

## Optical Demultiplexing for Subcarrier Multiplexed Systems

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Subcarrier multiplexing (SCM) is an attractively simple technique for establishing multiple independent channels over a single fiber. At the receiver, electrical mixing converts a selected channel to baseband. The photodiode, oscillator, mixer, and preamplifier must, however, operate up to the highest subcarrier frequency. The use of an optical filter for channel selection allows any subcarrier to be accessed with only baseband electronics. To obtain the best performance with this approach, sub-subcarrier modulation is needed. In this paper we propose a method suitable for externally modulated CATV systems and show that the sensitivity is comparable to the best conventional receivers.

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