 data ports / 16 data channels in 1 U of rack space
- Performs full 3R clock and data recovery (NC316-XP32-3R)
- Supports SFP digital diagnostics as per SFF-8472
- Wide range of applications
- Provides two protocol independent monitoring ports

Benefits

- Ultimate in flexibility and scalability
 - Add/Change optics and adjust data rates as needed
 - Maintain single item inventory
- MRV Communications provides a complete range of optical and copper plug-in interfaces
 - Solutions for multiple standard wavelengths (850 nm, 1310 nm, 1550 nm)
 - Solutions for CWDM wavelengths (ITU-T G.694.2 (2002)): 1470 nm-1610 nm with 20 nm deltas
 - Future solutions for DWDM (ITU-T G.694.1 (2002))
- Wide range of applications based on SFP selection:
 - Media conversion
 - Distance extension
 - Signal repeating, including WDM (NC316-XP32-3R)
 - Lambda conversion
 - CWDM system
 - DWDM system (future implementation through DWDM SFP)



Establishing a data connection with a SFP Media Cross-Connect chassis is straightforward. Simply insert the SFP transceivers into the chassis and then via software management set the port-to-port connections, including port-to-multiport. For the NC316-XP32-3R, the interface data rate is also set.

Changing port-to-port assignments is easily done at any time through management. Changing a connection type requires only changing the SFP transceivers and setting the new interface data rate if needed. With the hot swappable functionality of the SFP transceivers there is virtually no down time involved.

Because SFP transceivers are portable they can be easily used again at different locations for different applications, thus maximizing the investment in optics and equipment, and reducing the need for on-hand parts inventory. MRV Communications provides a complete range of optical and copper plug-in interfaces for the SFP Media Cross-Connect.

Both Fiber Driver SFP Media Cross-Connect chassis fully support the SFP standard including digital diagnostics as per SFF-8472. Configured with the Fiber Driver Network Management Module (EM316NM), the chassis provide real-time access to information such as transceiver type

(protocol, range, vendor, etc.), transceiver temperature, TX/RX optical power, and transceiver supply voltage. They can also be set to generate management alerts and warnings should system parameters fall outside of normal operating range.

Two monitoring ports are built into each SFP Media Cross-Connect chassis. These ports are protocol independent and can be used to monitor any combination of active ports, providing network administrators with a powerful network diagnostic tool.

With the EM316NM-PMC, the SFP Media Cross-Connect chassis can be managed through SNMP, Telnet or the local CLI. They are supported through the graphical user interface of MegaVision Web, MRV Communications' comprehensive Network Management System (NMS), and any other SNMP-compliant NMS.

For additional information, including pricing and availability, on these or any of the full line of MRV Communications products, contact your MRV Communication sales representative.

Physical Specifications: Layer 1 Media Chassis

Operating Temperature Range:	0°C to 50°C (32°F to 122°F)
Storage Temperature:	-40°C to 95°C (-40°F to 203°F)
Relative Humidity:	85% maximum, non-condensing
Physical Dimensions:	44 mm high x 442 mm wide x 286 mm deep (1.75" x 17.4" x 11.25")
Weight:	6.75 kg (14.88 lbs)
Mounting:	19" rack, 1 U
Emission Compliance:	FCC - PART 15, SUBPART B, 1999, CLASS A; CE MARK - EN 50081-1:1992; EN 50082:1997; EN 55024:1998; EN 55022:1998; AS/NZS 3548:1995

Ordering Info	Part Number	Function	Protocol	Connectors	Wavelength	Budget (dB)	Range
	NC316-XP32-3R	SFP Media Cross-Connect with selectable data rates	Any (100 Mbps-2.7 Gbps)	SFP (x32)	N/A (SFP dependent)	N/A (SFP dependent)	N/A (SFP dependent)
NC316-XP32-2R	SFP Media Cross-Connect with protocol transparency	Any (100 Mbps-2.7 Gbps)	SFP (x32)	N/A (SFP dependent)	N/A (SFP dependent)	N/A (SFP dependent)	

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