Abstracts

A new design approach for variable-gain low noise amplifiers

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A new approach to the design of variable-gain low noise amplifiers is presented in which input and output signals can be switched among circuit branches with different features. It can be arranged for high linearity performance and/or different frequency shapes. Moreover, it allows matching conditions for multi-band applications to be met. As a design example, a 900 MHz three-gain level low noise amplifier was designed in a 20 GHz bipolar technology. The circuit exhibits a maximum gain and a noise figure of 26 dB and 2.1 dB, respectively and provides accurate input and output matching.

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