

Abstracts

Monolithic upconversion and reference IC for power amplifier linearization using GaAs HBTs (2000 [RFIC])

C. Bingol, H. Hein, E. Gammn, F. Oehler, W. Doser, K. Riepe and H. Blanck. "Monolithic upconversion and reference IC for power amplifier linearization using GaAs HBTs (2000 [RFIC])." 2000 Radio Frequency Integrated Circuits (RFIC) Symposium 00. (2000 [RFIC]): 279-282.

In order to fulfil the linearity requirements of modern communication standards, a linearization system using Adaptive Digital Predistortion has been developed. An increase of 12 dB in ACPR without decreasing the output power can be achieved with this system for W-CDMA signals. To achieve high system integration, a monolithic integrated linearization module comprising an upconverter and a reference downconverter has been realised. The linearization module has been fabricated in GaAs HBT technology and is described in detail in this paper. Measurement results on this module show an overall output IP₃ of 14.9 dBm and an overall gain of 29.4 dB in the upconversion path.

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