

Abstracts

An Integrated SIS Mixer and HEMT IF Amplifier (Short Papers)

S. Padin, D.P. Woody, J.A. Stern, H.G. LeDuc, R. Blundell, C.-Y.E. Tong and M.W. Pospieszalski. "An Integrated SIS Mixer and HEMT IF Amplifier (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.6 (Jun. 1996 [T-MTT]): 987-990.

Design details are given for a 205-270 GHz fixed-tuned SIS receiver in which the SIS mixer and HEMT IF amplifier are integrated into a single compact unit. The mixer and IF amplifier are connected with an inductor which provides the reactive part of the optimum input impedance for the HEMT. This simple coupling circuit gives an IF bandwidth of ~4 GHz. The receiver has a DSB noise temperature in the range 35-80K over the 205-270, GHz local oscillator band and 0.5-4.5 GHz IF band.

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