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International Journal of Computer Applications

Volume 70 - Number 15

Year of Publication: 2013

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10.5120/12038-7990
{bibtex}pxc3887990.bib{/bibtex}

Abstract

In this paper, a fiber optic communication system has been employed using 10G/2. 5G asymmetric XGPON architecture. In this system bidirectional optical fiber has been employed for upstream and downstream data transmission. The system performance has been investigated for non-return-to-zero (NRZ) and return-to-zero (RZ) data formats by varying the length of the fiber for co-existed GPON and XG-PON system. The results have been compared for NRZ and RZ formats for upstream and downstream data in terms of Q value and eye opening. It has been observed that RZ modulation format is superior compared to conventional NRZ modulation.

References

- Rajniti, Anita Suman, Anu Sheetal, Parveen " Comparison of RZ and NRZ data formats for 2. 5Gb/s bidirectional WDM/TDM-PON using narrowband AWG" International Journal of VLSI and Signal Processing Applications, Vol. 1, Issue 2 , May 2011.

- Wang Xinsheng, "Insights into Next Generation PON Evolution", ZTE Technologies, VOL. 14 ? NO. 4 ? ISSUE 141, 2012,pp-12-15.
- ITU-T Series Recommendation G. 987. 2,(2010).
- Yuanqiu Luo, Frank Effenberger, and Bo Gao "Transmission Convergence Layer Framing in XG-PON1" Huawei Technologies USA.
- Ning Cheng, Zhenxing Liao, Shuang Liu, and Frank Effenberger "Gain-Clamped Semiconductor Optical Amplifiers for Reach Extension of Coexisted GPON and XG-PON", NTuD7. (2011).
- Bostjan Batagelj, Vesna Erzen, Vitalii Bagan, Yury Ignatov "Optical Access Network Migration from GPON to XG-PON" in ACCESS 2012 : The Third International Conference on Access Networks.
- Benyuan Zhu, David Au, Farooq Khan, and Yaowen Li "Coexistence of 10G-PON and GPON Reach Extension to 50-km with Entirely Passive Fiber Plant" ECOC 2011 OSA ,Th. 13. B. 5. (2011)
- Marija D. Mrakovi? and Petar S. Matavulj "Analysis of Coexisting GPON and NG-PON1 (10G-PON) Systems" Telfor Journal, Vol. 3, No. 1, 2011.
- Rahul Chhilar, Jitender Khurana, Shubham Gandhi "Modulation formats in optical communication system" International Journal of Computational Engineering & Management, Vol. 13, July 2011
- Vesna Eržen, Boštjan Batagelj "NG-PON1: technology presentation, implementation in practice and coexistence with the GPON system" ELEKTROTEHNIŠKI VESTNIK 79(3): 117-122, 2012.
- ITU-T Series Recommendation G. 984. 5,(2008).

Index Terms

Computer Science Communications

Keywords

XG-PON GPON data formats NRZ RZ