Abstracts

A Low Noise MIC GaAsFET Amplifier for 4 GHz Radio

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A low noise amplifier for 4 GHz radio has been designed and is in manufacture. The noise figure is < 2 dB and the gain is typically 10 dB. Input and output return losses are > 25 dB. The insertion loss with failure of either the power supply of the low noise transistor is typically 5 to 8 dB. The amplifier uses a single GaAs Field Effect Transistor in conjunction with a passive failsafe by-pass network utilizing circulators. This approach permits the noise figure and the gain flatness to be optimized for each amplifier without compromising the input and output matches. It is concluded that this single-transistor amplifier design has significant advantages both in performance and in simplicity over the balanced amplifier design.

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