Abstracts

Gigahertz Analog Repeater for Fiber Optic Delay Lines

C.-T. Chang. "Gigahertz Analog Repeater for Fiber Optic Delay Lines." 1982 Transactions on Microwave Theory and Techniques 30.4 (Apr. 1982 [T-MTT] (Joint Special Issue on Optical Guided Wave Technology)): 587-591.

A gigahertz analog fiber optic repeater is used to extend the achievable delay time for radar delay line applications. The repeater consists of a silicon avalanche photodiode (APD), a wide-band amplifier, and a GaAlAs laser diode transmitter. This repeater has an optical gain of 14.5 dB, a 42 dB electrical dynamic range, and a noise figure of approximately 6.5 dB. The frequency response is flat within ±2 dB over the frequency range from 10 MHz to 1.3 GHz. The nanosecond pulse fidelity is such that the subtraction between input and output pulses is 20 dB below the pulse amplitude.

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