Abstracts

On the performance of low-noise low-DC-power-consumption cryogenic amplifiers

L. Angelov, N. Wadefalk, J. Stenarson, E.L. Kollberg, P. Starski and H. Zirath. "On the performance of low-noise low-DC-power-consumption cryogenic amplifiers." 2002 Transactions on Microwave Theory and Techniques 50.6 (Jun. 2002 [T-MTT]): 1480-1486.

The performance of broad-band low-noise low-dc-power-consumption cryogenic amplifiers have been studied in detail with emphasis on minimizing the power consumption and optimizing the amplifier performance at cryogenic temperature. A general approach is presented for the modeling and amplifier design, which helps in minimizing the power consumption and optimizing the performance of the amplifier. A noise temperature below 9 K and 22-dB gain was experimentally obtained in the frequency range of 4-8 GHz with a total power consumption of 4 mW with commercial GaAs transistors.

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