# 23rd Virtual IEEE Real Time Conference



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# The development of a real time data acquisition system based on FPGA for CAEN digitizer DT5751

The traditional data acquisition (DAQ) system operated in Linux or Windows is a not real time system. When it is used for high throughput, events losing is very frequent. It also need a high requirement for DAQ software development. At the same time, it is very common for readout systems as devices during USB transmission now. So if we can develop a USB host core, and it will be very easy as a DAQ system. In order to minimize the system, a TUSB1310A USB chip is selected as PHY layer which both supports host and device, and both of link and protocol layers will be implemented in FPGA. For rapid verification, a KC705 board was used as a mother board, and a HiTech USB board including two TUSB1310A chips was used as a daughter board. The host core realizes device USB power-up detection, USB reset, the detection of high speed device, enumeration and frame synchronization.

#### Minioral

No

## **IEEE Member**

No

## Are you a student?

No

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Track Classification: Data Acquisition System Architectures