Abstract

A passive optical network architecture is proposed to quell the crosstalk effects in high speed wavelength divided passive optical network for future generation. Incorporation of DPSK format for downstream and NRZ for upstream, makes system less prone to nonlinearities and enable system to support 6144/512 users. Each wavelength from central office to user end carry 10 Gbps and total capacity for downstream is 12x10 Gbps. For upstream transmission 8 wavelengths carry the load and operating at 80 Gbps. Distance is achieved within acceptable BER range (10-9) is 110 Km for both directions. This distance is obtained without any dispersion compensation and costly modules. A semiconductor optical amplifier is placed to remodulate instead of external modulator such as MZM and EAM. Also comparison is done by
using same transmitter and hybrid transmitters to evaluate the crosstalk and Quality of reception. It is observed that DPSK for downstream and NRZ for upstream provide best results.

References


Index Terms

Computer Science  Wireless
Keywords
Wdm  Pon  Transmitter Diversity  Ber  Q-factor