Abstracts

Variable-gain power amplifier for mobile WCDMA applications (Dec. 2001 [T-MTT])

V.T.S. Vintola, M.J. Matilainen, S.J.K. Kalajo and E.A. Jarvinen. "Variable-gain power amplifier for mobile WCDMA applications (Dec. 2001 [T-MTT])." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2464-2471.

A single-chip linear power amplifier (PA) with >48-dB gain control range and >24-dBm output power with adjacent channel leakage power below -36 dBc is presented. The chip is realized using an AlGaAs-GaAs heterojunction-bipolar-transistor process and is aimed for 1.95-GHz mobile WCDMA applications. The amplifier consists of two blocks, the variable-gain amplifier, and the PA. The chip size is 1.3/spl times/1.1 mm/sup 2/ and it is mounted on an 8/spl times/8 mm/sup 2/ FR-4 type laminate with 26 pieces of 0402 surface-mountable discrete components composing a complete 50-/spl Omega/ input-output amplifier module. This paper presents the design of the two blocks, discusses issues related to their combination, and presents complete amplifier realization and measurement results.

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