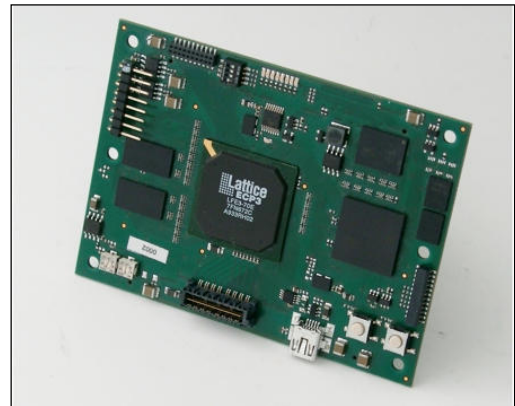


# PK8000 EMBEDDED PLATFORM WITH LATTICE ECP3 FPGA AND 600MHZ BLACKFIN® DSP



## Application Possibilities unlimited

- Camera module for real-time image processing, data compression, filtering, format conversion, protocol translation, data encryption
- Coupled with Intel® Atom™ processors implementation of complex algorithms in high level languages possible
- Measurement technology
- Software devices
- Drive engineering
- Encryption modules
- and, and, and ...



## Advantages of the Concept

- The combination of DSP and FPGA provides the possibility of optimal distribution of algorithms with parallel and serial parts in order to achieve maximum processing power.
- Minimum power consumption and required space
- Broad band integration of processor systems are supported using fast Gbit-interfaces
- Changes and extensions of functionality can be done in short time
- Competitive prices
- Multiple common interfaces

## Components

### Blackfin-DSP-BF548

- 600 MHz max. clock frequency
- GPIO, 8 bit
- USB 2.0, JTAG, 4\*UART
- DDR-RAM, 256 Mbit, flash 128 Mbit
- optional CAN, SPI, MOST, SPORT
- DVI

### Lattice-ECP3-70FPGA

- 24 bit video bus, 32 bit local bus
- JTAG, PCI-express interface
- I2C-Bus
- DDR2-RAM, 512 Mbit (extension up to 4 Gbit possible), flash 128 Mbit

## Product Description

The PK8000 platform represents an universal data processing device. Integrated on board are a BF548 DSP from Analog Devices and a Field Programmable Gate Array (FPGA) LFE3-70E from Lattice. Both modules are coupled via a 16 bit Parallel Peripheral Interface (PPI) and a 16 bit Asynchronous Memory Interface (AMI). The Lattice FPGA configuration can be executed via attached flash memory or JTAG port as well as over the DSP. DDR or DDR2 RAM modules are used as external memory. The clock frequency can be individually adjusted for DSP and FPGA via I2C. Additionally, the board temperature can be measured via this bus. Following interfaces are available: 32 bit local bus, 24 bit video bus, 8 bit General Purpose In/Out (GPIO), USB, 4x UART and PCI Express, a high-speed interface with 4 lanes (yields 8 Gbps effective bandwidth).

## Architecture Overview

