Abstracts

Optical beamforming network based on chirped fiber gratings continuously variable true-time-delay lines

J.L. Corral, J. Marti and J.M. Fuster. "Optical beamforming network based on chirped fiber gratings continuously variable true-time-delay lines." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1379-1382.

A novel approach of true-time delay optical feeder for phased-array antennas is proposed and demonstrated. A compact size continuously variable true time delay unit is achieved by employing a reduced tuning-range tunable laser and one wide bandwidth chirped fiber grating as dispersive element. The dispersion-induced distortion and bandwidth limitation have been studied and two different optical modulation schemes (AM, SSB+C) have been considered and measured, proving to solve the mentioned effects. A high resolution performance (5.3 ps) is obtained employing narrow tuning bandwidth lasers with a wavelength stability of 0.005 nm and a 4 nm bandwidth chirped grating.

❑ Return to main document.