Performance Analysis of DQPSK Modulated Radio-Over-Fiber System based on NRZ Modulation Format

Abstract

The objective of this paper is to implement a Differential Quadrature Phase Shift Keying (DQPSK) modulated Radio signal over Fiber (RoF) transmission system. The DQPSK modulator in RF domain is implemented at the transmitting end and at the receiving end, non-coherent differential detection is used to demodulate the RF signal. The modulation scheme used in the optical domain is the standard Intensity Modulation with Direct Detection (IM-DD). Bit-error-rate (BER) has been investigated for non return to zero (NRZ) modulation format. Eye diagram have also been obtained. DQPSK with non return to zero format has been found to be an efficient format for an error free RoF transmission system.

References

- P. Candelas, J. Fuster, J. Marti, and J. Roig, &quot;Optically generated
Performance Analysis of DQPSK Modulated Radio-Over-Fiber System based on NRZ Modulation Format

electrical-modulation formats in digital-microwave link application,” J. Lightw. Technol.,
of multi-gigabit-per-second MQAM/MPSK-modulated millimeter-wave carriers employing
- M. A. Piqueras, B. Vidal, J. L. Corral, V. Polo, A. Martinez, and J. Marti, “Direct
photonic generation of electrical vector modulations at microwave/millimeter-wave
- C. Weng, Y. Lin, and W. Way, “Radio-on-fiber 16-QAM, 100 km transmission at 5
Gb/s using DSB-SC transmitter and remote heterodyne detection,” J. Lightw. Technol.,
6, 26, (2008).
- V. Urick, J. Qiu, and F. Bucholtz, “Wide-band QAM-over-fiber using phase
(2004).

Index Terms

Computer Science Wireless Communications

Keywords

Rof Dqpsk Nrz Ber