Abstracts

Ultra Low Noise Q-Band Monolithic Amplifiers Using InP- and GaAs-Based O.1µm HEMT Technologies

M.V. Aust, T.W. Huang, M. Dufault, H. Wang, D.C.W. Lo, R. Lai, M. Biedenbender and C.C. Yang. "Ultra Low Noise Q-Band Monolithic Amplifiers Using InP- and GaAs-Based O.1µm HEMT Technologies." 1996 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 98. (1996 [MCS]): 89-92.

Design and development of ultra low noise MMIC Q-band LNAs using both InP and GaAs-based 0.1-µm HEMT technologies with state-of-art noise figures are reported in this paper. For InAIAs/InGaAs/InP HEMT LNAs, we have achieved noise figure performance as low as 1.6 dB with 10-dB associated gain for a one-stage LNA. With a two-stage design, 20 dB gain with 1.8-dB noise figure was obtained. Single- and multistage MMIC LNAs were also designed and fabricated using a production 0.1-µm AIGaAs/InGaAs/GaAs HEMT process. A four-stage LNA also demonstrated 2.5dB noise figure with 28-dB gain, which is the best MMIC LNA result ever reported for on GaAs-based HEMTs.

❑ Return to main document.