Abstract

In this paper, a simulative experimental set up for OWDM communication system consist of two 4- optical channels with channel spacing of 0. 1THz interconnected by means of a 2x2 OXC (an OXC with 2 input ports and 2 output ports) to route the data with less delay and high throughput is analyzed under the impact of laser line-width and modulator's chirp over the crosstalk introduced in OWDM system. Our results show that by using OXC, we can minimize the power degradation introduced in OWDM system due to crosstalk. In addition, the impact of laser line-width and modulator's chirp can not be ignored in reducing the crosstalk while dealing with long haul optical communication systems. The OWDM system is also reported under the influence of crosstalk at different bit rate varying from 1Gbps to 10Gbps in this work.

**Index Terms**

Computer Science  Wireless Communications

**Keywords**

Optical Cross-Connector (OXC)  Crosstalk  Laser line-width  Modulator’s chirp  Optsim  simulation software