All Optical WDM-to-OTDM Conversion at Reduced Channel Spacing using HNLF

Abstract

With the growing requirement for advanced speeds and better capacity brought about by speedy data expansion on the Internet, Optical time division multiplexing attracted much attention for its high speed operations and ability to overcome the electronic bottleneck problems. In this article, 4x10 Gb/s WDM/OTDM conversion using super continuum(SC) generation at 100Ghz is proposed for 12Km, 24Km and 36Km using SPWRM( Symmetrical pulse width reduction module). HNLF based multiplexing eliminate the requirement of extra pump sources and provide cost effective solution.FWM (four wave mixing) demultiplexing using SOA(semiconductor optical amplifiers) is achieved for all the 4 channels with acceptable limits of BER=10-9 at 24Km.

References


**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Pulse width reduction, four wave mixing, supercontinuum, semiconductor optical amplifier, wavelength division multiplexing