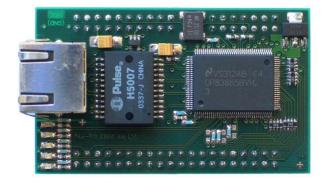## PhyworkX Ethernet PHY Development Kit

The MorethanIP PhyworkX Ethernet PHY Development Kit provides an Ethernet PHY Daughter Board enabling triple-speed 10/100/1000 Ethernet copper connectivity to embedded systems. The daughter board gives designers the ability to implement high-speed Ethernet solutions for prototyping and evaluation as well as embedded software development. The daughter board is designed for Altera Development Kits. The PhyworkX board provides Ethernet connectivity for speeds from 10Mbit/s to high performance Gigabit/s and interfaces directly to low cost Base-T copper infrastructure through a standard RJ45 connector.

In combination with the MorethanIP 10/100/1000 Ethernet MAC the PHY daughter board can be used to quickly design, implement, prototype and test embedded Ethernet Telecom or Industrial applications from 10 Mbps to Gigabit speeds with the same hardware and software environment. The PhyworkX development kit is delivered with software drivers and a TCP/IP reference stack that can be used to develop and prototype Telecom or Industrial applications.

PhyworkX Hardware Features Overview

- Daughter Board implemented with high performance National DP83865 10/100/1000 Ethernet PHY device

- Mechanically and electrically compatible with Altera Santa-Cruz 74-pin Expansion Prototype Connector

- Implements Autonegotiation for automatic speed selection and automatic cable crossover configuration

- Board connector implements a combined standard MII / GMII (Media Independent Interface / Gigabit Media Independent Interface)

- 2-Wire PHY MDIO Management Interface for PHY configuration / status available on the board connector

- Standard Ethernet Copper RJ45 connector for 10 Base-T, 100 Base-T and 1000 Base-T networks

- Status LEDs providing PHY current speed information duplex mode and traffic indications

- Stackable on any Altera Development Kits such as Altera Stratix / Cyclone NIOS or PCI-X boards

PhyworkX Software Development Kit Overview

- Software Development Kit (SDK) libraries and include files for provided reference platforms based on a 32-Bit NIOS embedded processor

- C Software drivers for MorethanIP 10/100/1000 Ethernet MAC Core peripheral

- C Software-only TCP/IP protocol stack with network driver for MorethanIP 10/100/1000 Ethernet MAC Core peripheral

- C Drivers for the DP83865 PHY control and MDIO interface

- Example applications showing Ethernet MAC raw packet transfers as well as TCP/IP stack usage with full DMA support

- Plug and Play Web-Server Application with DHCP support

- Requires standard Nios Processor development environment with Altera GNUpro compiler, debugger and linker

Design Package and Support

- Includes 10/100/1000 Ethernet DP83865 PHY daughter Board

- Reference designs in bitstream format for Altera Cyclone and Stratix FPGAs

- C Software Design Kits (SDK) for all Reference Designs with associated libraries, include files, drivers and examples in source code.

- Detailed user's and methodology guides

Ordering Information

MTIP-PHYWORKX-tech

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