

70-Gb/s amplitude-shift-keyed system with 10-GHz clock recovery circuit using duty cycle division multiplexing

ABSTRACT

The performance of ASK over DCDM for up to seven channels is reported. The aggregate bit rate of 70 Gb/s is achieved with only 160-GHz modulation bandwidth. The clock and data recovery are realized at 10-GHz clock rate, which is very economic and efficient. At 7×10 Gb/s, the worst receiver sensitivity of -10 dBm, OSNR of 41.5 dB and chromatic dispersion tolerance of ± 17 ps/nm are achieved. Whereas, for the best channel, the receiver sensitivity, OSNR, and chromatic dispersion tolerance are -23.5 dBm, 29 dB, and ± 36 ps/nm, respectively.

Keyword: Optical communications, Multiplexing, Duty cycle