

基于异步时钟的高速实时光OFDM收发系统

汪敏, 虞礼辉, 冯俊飞, 傅磊, 徐朝星, 张洛玮, 宋英雄

上海大学 特种光纤与光接入网省部共建重点实验室, 上海 200072

High-Speed Real-Time Optical OFDM Transmission System Based on Asynchronous Clock

WANG Min, YU Li-hui, FENG Jun-fei, FU Lei, XU Chao-xing, ZHANG Luo-wei, SONG Ying-xiong

Key Laboratory of Specialty Fiber Optics and Optical Access Networks, Shanghai University, Shanghai 200072, China

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摘要 近年来, 由于正交频分复用(orthogonal frequency division multiplexing, OFDM)技术具有独特的优势, 已经在无线电领域得到广泛应用, 并开始被引入光通信中. 目前, 对于光正交频分复用(optical OFDM, OOFDM) 技术的研究, 主要集中在离线实验分析和基于全局时钟的实时分析. 提出了一种基于异步时钟的高速实时光OFDM收发系统, 通过实验实现了在25 km 标准单模光纤(single-mode fiber, SMF) 上可实时传输2.5 Gbit/s 光OFDM信号, 误码率小于 1.2×10^{-5} .

关键词: 光正交频分复用 异步时钟 误码率

Abstract: As orthogonal frequency division multiplexing (OFDM) has unique advantages, it has been widely used in radio communications. In recent years, OFDM has been introduced into optical communications. Until now, studies of optical orthogonal frequency division multiplexing (OOFDM) are mainly concentrated on offline experimental analysis and based on real-time analysis with the global clock. This paper demonstrates a high-speed real-time optical OFDM transceiver system based on asynchronous clock transmitting 2.5 Gbit/s 16-QAM-encoded OOFDM signals over 25 km standard single-mode fiber (SMF). The bit error rate is less than 1.2×10^{-5} .

Keywords: [optical orthogonal frequency division multiplexing \(OOFDM\)](#), [asynchronous clock](#), [bit error rate](#)

收稿日期: 2013-01-19;

基金资助:

国家自然科学基金资助项目(61132004); 上海市科委重点实验室资助项目(11511502501, 11511502502)

通讯作者 汪敏(1957—), 男, 教授, 博士生导师, 研究方向为数字通信、宽带接入网技术等. Email:

wangmin@mail.shu.edu.cn

引用本文:

.基于异步时钟的高速实时光OFDM收发系统[J] 上海大学学报(自然科学版), 2013,V19(3): 250-253

.High-Speed Real-Time Optical OFDM Transmission System Based on Asynchronous Clock[J] J.Shanghai University (Natural Science Edition), 2013,V19(3): 250-253

链接本文:



<http://www.journal.shu.edu.cn//CN/10.3969/j.issn.1007-2861.2013.03.007> 或 <http://www.journal.shu.edu.cn//CN/Y2013/V19/I3/250>

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