

Abstracts

A Planar Wideband Millimeter-Wave Subharmonic Receiver

B.K. Kormanyos, C.C. Ling, G.M. Rebeiz, P.H. Ostdiek, W.L. Bishop and T.W. Crowe. "A Planar Wideband Millimeter-Wave Subharmonic Receiver." 1991 MTT-S International Microwave Symposium Digest 91.1 (1991 Vol. I [MWSYM]): 213-216.

A wideband planar subharmonic mixer has been designed for millimeter-wave operation. The receiver consists of a back-to-back Schottky-diode pair integrated at the base of a wideband log-periodic antenna. The antenna is backed by a hyperhemispherical lens and tested at 178.5GHz with a 90GHz local oscillator. The results indicate a single-sideband conversion-loss of -12.8dB without any RF or IF matching networks. The subharmonic monolithic approach results in an inexpensive wideband receiver and the design can be easily extended to receiver arrays.

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