Abstracts

On the performance of low DC power consumption cryogenic amplifiers

I. Angelov, N. Wadefalk, J. Stenarson, E. Kollberg, P. Starski and H. Zirath. "On the performance of low DC power consumption cryogenic amplifiers." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 1237-1240.

The performance of broadband, low-noise, low DC consumption cryogenic amplifiers was studied in detail with emphasis on minimizing the power consumption and optimizing the amplifier performance at cryogenic temperature. A comprehensive approach used in the modelling and amplifier design can help one to minimize the power consumption and optimize the performance of the amplifier. An 8.5 K average noise temperature and 24 dB gain were experimentally obtained in the frequency range 4-8 GHz with total power consumption of 4 mW for a 2-stage design with commercial GaAs transistors.

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