

One Chip Coherent Fiber Optic CDMA Receiver

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Abstract

A new structure of a fiber optic CDMA receiver is presented. This structure is based on using a passive correlator and active multiplication process with one chip generated locally at last chip position of the received bit duration; we call it "one chip coherent receiver". The performance analysis of this structure showed its superiority over the conventional active and passive correlator receiver structures. Our proposal to use a single optical hard limiter (OHL) after the correlator achieved a considerable improvement of the receiver performance compared to the conventional receiver structure which uses a single OHL in the front of the correlator.

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