

WDP16 / WDP8A

PASSIVE WAVEDIVISION MULTIPLEXER

Overview

The FiberPlex WDP is a rack-mountable passive 8 or 16 channel coarse wavelength division multiplexer. Unlike



WDP16 Front View

the similar FiberPlex products in the WDM series, this unit is passive and all connected fiber optic modules must be externally selected to specific wavelengths. Being a passive unit, the WDP requires no external power and occupies a smaller 1U rack space. Fiber optic inputs and outputs are connected via singlemode duplex LC/PC mating sleeves in the rear of the unit.

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 modulating light on different frequencies 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 expressed in nanometers (nm).

Due to its passive nature, the WDP16 and WDP8 require the user to match the external equipment with the proper wavelength channel. There are several advantages of the WDP passive CWDM versus FiberPlex' active WDM system depending on application. The WDM16 and WDM8 will only accept digital signals via externally installed SFP modules. While this works for many applications, signals such as RF optical are analog in nature and cannot be used with SFP modules. These analog signals will work perfectly with the WDP16 and WDP8. In addition, since the WDP16 and WDP8 are passive, there is no power consumption or heat issues to deal with. Power supplies in electronic equipment are notoriously a point of failure. Since the WDP16 and WDP8 have no power supplies, they are inherently more reliable.

Features:

- 16 (or 8) Channel Passive Wave Division Multiplexer
- Combines 16 (or 8) optical channels into a single fiber pair
- Each channel independently has virtually unlimited bandwidth
- Supports both digital and analog optical signals
- Passive nature means higher reliability due to having no power supplies
- Compact and convenient 1U package
- Mux and De-Mux in one package

Applications:

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



WDP16 Rear View

Differences between WDP16, WDP8A and WDP8B

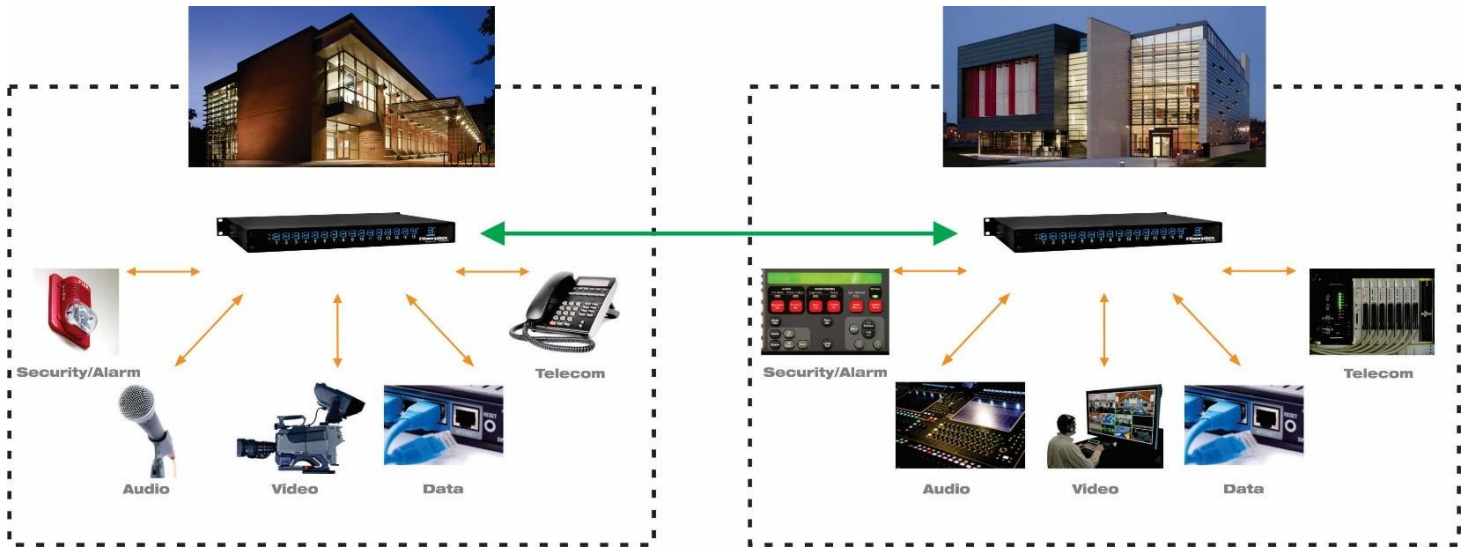
The functional and physical characteristics of the WDP16, WDP8A and WDP8B are largely identical. The single differentiator is the number of Wave Division channels and the associated internal wavelengths that are supported. The chassis dimensions remain identical. The WDP16 supports all of the 16 standard CWDM wavelengths of 1311-1611 nm, whereas the WDP8 units support only 8 of those channels, so the installation can be scaled to the appropriate size. The WDP8A supports the upper 8 wavelengths 1471-1611 nm and the WDP8B supports the lower 8 wavelengths 1311-1451nm.

When only 8 channel point to point functionality is desired, the WDP8A should be the model of choice.

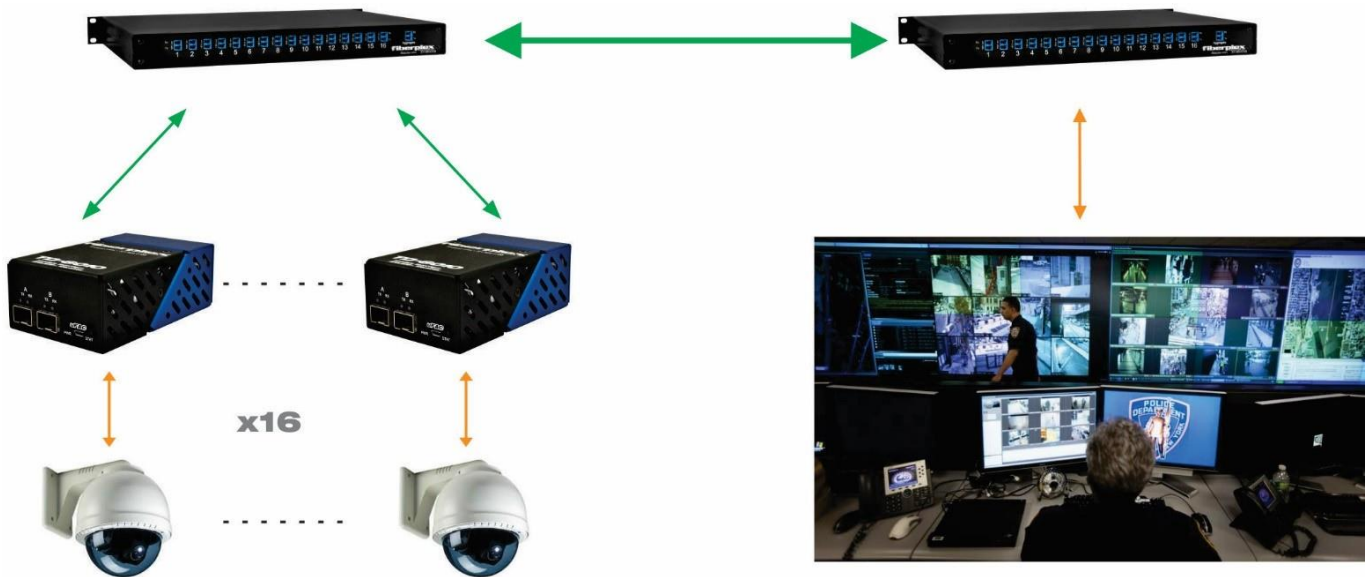
Model	Channels	Constituent Wavelengths
WDP16	16	1311-1611 nm
WDP8A	8	1471-1611 nm
WDP8B	8	1311-1451 nm

Typical Applications

Campus Connectivity



Distributed Security



WAVELENGTH ALLOCATIONS		
CWDM Wavelengths	WDP16	
	WDP8A	WDP8B
	Ch1 - 1611nm	Ch9 - 1451nm
	Ch2 - 1591nm	Ch10 - 1431nm
	Ch3 - 1571nm	Ch11 - 1411nm
	Ch4 - 1551nm	Ch12 - 1391nm
	Ch5 - 1531nm	Ch13 - 1371nm
	Ch6 - 1511nm	Ch14 - 1351nm
	Ch7 - 1491nm	Ch15 - 1331nm
	Ch8 - 1471nm	Ch16 - 1311nm