

Abstracts

The Evaluation of Electrooptic-Sampling Including Diffraction and Aperture Masking of a Tilted Astigmatic Gaussian Sampling Beam

W. Thomann and P. Russer. "The Evaluation of Electrooptic-Sampling Including Diffraction and Aperture Masking of a Tilted Astigmatic Gaussian Sampling Beam." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1699-1702.

Electrooptic-sampling necessitates a variety of probing geometries which include tilted astigmatic Gaussian sampling beams, whose field distribution has to be taken into consideration in the evaluation of the electrooptic-sampling signal. The generation of a tilted beam can be accomplished via an off-axis focussing lens. The formalism of ray matrices in geometrical optics is not adequate for waves with a field component in direction of the beam propagation. However, using Fresnel's diffraction integral we derived the complex beam parameters for off-axis systems which are valid for half apex angles less than 12° . In addition, the sampling beam undergoes diffraction and aperture masking.

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