Contribution ID: 42 Type: Poster

Proposal of Readout System for charge amplifier and switched capacitor array asic

Charge amplifier and switched capacitor array (CASCA) asic is designed to provide 32 electronic channels for different micro-pattern gas detectors. A large number of electronic channels means massive amounts of data. Thus, we designed a readout system with high-speed transmission. The system mainly consists of three kinds of modules: the CASCA card, the Analog-Digital conversion card (AD card), and the Main-Control card. The CASCA card, mounted with a particular CASCA asic chips, are designed for receiving detector signals. The Analog-Digital conversion card is used for digitizing the output signals from the CASCA card and providing necessary control signals for the CASCA card with a FPGA chip and a ADC chip. The Main-Control card, connected with the Analog-Digital conversion card by HDMI interface, has a FPGA-based reconfigurable logic, providing source clock and trigger signal. The digital data transfer between the AD card with the Main-Control card is realized by GTX interface with filed programmable gate arrays(FPGA). The Main-Control card transfers data through Gigabit Ethernet protocol realized by a TCP core.

Primary author: Mr LIU, hengshuang (Center China Normal University)

Presenter: Mr LIU, hengshuang (Center China Normal University)

Track Classification: Front-end electronics and fast data transmission