

# **SINGLE BOARD COMPUTER FOR DEVICE CONTROL IN THE FAIR ACCELERATOR CONTROL SYSTEM**

M. Thieme, W. Panschow, S. Rauch, M. Zweig, GSI, Darmstadt

## **Abstract**

For the FAIR accelerator control system a new single board computer (SBC) is presently under development. The SBC will be the core of the distributed intelligent peripherals and shall be realized as a multi-controller system, consisting of up to three controllers. The main components of the SBC are a powerful FPGA and a highly integrated computer-on-module (COM). FPGA and COM communicate with PCI or PCI express. With use of the COM the performance of the SBC gets flexible and scalable. If needed, the COM can be upgraded. For the communication with the controlled devices several interfaces are foreseen: A parallel bus interface (FAIR-bus), an up to 64 bit wide bidirectional interface and up to four serial high-speed links (>500 Mbit). Three Ethernet interfaces (100/1000 Mbit) are provided for the user interface to the higher control layers and general machine timing system. For diagnostic purposes the SBC holds USB, EIA-232 (RS-232) and JTAG (IEEE 1149.1). For non volatile data a compact flash interface is available.

**CONTRIBUTION NOT  
RECEIVED**