

POWERLINK StarterKit

Overview

It is often wished to get to know the POWERLINK protocol, devices and tools without having high expenditure. This wish is met with *port* GmbH's POWERLINK StarterKit (PSK).

The StarterKit enables the device developer to explore the capabilities and the advantages of *ports* POWERLINK Library.

The PSK does not only allow you to get to know the POWERLINK protocol, but it also supports the users when testing POWERLINK devices and networks.

With prepared and modifiable examples developers can estimate the effort needed to create own applications.

Description

POWERLINK is a very flexible Real-Time-Communication protocol. Its main advantage is the use of standard Ethernet components for 100Mbit/s Ethernet like PHY, Ethernet-MAC-Controller (EMAC), cables and other infrastructure components for the devices Controlled Nodes (CN, the **slaves**) and Managing Nodes (MN, the **master**).

Using FPGAs opens up new possibilities. Best real time behaviour short delays and short response times are achieved by the optimized Ethernet MAC controller that is supported by the hardware. FPGAs meet the demand for a built in hub in order to connect devices in a line network structure like conventional field busses.

port offers several reference platforms based on standard Ethernet controllers, as well as the FPGA solution. So, beside the evaluation of the POWERLINK protocol, it allows to compare different hardware platforms.

With the hardware of choice it is possible to simulate process elements directly via control elements and give the outputs to LEDs. On side of the POWERLINK



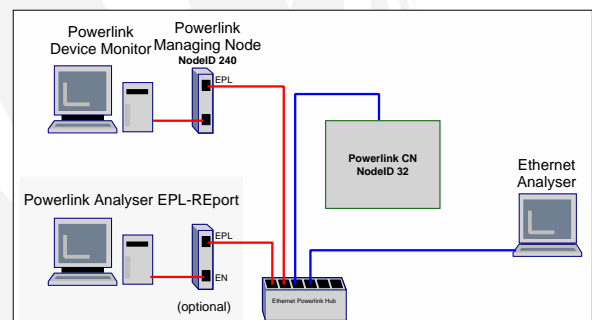
the device behaves like a IO-device standardised to CiA 401, which can be found in the industrial field.

Hardware

The PSK includes:

- target hardware for program development of a CN, XILINX Spartan3E-500 FPGA, Freescale NE64 or ST Microelectronics STR910 including development environment and examples
- POWERLINK Device Monitor (*demo version*) as POWERLINK Managing Node,
- a Windows based Ethernet analyzer with POWERLINK Plug-In
- POWERLINK Hub and Ethernet cable
- optional the **POWERLINK-REport** (*demo version*) as powerful POWERLINK analyzer

All software components are available on the enclosed Tools CD.



System Requirements

The usage of the starterkit requires a PC system or Laptop with at least 3 GByte free disc space as well as Microsoft Windows XP Professional or Vista Business

Ordering information

- | | |
|---------|--|
| 1701/01 | PSK-Spartan3E
target hardware for program development of a CN, XILINX Spartan3E-500 FPGA including development environment and examples |
| 1701/11 | PSK-Spartan3E+
as PSK-Spartan3E including an additional POWERLINK Gateway |
| 1701/02 | PSK-NE64
target hardware for program development of a CN,
Freescale NE64-Board including development environment and examples |
| 1701/12 | PSK-NE64+
as PSK-NE64 including an additional POWERLINK Gateway, |
| 1701/03 | PSK-STR910
target hardware for program development of a CN,
ST Microelectronic STR910 including development environment and examples |
| 1701/13 | PSK-STR910+
as PSK-STR910 including an additional POWERLINK Gateway |

Functional demo versions of the software tools are available for download on our web site
<http://www.epl-tools.com/shop.html>.

Engineering Services

port is providing engineering services and trainings for our business activities:

- CAN and CAN-based protocols: CANopen, J1939, DeviceNet
- Industrial Ethernet Protocols: POWERLINK, EtherNet/IP, EtherCAT
- Implementation of devices according to CANopen device profiles
- VHDL based solutions for industrial applications
- application specific implementations or enhancements
- embedded LINUX projects

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