



Contribution ID: 140

Type: Sectional

## Software Implementation of USB 3.0 Stack for Upgraded Data Link Interface on IBR-2 Reactor Spectrometers in FLNP

*Tuesday 26 September 2017 15:00 (15 minutes)*

In this work software implementation of USB3.0 stack protocols for operating data acquisition units of the IBR-2 spectrometric system with an upgraded communication adapter, is considered.

The data acquisition system on De-Li-DAQ-2D and MPD blocks developed earlier in FLNP is widely used at present on neutron spectrometers. To connect the modules to the computer, an FLINK fiber optic adapter with an USB2.0 interface was originally developed for this system.

Modern trends towards increasing the number of detector channels and the volumes of the recorded and accumulated information in real time in experiments on IBR-2 spectrometers in FLNP require increasing the bandwidth and reliability of the communication channel.

In addition to replacing the driver and using the FTD3XX library of the FT600 chip to provide the USB Super Speed to FIFO bridge with a new communication adapter, improvement of software for an advanced application communication protocol with DAQ blocks is also required.

Upgrading of the adapter and improvement of software for a new application-layer protocol have resulted in an increase of the bandwidth and reliability of the communication channel.

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**Session Classification:** Triggering, Data Acquisition, Control Systems

**Track Classification:** Triggering, Data Acquisition, Control Systems