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# **mbspex and pexornet - linux device drivers for PCIe optical receiver data acquisition and control**

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The GSI *PEXOR* family PCIe boards are used as interface for data acquisition from various detector front-ends, linked by up to 4 chains of optical fiber connections.

Communication with the front-end hardware is handled by the proprietary gossip protocol. A trigger module *TRIXOR* extends the *PEXOR* by additional signal connections for triggered data acquisition.

For several years the *PEXOR* boards have been applied with the data acquisition framework *MBS*. On Linux x86 platform, the device driver software *mbspex* implements concurrent access to the *PEXOR* front-ends from *MBS* DAQ, and from separate control applications, like the command line tool *gosipcmd* or hardware specific configuration GUIs.

Besides the established character driver *mbspex*, a network driver *pexornet* has been developed to evaluate a lightweight DAQ system with readout from *PEXOR* via UDP socket. Therefore common network tools can be applied for driver configuration and data debugging. Moreover, the *gosipcmd* tool and its adjusted API library are fully applicable also for *pexornet*. A simple example DAQ application with *pexornet* UDP readout has been implemented with the software framework *DABC*, delivering the same data file format and online monitoring capabilities as *MBS*.

Readout performance of a test set-up has been measured both with *MBS / mbspex*, and with *DABC / pexornet*.

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