Abstracts

A novel 2N beams heterodyne optical beamforming architecture based on N/spl times/N optical Butler matrices

D. Madrid, B. Vidal, A. Martinez, V. Polo, J.L. Corral and J. Marti. "A novel 2N beams heterodyne optical beamforming architecture based on N/spl times/N optical Butler matrices." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1945-1948 vol.3.

A novel beamforming architecture based on optical Butler matrices is proposed and experimentally evaluated. The optical Butler matrix operating principle and the effects of fabrication inaccuracies on the beamformer radiation pattern are presented. The proposed architecture offers simultaneous multibeam generation capability. 40 GHz RF phase measurements are presented with low ripple and high linearity. Finally, an upgraded architecture is proposed which allows to double the number of beams (2N).

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