

WDM16 / WDM8A

ACTIVE WAVEDIVISION MULTIPLEXER

Overview

The FiberPlex WDM is an 8 or 16 Channel Active Wavelength Division Multiplexer. Simply put, it is a device which allows the user to combine up to 16 sources of data on a single fiber pair. Each channel can be linked via fiber with selected FiberPlex FOM, FOI or TD Series fiber modules, FiberPlex LightViper™ or with virtually any third party fiber optic equipment with data rates from 155 megabits up to 3 gigabits per channel, for a possible maximum aggregate data rate of 48 Gbps. Alternately, the WDM can be combined with our vast selection of copper SFP modules and connect HD Video, Ethernet, audio and more directly into a channel.



WDM16 Front View

WDM Theory of Operation

Infrared light has a frequency of approximately 400 Terahertz (400,000 Gigahertz). That is about 125,000 times higher than the data rate of a typical 3 Gigabit SFP, which means a large proportion of the bandwidth of a fiber optic cable is wasted. The current state of the art does not allow utilizing all of that bandwidth, but we can recover some of it by a technique called "Coarse Wave Division Multiplexing," or "CWDM."

Essentially, it is the simple technique of taking each 3 Gigabit channel and using it to modulate a different frequency in that 400 Terahertz bandwidth. This is done through a series of optical filters and combiners, along with lasers and photodiodes tuned to a particular infrared center frequency. Historically, however, optics are referred to, not by their frequency, but by their wavelength, which is the speed of light divided by the frequency.

In the traditional implementation of a CWDM, it is the user's responsibility to provide the tailored SFPs and the CWDM itself, which may require adapters to interface with the user equipment. The FiberPlex WDM line, on the other hand, is an active WDM, with the wavelength-specific components already tested and configured. Instead of a wavelength-specific optical fiber, a generic SFP electrical interface is provided for each channel. Any SFP that conforms to the SFP Multi Source Agreement (MSA) can be inserted, even copper-based SFPs like gigabit Ethernet, 3G-SDI video, HDMI or MADI.

The internal SFPs have a full 3 Gigabit bandwidth, video-optimized for SMPTE video signals. Generic fiber SFPs may exhibit limitations in passing SMPTE video signals as they have problems maintaining a constant DC bias with the SMPTE encoded data.

Features:

- 16 (or 8) Channel Active Wave Division Multiplexer
- Combines 16 (or 8) optical channels into a single fiber pair
- Each channel independently supports data rates from 155 Mb up to 3 Gb
- SMPTE compatible internal fiber optics, video optimized to support Pathological Signals
- Each optic channel can independently accept multimode or single mode optics, coax connection or CAT5 using flexible SFP modules
- Fully redundant, hot swappable power for ultimate reliability

Applications:

- Campus Connectivity
- Distributed Security
- Data Centers
- Broadcast
- Live A/V Production
- Telecom Consolidation



WDM16 Rear View

Differences between WDM16 and WDM8A

The functional and physical characteristics of the WDM16 and WDM8A are largely identical. The single differentiator is the number of Active Wave Division channels and the associated internal wavelengths that are supported. The chassis dimensions and power supplies remain identical. The WDM16 supports all of the 16 standard CWDM wavelengths of 1310-1610 nm, whereas the WDM8A supports only 8 of those channels, so the installation can be scaled to the appropriate size. The WDM8A supports the upper 8 wavelengths 1470-1610 nm. Because of the enormously flexible active nature of the WDM16/8, the wavelengths of the internal channels are basically invisible and even irrelevant to the end user.

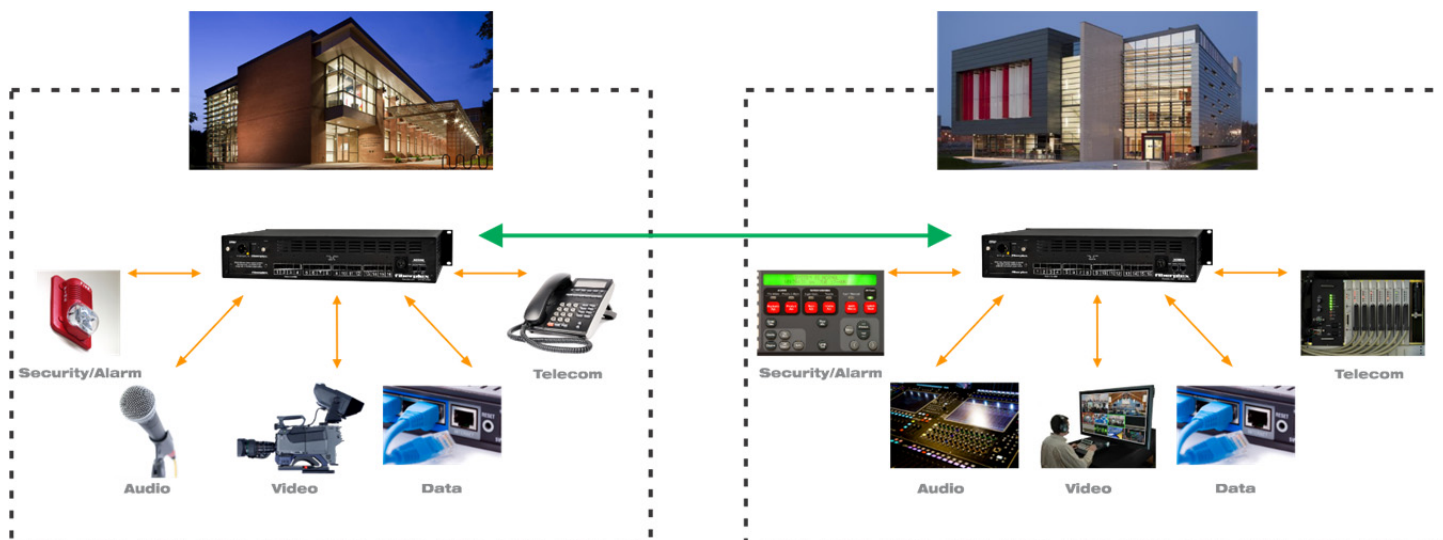
Model	Channels	Internal Wavelengths
WDM16	16	1310-1610 nm
WDM8A	8	1470-1610 nm

WDM16 / WDM8A

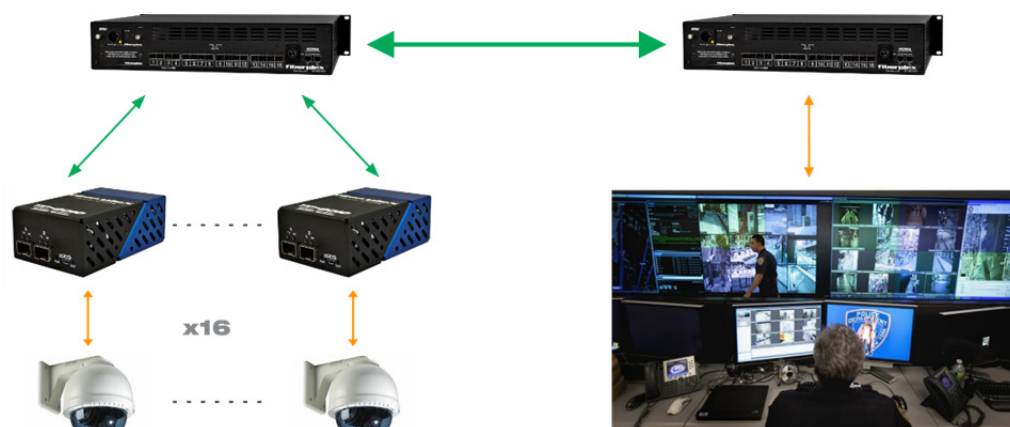
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Typical Applications

Campus Connectivity



Distributed Security



Specifications

PHYSICAL SPECIFICATIONS					
		Length	Width	Height	Weight
Case Dimensions (2U)		13 in (330 mm)	19 in (482 mm)	3.5 in (133 mm)	16.6 lb (7.5 kg)
ELECTRICAL SPECIFICATIONS					
		Min	Typ	Max	Units
Power Requirement with PSMAC	Voltage Range	90	-	230	VAC
	Power Consumption	-	65	-	W
Power Requirement with PSMDC	Voltage Range	36	-	72	VDC
	Power Consumption	-	65	-	W
External SFP Interfaces (1-16)		Min	Typ	Max	Units
Data Rate		155	-	3000	Mbps
Recommended Jitter		-	40	-	psec
Operating Voltage		-	3.3	-	VDC
Maximum Current		-	-	350	mA
Aggregate Interface Connector		Neutrik opticalCON DUO (LC)			