Abstracts

A K-Band HEMT Low Noise Receive MMIC for Phased Array Applications

R. Carandang, J. Yonaki, W.L. Jones, R.E. Kasody, W. Lam and L.C.T. Liu. "A K-Band HEMT Low Noise Receive MMIC for Phased Array Applications." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 521-524.

A state-of-the-art InGaAs HEMT receive MMIC consisting of a low noise amplifier and a novel 3-bit phase shifter has been fabricated and evaluated for receive phased-array development at 20 GHz. The low noise amplifier employs series and shunt feedback to provide high gain and low noise performance while the 3-bit phase shifter utilizes a novel switched-allpass approach to minimize circuit size. The monolithic receive chip has demonstrated noise figures of less than 2.75 dB and gains between 11.8 and 14.1 dB for the 8 phase-shift states across the 20.2-21.2 GHz frequency range.

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