

# Universität Stuttgart

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RF and mmWrange

**Design of a Low-Noise Amplifier for a Ultra-**Wideband RF-Frontend in a 22nm FD-SOI CMOS Process

# Forschungsarbeit / Masterthesis

Nowadays at times of 5G, IoT and autonomous driving systems and subsystems are becoming more and more important in the mmW-range. In order to shrink the size of those systems Globalfoundries delivers with his 22nm process a cutting-edge technology and is leading in performance in the CMOS domain.

Core of this thesis is an integrated design of a low-noise amplifier for an ultra-wideband (up to 90GHz) receiver.

## FD-SOI - Fully-Depleted - Planar process Fully Depleted Ultra-thin Channel similar to bulk for Low Leakage Thin Buried

https://www.globalfoundries.com/sites/default/files/pr oduct-briefs/pb-22fdx-soi-25-web.pdf

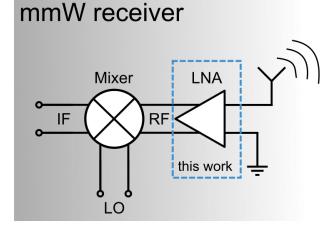
#### Goals of this work

- design of a low-noise amplifier
- evaluation of different topologies
- investigation of the limits of this technology
- is the system performance reachable?

### You are perfectly suited if:

- you are interested in integrated circuit-design
- you have a good knowledge in the RF/mmW domain
- you have already experience with developing tools like Cadence or ADS

If you are interested and need more information just feel free to contact me!



Language: German/English

