

Abstract

A low-noise amplifier (LNA) is presented in this paper. The LNA is designed and optimized for narrowband and wideband operations along with minimum noise figure around 24 GHz (K-Band). The designed LNA employs microstrip input and output matching networks; it achieves a noise figure of 3.85 dB and 10.55 dB of gain along with 10.27 dB and 17.83 dB of input and output return losses, respectively for its narrow band. Where as for its wideband it accomplishes a gain of 6.5 dB with ± 0.3 dB flatness from 24 to 25.25 GHz wideband frequency range, the noise figure obtained for the presented LNA is in close proximity to the minimum noise figure over 23 - 24.5 GHz frequency range