



## Development of a PC-based Real Time Power Electronics Control Platform

By Alexander Fiedel

Diplom.De Apr 2003, 2003. Taschenbuch. Book Condition: Neu. 210x148x12 mm. This item is printed on demand - Print on Demand Titel. Neuware - Scholarly Research Paper from the year 2005 in the subject Electrotechnology, grade: 1,0, Friedrich-Alexander University Erlangen-Nuremberg (unbekannt), language: English, abstract: Inhaltsangabe:Abstract: In this thesis it was shown that it is possible to set-up a very fast and flexible realtime controller using only off-the-shelf components on a PC platform. To best fit the requirements, the used hardware and software has been chosen carefully and compared with other market products. After evaluating the timing and handling structure, the real-time controller and the system drivers were implemented using the 'C' program language. To ensure flexibility, this program has been tested on two different hardware configurations. Timing analyses and measurements are compare for the two configurations. All code is written to be easy to understand and quickly learned by students. To prove the system capabilities, a PI control algorithm has been implemented to control the torque of a DC machine. The system ran on a 333 MHz PII with algorithm times of about 600ns and an overall sampling rate of 20kHz. This very flexible system, together with the real time operating...



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