



TECHNOLOGY

Method and Apparatus for All-Optical Regeneration

OVERVIEW

Fiber-optic communication has become a very important technology fueled by the Internet and driven by a massive demand for bandwidth. The ability to transmit a vast amount of information at high-speed over long distances of fiber is becoming more and more essential from an economical and technological standpoint. However, one of the major limitations associated with long-distance fiber links is the gradual accumulation of optical noise originated from the chain of fiber-optic amplifiers along the fiber. As a result the error-free transmission distance is limited. This limitation can be alleviated using regenerative repeaters to restore the degraded signal to its initial integrity. The present invention, developed by researchers at the University of Maryland, College Park, Department of Electrical and Computer Engineering, dramatically improves the effectiveness of such regenerative repeaters.

The present invention can be implemented at the receiving end of the transmitted optical signal and therefore reduces operating costs by eliminating the need for in-line regeneration. Compared to conventional regenerators, this invention is high-speed, compact, simple, and easier to operate. Other applications of the present invention include high bit-rate all-optical demultiplexing, an optimized receiver, and all-optical wavelength converters for wavelength division multiplexed systems/components such as optical cross-connect. The present invention can also be used to connect systems with different operating wavelengths such as undersea and terrestrial links.

See U.S. Patent No. 6,335,819 Issued January 1, 2002.

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PATENT STATUS

U.S. Patent 6,335,819.

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CATEGORIES

- Imaging devices
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EXTERNAL RESOURCES

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