Abstracts

Reduced Insertion Loss of X-Band RF Fiber-Optic Links (Short Papers)

H. Blauvelt, D.B. Huff, G.J. Stern and I.L. Newberg. "Reduced Insertion Loss of X-Band RF Fiber-Optic Links (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.5 (May 1990 [T-MTT] (Special Issue on Applications of Lightwave Technology to Microwave Devices, Circuits, and Systems)): 662-664.

Fiber-optic links offer the promise of providing the microwave system designer with new flexibility and capabilities for use in radar and avionics systems. Results presented in this paper show a significant reduction in link RF insertion loss from the typical 40 dB at X-band (9 GHz) to 7 dB with a 3 dB bandwidth of 800 MHz while maintaining a signal-to-noise ratio (SNR) greater than 125 dBc/Hz. This 33 dB improvement can lead the way to many uses of fiber optics in microwave designs, especially for short-distance applications, where currently used waveguide or coax cables have low insertion loss.

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