Bachelor- or Master Thesis

TECHNISCHE UNIVERSITÄT DARMSTADT

- **Subject:** Power Supply Decoupling on Printed Circuit Boards for Electromagnetic Compatibility Improvement
- **Research Area:** Electromagnetic Compatibility (EMC)
- **Description:**

The multimedia world is continuously heading towards new features that provide enhanced performance at decreasing cost. For the hardware this means higher integration, increasing signal complexity, various clock domains, and multiple power supplies. An undesired consequence is increasing electromagnetic radiation. Keeping electromagnetic interference (EMI) low and ensuring compliance with electromagnetic compatibility (EMC) regulations are key challenges in multimedia development.

An important issue in EMC friendly design of printed circuit boards (PCBs) is proper power supply routing and filtering. This thesis covers investigations on various decoupling methods for PCB design. Based on simulation results decoupling test structures need to be developed, simulated, fabricated, and tested. Simulation and test results shall be discussed.

Requirements: Basic knowledge in the area of simulation techniques and electric field theory. An internship before starting the thesis is recommended.

Contact Person: Wolfgang Ackermann, Gebäude S2/17, Raum 142
ackermann@temf.tu-darmstadt.de

Supervisor: Ralf Kakerow (Continental Automotive GmbH), Wolfgang Ackermann

Continental