Abstract

In this paper, the performance of radio-over-fiber (RoF) links employing intensity modulation has been investigated in terms of signal to noise ratio (SNR). An analytical model including dispersion, laser and radio frequency (RF) oscillator phase noise is constructed to estimate the SNR performance for 64- quadrature amplitude modulation (QAM) based RoF systems. It has been observed that the RF oscillator line-width and laser line-width affect the SNR significantly. SNR decreases monotonously as the value of laser line width increases but for increased RF oscillator line widths specifically above 1Hz, the SNR degrades to a great extent [20 dB] which is not desirable for efficient communication system.

References


Index Terms

Computer Science

Wireless Communications

Keywords

RoF   SNR   QAM   Phase noise   Dispersion