SCALEXIO Processing Unit

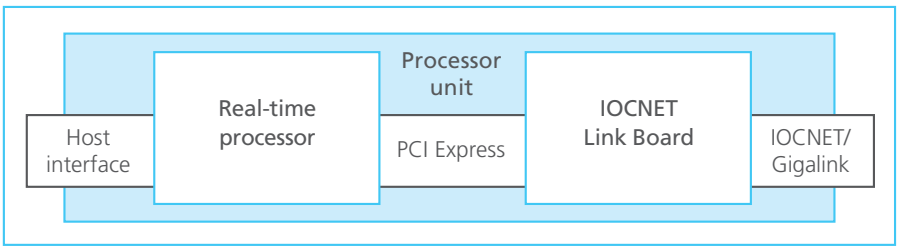
The newest processor technology

Highlights

- The latest x86 processor technology (Intel® Core™ i7)
- Communication with the SCALEXIO I/O boards via IOCNET
- SCALEXIO connectable to DS100x-based HIL systems (via Gigalink)
- Multicore support

The SCALEXIO processor core is based on an industry PC with an Intel Core i7 quad-core processor, a real-time operating system (RTOS), and a PCIe plug-on card developed by dSPACE for communication with the I/O and with other real-time processors. Because standard components are used for the motherboards and processors, they can be updated regularly to benefit from performance improvements in processor technology.

The SCALEXIO Real-Time Library builds on the QNX real-time operating system QNX and provides the I/O drivers, etc.



The real-time PC of the Processing Unit is extended by an IOCNET Link Board to connect it to the SCALEXIO system.

Multicore Support for Large Models

Large, complex simulation models can be distributed across three processor cores to ensure that they are computed in real time. The fourth core is reserved for internal system services. ConfigurationDesk (p. 32) is used to distribute model parts to the cores and to configure the communication behavior, the simulation hardware and the model connections.

IOCNET

SCALEXIO's communication network IOCNET (I/O Carrier Network) uses a proprietary dSPACE protocol to guarantee the simulator's real-time capability. It is the interface to the I/O boards, providing a flexible network topology and high bandwidth to connect a large number of I/O boards, even when they are far apart (p. 6).