

## VFAST™ 100 Mbps Ethernet over Fiber

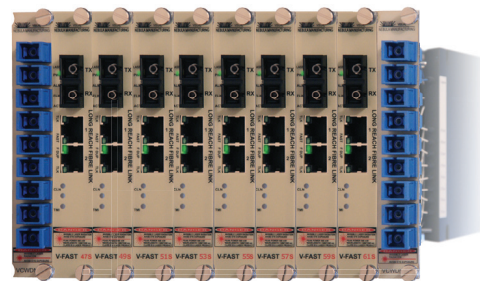
### VFAST8x System Overview

Nebula's VFAST 100 Mbps Ethernet Service solution gives service providers a scalable, cost-effective system to deploy Fast Ethernet services over fiber links. The VFAST 100 Mbps Ethernet system is a series of Ethernet to fiber converters, multiplexers and enclosures that let service providers deploy equipment just as needed, minimizing upfront investment and shortening the time to profit.

With Nebula's VFAST Ethernet over Fiber system, service providers can expand services and markets profitably, one customer, one building, one campus at a time.

VFAST 100 Mbps Ethernet products use Nebula's proven EtherOptic platform and offer:

- 100 Mbps Ethernet bridge with bidirectional link supervision,
- Low cost Ethernet /fiber line cards,
- Highly reliable communication links,
- Dedicated management port for link status monitoring,
- Plug and play architecture for non-intrusive deployment, and
- Incremental provisioning for profitable growth.

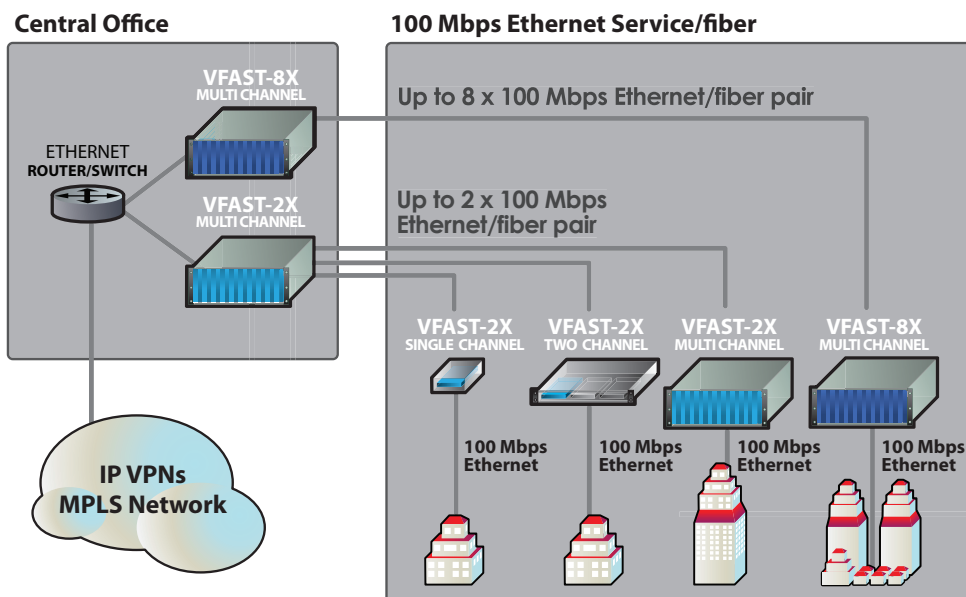


### VFAST 8x Highlights

- 1 - 8 100 Mbps Ethernet channels over fiber pair
- Incremental provisioning for rapid ROI
- Carrier grade
- Extends up to 35 miles (60 kms)
- Highly reliable, high redundancy
- Supervised communication link
- VFAST2x and VFAST8x components can be combined in the same Multichannel unit

The VFAST8x 100 Mbps Ethernet over Fiber system multiplexes up to eight 100 Mbps Ethernet channels onto a single fiber pair. The VFAST8x Multichannel Unit supports two full 8 x 100 Mbps systems which allows service providers to incrementally provision up to 16 x 100 Mbps channels from a single Nebula EtherOptic shelf.

The VFAST 100 Mbps Ethernet over Fiber family also includes the VFAST2x system, which supports up to two 100 Mbps Ethernet channels over a single fiber pair.



## VFAST8x 100 Mbps Ethernet System Details

### VFAST8x Units

VFAST8x Multichannel unit	A 20 slot cabinet designed for CO environments. Fits in a 3U 19" rack. Convection cooled. Can be configured with: <ul style="list-style-type: none"> <li>• Up to 20 line cards (20x100 Mbps over individual fiber pairs; 2 Gbps total)</li> <li>• Up to 2 sets of 8 multiplexed line cards using the VFAST CWDM (2 x 800 Mbps over 2 fiber pairs; 1.6 Gbps total)</li> </ul>
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### VFAST Line Card Technical Specifications

Description	Establishes a 10 or 100 Mbps supervised Ethernet bridge over a fiber pair.							
Frequency Options	1470 nm	1490 nm	1510 nm	1530 nm	1550 nm	1570 nm	1590 nm	1610 nm
Transmit Level	-2-0 dBm							
Receive Level	-32 dBm							
Link Budget	30 dBm							
	<ul style="list-style-type: none"> <li>• Receiver overload better than -3 dBm (0 dBm typical)</li> <li>• Receiver optical damage greater than +3 dBm</li> </ul>							
Connections	<ul style="list-style-type: none"> <li>• 2 optical connectors (Tx and Rx). Both FC or SC connector types available.</li> <li>• 2 RJ45 twisted pair ports 2nd port for monitoring</li> </ul>							
Indicators	<ul style="list-style-type: none"> <li>• Power/Laser on</li> <li>• Fiber Problem (alarm)</li> <li>• Alarm disabled (test mode)</li> <li>• Full duplex</li> <li>• Fiber link detected</li> </ul>				<ul style="list-style-type: none"> <li>• Collision</li> <li>• Twisted pair activity</li> <li>• Port one link pulses detected</li> <li>• Port two link pulses detected</li> <li>• 100 megabit operation</li> </ul>			
Option Settings	<ul style="list-style-type: none"> <li>• 10/100 Mbps</li> <li>• Simplex/Duplex</li> <li>• Increase interpacket gap</li> </ul>				<ul style="list-style-type: none"> <li>• Duplicate traffic on both ports</li> <li>• Disable alarm (test mode)</li> <li>• Enable traffic shaping</li> </ul>			
Power	Power Supply		12 V or -48 V (redundant) DC					
	Power Consumption		7 W					
Environmental	Operating Temperatures		-5 to 150° F (-20 to 65° C)					
	Humidity (Relative)		10–90% non-condensing					
Dimension	1 slot (0.8 inches) wide, 3U (5 1/4 inches) high, 7.3 inches deep							

### VFAST CWDM Multiplexer Technical Specifications

Description	Combines up to eight wavelengths on a single fiber pair.
Connections	18 optical connectors. Both FC or SC connector types available. <ul style="list-style-type: none"> <li>• 9 [8 Rx, 1 Tx] for transmit</li> <li>• 9 [8 Tx, 1 Rx] for receive</li> </ul>
Central Wavelengths	1471 nm, 1491 nm, 1511 nm, 1531 nm, 1551 nm, 1571 nm, 1591 nm, 1611 nm (pass band +/- 10 nm minimum)
Channel Isolation	Greater than 30 dB
Insertion Loss	Less than 3.6 dB
Dimensions	2 slots (2x 0.8 inches) wide, 3U (5 1/4 inches) high 7.3 inches deep