Abstracts

A 2-18 GHz wideband high dynamic range receiver MMIC

D.C. Bannister, C.A. Zelley and A.R. Barnes. "A 2-18 GHz wideband high dynamic range receiver MMIC." 2002 Radio Frequency Integrated Circuits (RFIC) Symposium 02. (2002 [RFIC]): 147-149.

In this paper, a 2 to 18 GHz wideband receiver MMIC for EW applications is presented. The receiver comprises a balanced cascode travelling wave LNA, a wideband active balun and a cold-FET ring mixer. The MMIC was fabricated using the TriQuint GaAs pHEMT process, using 0.25 /spl mu/m gate length devices. The measured conversion gain is greater than 7.8 dB between 3 GHz and 20 GHz. The RF input return loss is better than 10 dB between 3 GHz and 21.5 GHz. The receiver requires a drain bias voltage of 5 V and draws a drain current of approximately 260 mA. This wideband receiver is believed to be the first fully integrated single-chip receiver MMIC covering the 2 to 18 GHz frequency band.

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