

Embedded Computing: Scaleable, Autonomous, and Modular for Industrial Applications

It's Real-Time for Your Products!

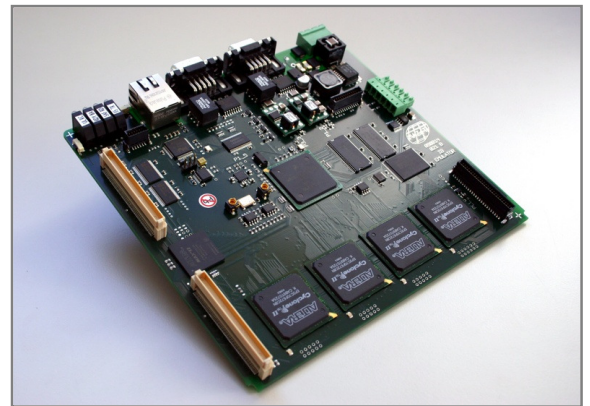
– From Concept to Series –

Embedded Computing Design for an Embedded World

You are looking for:

For your products, you need:

- ▶ An operating system with real-time-capable embedded software
- ▶ A complex digital design in programmable FPGA logic
- ▶ Functional models, prototypes, and production devices
- ▶ An industry partner with expertise from concept to production



We offer:

Our service offerings for you:

- ▶ Building a plan for the realization of your product, with a timeline and cost analysis for the production devices
- ▶ Create technical documentation for all phases of development and testing
- ▶ Development of hardware, software, and FPGA design
- ▶ Functional testing of prototypes and preparation of an appropriate testing environment for your verification
- ▶ Crossover from prototypes into production
- ▶ Delivery of production devices

We have:

Our development platform:

**Freescale PowerPC
with Linux operating system,
XENOMAI real-time framework &
programmable FPGA logic**

Your benefits:

- ▶ An open-source operating system with real-time development framework
- ▶ Easily portable application software
- ▶ Individual digital circuits in FPGA
- ▶ Prototypes and functional models, produced quickly with minimal investment
- ▶ Scalable processor performance from the PowerPC family
- ▶ Scalable FPGA—resources for production devices

Development platform specifications:

- ▶ Freescale PowerPC MPC5200B with 384 MHz core processor speed and 64 MHz local bus rate
- ▶ 128 MB SDRAM and 64 MB FLASH
- ▶ 10/100 MB Ethernet with autonegotiation
- ▶ 2 RS422 user interfaces (Interbus)
- ▶ 4 Altera Cyclone™ II lowest-cost FPGAs with local bus interfaces and interconnect connections
- ▶ Universal boot loader U-Boot
- ▶ Embedded Linux (Kernel 2.6.19) with XENOMAI real-time development framework
- ▶ Expansion connector for client-specific hardware
- ▶ 24 V power supply
- ▶ Application software based on ELDK (Embedded Linux Development Kit)

Sample applications:

Interbus emulator for Phoenix Contact Electronics GmbH

- Implementation of a self-sufficient emulation platform for Interbus systems
- Linux operating system as a basis for TCP/IP communications
- Real-time processing of 64 interrupt sources in 1 ms
- Implementation of 112 Interbus participants in 16 optionally connected hierarchy levels in the FPGAs
- Implementation of PCP stacks from Phoenix Contact Electronics GmbH in the application software

Evaluation platform for JENCOLOR® color sensors

- Implementation of an evaluation platform for JENCOLOR® color sensors
- Linux operating system as a basis for TCP/IP communications
- Compilation of data from 1 to 64 color sensors in the FPGAs
- Evaluation of the data in the application software

Further information is available at our Web site: <http://www.MAZeT.de>
or in our sales offices!