

## Analysis and Design of RF Sampling Digital-to-Analog Converters

In modern communication and MIMO radar systems, the number of independent transmit and receive channels is of significant importance. The RF sampling architecture simplifies the traditional signal chain by eliminating the LO path and frequency conversion stages, leading to a compact and efficient sub-channel design.

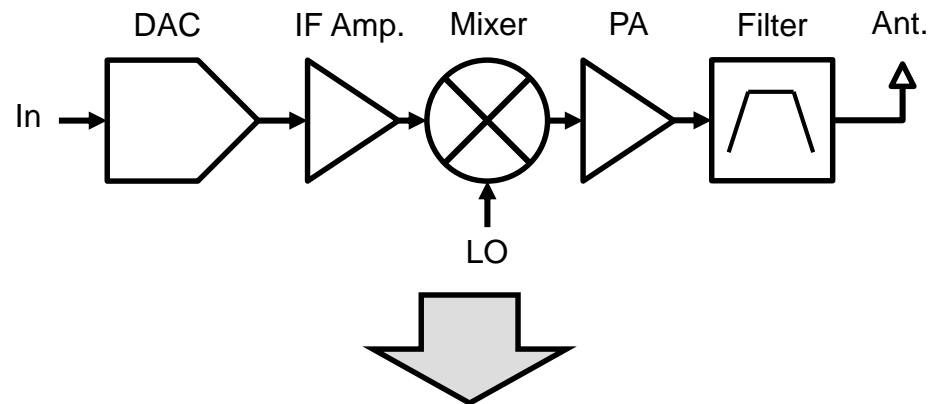
This thesis focuses on a critical component within this architecture — the **RF Sampling Digital-to-Analog Converter (RF-DAC)**. The primary thesis goal is to conduct a comparative analysis of various RF-DAC architectures and to design a high-speed RF-DAC capable of directly sampling RF frequencies by using an advanced 22-nm CMOS technology. Please reach out to us for more details.

### Requirements:

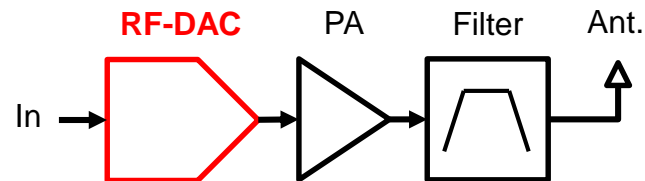
- Good understanding of circuits (e.g. ES, RFE or RFICS)
- Experience with Cadence Virtuoso and EMX/RFPro

**Language:** German or English

### Traditional TX Architecture



### RF Sampling TX Architecture



### Contact

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