

*Champion ONE offers a variety of single fiber transceivers which allows for end users to reduce the number of fibers they use per connection by half, or double bandwidth on a pair of existing fiber. In instances where one would prefer to more than double bandwidth on a span, C1's Single Fiber CWDM transceivers and passives can be used to gain a 4x increase per strand, and mix protocols and data rates, from Fast Ethernet to SONET OC-48 (SDH STM-16).*

**Utilizing CWDM Transceivers and Single Fiber CWDM Passives to Increase Bandwidth or Reduce Fiber Count**

Using 'nearest neighbor' sets of wavelengths (for CWDM, this would be 1470/1490nm, 1510/1530nm, 1550/1570nm, 1590/1610nm), multiple channel full-duplex communication can be achieved.

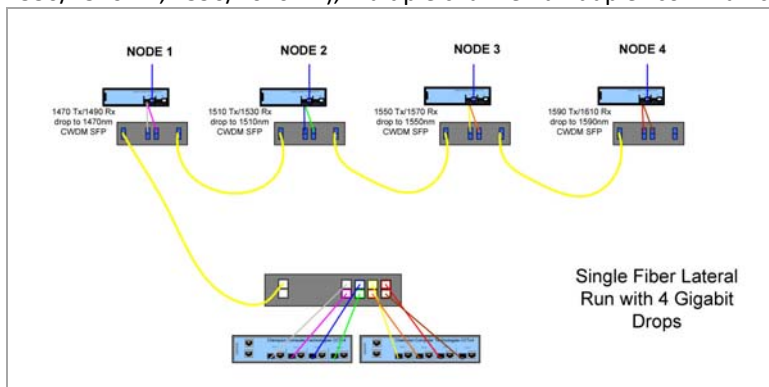


Figure 1. A single-fiber CWDM linear add-drop configuration

The methodology for this single fiber WDM (in the case of a point to point topology) is to match 'endpoints' with these pairs of wavelengths. The 'wiring' of the cables works in the following manner.

**Side A:** 1470nm Tx /1490nm Rx

- The 1470nm transmitter will be connected to the 1470nm port on the mux/demux
- The 1490nm receiver will be connected to the 1490nm port on the mux/demux

**Side B:** 1490nm Tx /1470nm Rx

- The 1490nm transmitter will be connected to the 1490nm port on the mux/demux
- The 1470nm receiver will be connected to the 1470nm port on the mux/demux

Linear add-drops, as well as ring topologies are configured in a similar manner, utilizing OADMs with the same 'matched set' wavelengths as required (see figure 1 above). East-west (adding and dropping) OADMs are also available for ring topologies.

This functionality is possible because of the wideband capability of the CWDM transceiver's receiver (typically 1450-1620nm).

**Single Fiber Passives Specifications**

	Minimum	Typical	Maximum	
Insertion Loss			2.2 dB (3.0)	<b>Environmental:</b> 5°C to 65°C operating, -40°C to 85°C storage, 10 – 85% relative humidity
Isolation (Mux)	30 dB			
Isolation (DeMux)	50 dB			<b>Center Wavelengths:</b> + or- 20nm: 1310, 1471, 1491, 1511, 1531, 1551, 1571, 1591,1611
Return Loss	45 dB			<b>Dimensions L x W x H:</b> 268.5 x 181.2 x 31.5 mm; 2 modules fit in a 19" rack
Max Out Pwr			300 mWV	

*Compatible with ITU G694.2 Wavelengths*