

Abstracts

A 44 GHz low noise block downconverter MMIC suitable for EHF satellite communication applications (1998 Vol. I [MWSYM])

A.R. Barnes, D.C. Bannister and M.T. Moore. "A 44 GHz low noise block downconverter MMIC suitable for EHF satellite communication applications (1998 Vol. I [MWSYM])." 1998 MTT-S International Microwave Symposium Digest 98.1 (1998 Vol. I [MWSYM]): 297-300.

A multifunction MMIC, containing the core components required for an EHF satellite communications receiver, operating over 43.5 to 45.5 GHz, has been designed and tested. The circuit has been fabricated using a high yield, commercially available, 0.25 μm PHEMT GaAs-InGaAs-AlGaAs foundry process at GEC Marconi Materials Technology Ltd. The multifunction MMIC integrates a low noise amplifier, downconverter, local oscillator doubler and buffer amplifier onto a single chip occupying an area of 3.0/spl times/3.8 mm/sup 2/. Successful performance was achieved for a first pass iteration, namely 4.3 dB noise figure and 5 to 8 dB conversion gain with a low local oscillator (LO) drive level of 0 dBm.

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