

**Malignaggi A., Hamidian A., Ran Shu, Ali M.K., and Boeck G.,
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Abstract: This paper presents the comparison in terms of noise figure between common source and cascode LNAs. The classic MOS noise model is used to derive an expression for the noise figure of the cascode topology and to compare it with the noise figure of the common source topology. As an experimental proof, fully integrated 60 GHz low noise amplifiers have been designed, fabricated and measured in a 90 nm low power CMOS technology, and compared with another one already published by the authors. Hot-cold noise measurements have been carried out on chip, showing the predicted noise behavior. The detailed mathematical analysis, the design procedure and the achieved measurement results are presented in this work.