Abstracts

Hybrid Transversal Filter Utilizing MMIC and Optical Fiber Delay Lines

T.A. Yost, P.R. Herczfeld, A. Rosen and S. Singh. "Hybrid Transversal Filter Utilizing MMIC and Optical Fiber Delay Lines." 1995 Microwave and Guided Wave Letters 5.9 (Sep. 1995 [MGWL]): 287-289.

Conventional microwave transversal filters are hindered by bandwidth limitations and cannot provide long-time delays due to excessive propagation losses. Optical transversal filters lack the means to provide negative weighting coefficients. Therefore, a hybrid transversal filter that utilizes low loss, wide bandwidth optical fibers for the delays and microwave monolithic integrated circuits (MMIC's) for accurate weighting is investigated. Theoretical analysis of the noise performance, bandwidth, and delay line dispersion of a completed MMIC advanced transversal filter and the novel hybrid transversal filter are presented.

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