Abstracts

Fiber-optic remoting of an ultrahigh dynamic range radar

J.E. Roman, L.T. Nichols, K.J. Wiliams, R.D. Esman, G.C. Tavik, M. Livingston and M.G. Parent. "Fiber-optic remoting of an ultrahigh dynamic range radar." 1998 Transactions on Microwave Theory and Techniques 46.12 (Dec. 1998, Part II [T-MTT] (1998 Symposium Issue)): 2317-2323.

We demonstrate, for the first time, fiber-optic remoting of an X-band radar with ultrahigh dynamic range, and show that photonic components can meet the stringent phase noise requirements for remoting modern radars. Fiber optic links were designed and built to remote the antenna and transmitter of the AN/SPQ-9B Advanced Development Model radar. The remoting links tested successfully in both transmit and receive configurations without significantly degrading the measured, postintegration, 87 dB signal-to-noise ratio of the radar. The results show the potential of photonic technology to remote the transmitter/receiver modules of active array radars.

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