Abstracts

Design and Performance of W-Band Broad-Band Integrated Circuit Mixers

R.S. Tahim, G.M. Hayashibara and K. Chang. "Design and Performance of W-Band Broad-Band Integrated Circuit Mixers." 1983 Transactions on Microwave Theory and Techniques 31.3 (Mar. 1983 [T-MTT]): 277-283.

Broad-band integrated circuit mixers rising a crossbar suspended stripline configuration and a finline configuration were developed with GaAs beamlead diodes. For the crossbar suspended stripline balanced mixer, less than 7.5-dB conversion loss for 15-GHz instantaneous, IF bandwidth was achieved with the LO at 75 GHz and the RF swept from 76 to 91 GHz. With the LO at 90 GHz, a conversion loss of less than 7.8 dB was achieved over a 14-GHz instantaneous bandwidth as the RF is swept from 92 to 105 GHz. For the finline balanced mixer, a conversion loss of 8 to 12 dB over a 32-GHz instantaneous IF bandwidth was achieved as the RF is swept from 76 to 108 GHz. Integrated circuit building blocks, such as filters, broadside couplers, matching circuits, and varions transitions, were also developed.

❑ Return to main document.