Abstracts

Optically induced mask-controlled time-variable periodic microwave structures

W. Platte, S. Ruppik and M. Guetschow. "Optically induced mask-controlled time-variable periodic microwave structures." 2000 Transactions on Microwave Theory and Techniques 48.5 (May 2000 [T-MTT]): 846-851.

Based on the distributed Bragg reflection performance of stationary light-induced periodic microwave structures, this paper presents different kinds of modified arrangements for the generation of time-variable plasma gratings. Initial experimental investigations concentrate on the alteration of the grating period as a function of time. It is realized by a photographic film slot-array mask of linearly graded slot width transversely moved across an light-emitting-diode-excited photosensitive coplanar waveguide. The characterization of such a mask-tuned filter configuration requires special measuring procedures, which are illustrated and discussed in detail. The principle of operation demonstrated at X-band frequencies offers the potential of being extended to the submillimeter-wave and low-terahertz ranges.

❑ Return to main document.