



CAN and FPGA Communication Engineering: Implementation of a CAN Bus based Measurement System on an FPGA Development Kit

By Yu Zhu

Diplomica Verlag Nov 2010, 2010. Taschenbuch. Book
Condition: Neu. 272x189x9 mm. Neuware - The Controller Area Network (CAN), invented by Bosch in 1983, is a serial field bus protocol which was originally used in road vehicles and now is widely applied in other industrial fields. Since its birth automotive electronic engineers have been using Microcontrollers (MCU) to control the CAN bus. Today, as the Field-programmable Gate Array (FPGA) has become very advanced, this book introduces a new method which uses an FPGA and a MCU jointly instead of a single MCU is to design a CAN bus measurement system. Furthermore the designed system should be able to work at the fastest possible speed. Chapter 1 of this book is the introduction which includes the background, objective and outline of this book. Chapter 2 describes the CAN protocol development history and fundamentals such as application field, architecture layers, different frame structures, frame coding, error handling and fault confinement which are extracted from the CAN Specification 2.0 and ISO 11898. It helps reader to understand the CAN. Chapter 3 studies the effective data transmission rate and ratio of the CAN bus and the MCU serial UART port. Then it compares their values...

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