

## Diploma thesis topics

### **ADC calibration techniques**

#### **– Modeling of 14bit SAR with calibration**

- Literature study on calibration principles (e.g. dynamic element matching)
- System partitioning and basic circuits proposal
- Modeling of a selected system in Matlab
- Calculation of reachable accuracy at given mismatch and tolerances

### **Clock and data recovery systems**

#### **– Modeling and testbench development for CDR for high-speed interfaces**

- Literature study on essential functions of CDR-systems
- System partitioning proposal
- Modeling of a selected system in Matlab
- Testbench for CDR-system verification

### **Continuous-time Sigma-Delta ADC**

#### **– Modeling of 2<sup>nd</sup> order system for audio applications**

- Literature study (e.g. feedforward / feedback compensation)
- Description of system partitioning
- Modeling of a selected system in Matlab (“Schreier” toolbox)
- Calculation of performance (>16bit @ BW=48kHz) and stability

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Ulrich Gaier  
Grace Semiconductor Europe GmbH  
Analog Design Villach  
Tel: 04242 / 9003 – 2207

[ulrich.gaier@gracesemi.at](mailto:ulrich.gaier@gracesemi.at)