Abstracts

Reduced loss microwave fiber-optic links by intracavity modulation and carrier suppression

D.S. Glassner, M.Y. Frankel and R.D. Esman. "Reduced loss microwave fiber-optic links by intracavity modulation and carrier suppression." 1997 Microwave and Guided Wave Letters 7.3 (Mar. 1997 [MGWL]): 57-59.

Fiber-optic links are limited by the large V/sub /spl pi// of commercial modulators and by nonlinearities in the photodiodes used to demodulate the RF signals. Intracavity modulation and carrier suppression is shown to enhance the received microwave power in a fiber-optic link for a given optical power at a receiver. The carrier wavelength is automatically locked to the intracavity reflective notch filter that suppresses the carrier relative to the modulation sidebands. Link loss reductions exceeding 10 db were measured for frequencies from 1 to 25 GHz. Harmonic distortions can be decreased by combining this technique with above-quadrature biasing.

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