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## Review of Low Noise Amplifiers (LNAs) and Applications

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*A low-noise amplifier (LNA) is used for amplifying a low-power signal without distorting its signal to noise ratio (SNR). The main purpose of using an amplifier is to boost up the signal power but it also amplifies the noise added in the signal. Therefore, LNAs are aimed to reduce the noise added with the signal. Several tradeoffs are kept in mind by the designers such as amplifier's technology, impedance matching and conditions of choosing low-noise biasing. This paper presents a review on several CMOS based LNA design noise optimization techniques i.e. classical noise matching (CNM), simultaneous noise and input matching (SNIM), power constrained noise optimization (PCNO), power constrained noise and input matching (PCSNIM), and partial source degeneration (PSD) techniques. Also, various applications of single band, double band and multiband LNAs are presented in this paper.*