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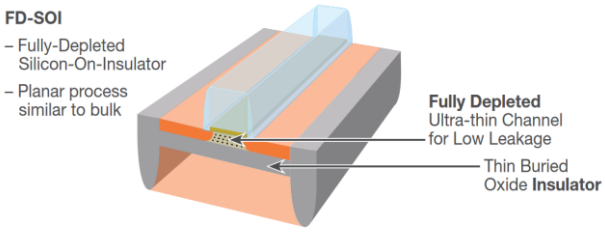
RF and mmW-range

Design of a Mixer for an Ultra-Wideband RF-Frontend in a 22nm FD-SOI CMOS Process

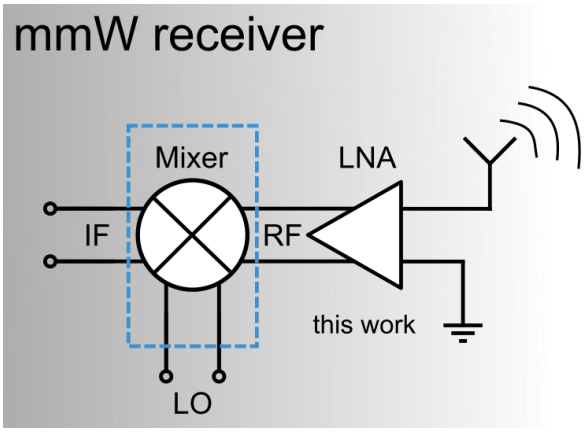
Forschungsarbeit / Masterthesis

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.



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

Core of this thesis is an integrated design an ultra-wideband mixer (up to 90GHz).



Goals of this work

- design of a mixer
- evaluation of different topologies (active and passive)
- 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