# Abstracts

## A planar parabola-feed frequency multiplier

*M. Kim, V.M. Lubecke, S.C. Martin, R.P. Smith and P.H. Siegel. "A planar parabola-feed frequency multiplier." 1997 Microwave and Guided Wave Letters 7.3 (Mar. 1997 [MGWL]): 60-62.*

A novel quasi-optical all-planar frequency doubler that could provide an alternative approach to conventional waveguide circuits for millimeter- and submillimeter-wave signal generation is presented, The multiplier uses a quad-bridge diode configuration for inherent isolation between the input and output signals. Two pairs of double-slot antennas with orthogonal polarizations directly couple input and output signals to the diodes, without the need for hybrid couplers required in typical balanced circuits, The integrated quad-bridge-diode/slot-antenna circuit is mounted on a dielectric-filled parabola for coupling to quasi-optical propagation systems, Measurement results for an X to K-band doubler show frequency conversion loss of 6.8 dB at the output frequency of 20.3 GHz.

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