

Abstracts

High dynamic range variable gain amplifier for CDMA applications (1997 [RFIC])

M. Kasashima, S. Tachi and K. Tanaka. "High dynamic range variable gain amplifier for CDMA applications (1997 [RFIC])." 1997 Radio Frequency Integrated Circuits (RFIC) Symposium 97. (1997 [RFIC]): 157-160.

A new attenuator and threshold voltage (V_{th}) compensation circuits using GaAs MESFETs were designed and developed and this circuit was applied to develop a variable gain amplifier (VGA) for CDMA cellular phone systems. This VGA is packaged in an 8 pin plastic package and demonstrated high dynamic variable gain range (80 dB/100 MHz 70 dB/250 MHz 55 dB/500 MHz). High gain of 60 dB is observed for 85 MHz with low power consumption ($V_{dd}=+2.7$ V, $I_{dd}=6$ mA). Since depletion mode MESFETs are used no negative supply is needed for gain control.

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