Abstracts

Wide-Band Nonlinear Chirp Transducers for Planar Acoustooptic Deflectors

K. Anemogiannis, P. Russer and R. Weigel. "Wide-Band Nonlinear Chirp Transducers for Planar Acoustooptic Deflectors." 1989 MTT-S International Microwave Symposium Digest 89.1 (1989 Vol. I [MWSYM]): 269-272.

Design, fabrication and performance characteristics of LiNb0/sub 3/ based wide-band nonlinear interdigital chirp transducers are reported. A 54 % bandwidth centered at 720 MHz has been obtained for a collinear deflector on a YX substrate. A 66 % bandwidth at a midband frequency of 600 MHz has been designed for a Bragg deflector on a YZ substrate with electrodes tilted to satisfy the Bragg condition. Both tranducers are down-chirp designs. The chirp waveform has been optimized using an accurate model of analysis. The transducers have been fabricated using 10:1 reduction projection printing and liftoff technique. Good agreement has been found between theory and measurement. No severe bulk wave generation has been observed.

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