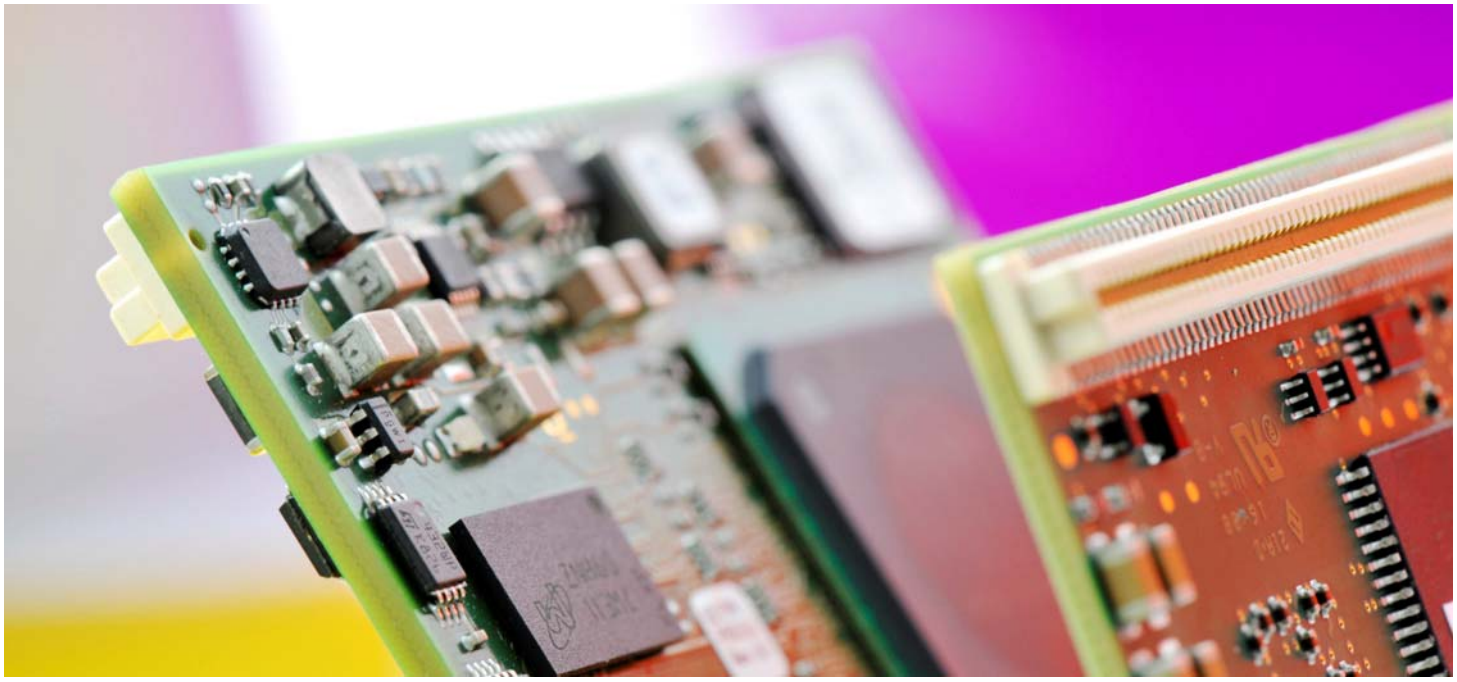


Focus on: Development

Hardware

- Power electronics
  - power supply
  - DC/DC converter
  - DC/AC converter
  - motor controls (Stepp motors, brush-type/ brush-free DC motors)
- Measurement engineering
  - analog measurement engineering
  - infrared measurement
  - digital signal processing
  - optoelectronics
- HF technology/radio technology
  - ISM
  - GSM, GPRS, UMTS
  - WLAN
  - Bluetooth
  - ZigBee
- Microcontroller technology
  - 8 Bit: Atmel AVR, PIC, Z8, 8051 family
  - 16 Bit: Infineon C166 family, Infineon SC166 family, Toshiba CP32 familiy, Renesas H8
  - 32/64 Bit: Cortex-M3, ColdFire, Infineon TriCore, ARM7/9, Freescale PPC PowerQUICC I – III, QorIQ, x86 family, Intel/ AMD/VIA
  - interfaces/fieldbusses: PCI/PCI Express, ISA, PC-Card, USB, FireWire, RS232/ RS485/RS422, CAN, LON, ASI, Profi Bus, M-Bus, Ethernet, ...
- Display technologies
  - customer specific displays
  - display controls (TN/STN, TFT, VFD)
- Simulation
  - digital, analog, HF, Timing
  - programs: HyperLynx Line-sim/Boardsim, SynaptiCAD Timing Diagrammer

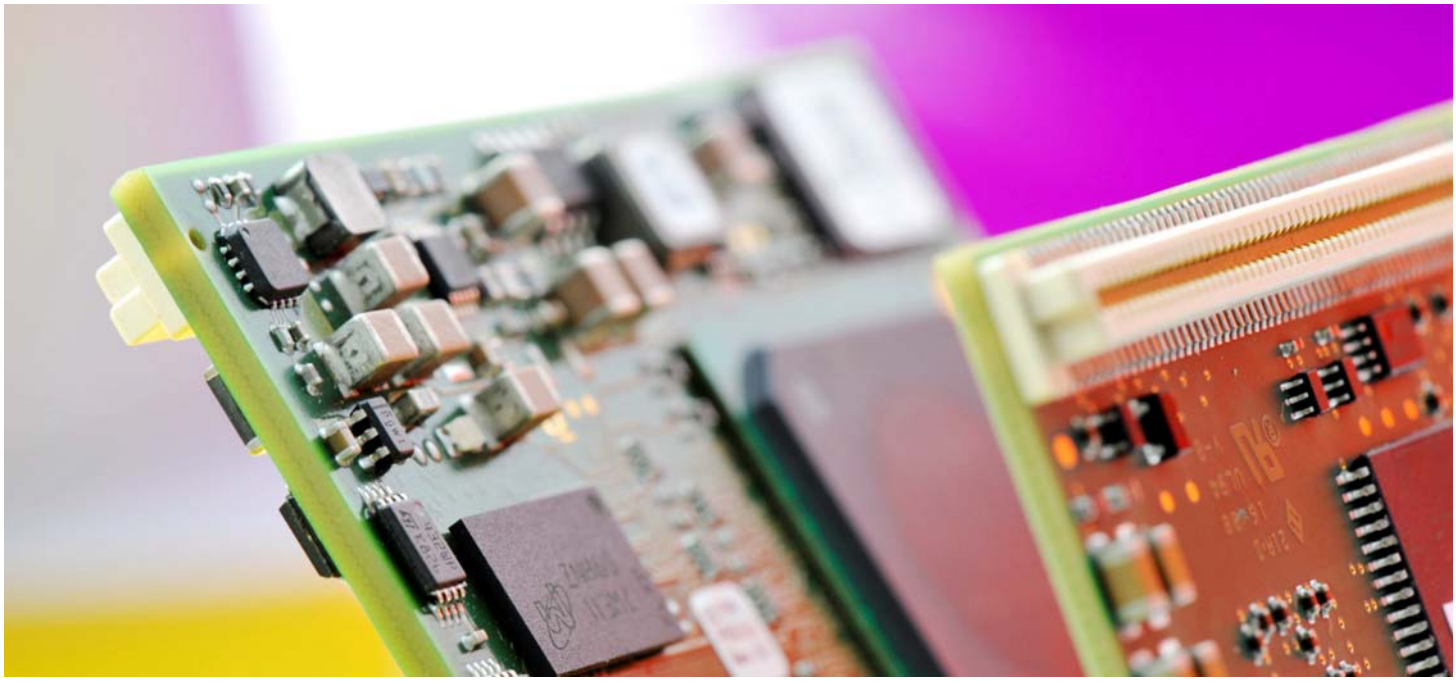
Software

- Firmware development
  - BIOS / bootlader / monitor
  - customer-/hardware-specific embedded applications
- Operating system adjustments (PowerPC, ARM, x86)
  - Embedded Linux
  - Windows, Windows CE
  - FreeRTOS
  - VxWorks
  - QNX
- Device driver
  - CAN, CANopen, Modbus
  - USB, RS232/RS485, FireWire
  - Ethernet
  - PCI/PCI Express
  - camera interface (CSI)
- applications with user interface (Qt, GTK, MPEG)

Logic design / System-on-Chip development

- Application examples
  - image processing - performant algorithm implementation
  - microcontroller - highly flexible peripheral expansion
  - power electronics - fast control systems and feedback systems
  - communication – customized for throughput, latency, protocol
- Design
  - selection and integration of 3rd party IP
  - use of highly complex system components (e. g. embedded processors, high-speed I/Os)
  - verification by simulation and hardware tests
- Architectures
  - implementation in all commonly used FPGA and CPLD components (e. g. Xilinx, Altera, Lattice, Actel)
- FPGA conversion to ASIC

Technology in Quality



Layout

- flexible and starr-flex PCB
- multilayer (up to 32 layers)
- impedance-controlled layouts
- design for testability
- design for production
- microvia technology
- blind hole technology
- buried via technology
- programs: Integra Station, Specctra Autorouter, PADS, Protel 99SE/ Altium Designer, Expedition Enterprise, Design-Capture, DxDesigner

Testing tool development / test equipment

- test concept / DFT
- calculation of testing depths and error probabilities
- test software
- test models
- construction of test adapters and test devices
- maintenance and calibration of test equipment
- technologies
  - in-circuit test analog and digital
  - flying probe test
  - function test
  - boundary scan test
  - combi and cluster test
  - burn-in/run-in

Product qualification

- EMC/ESD/CE
  - interference resistance measurements (EN61000 4-4 - BURST, EN61000 4-5 - SURGE, EN61000 4-11 - DIPS, EN61000 4-2 - ESD)
  - interference emissions measurement (EN55011, EN61000 6-4, EN5522, EN61000 6-3)
- UL/CSA
- climate
- vibration and shock
- FMEA
- durability analysis, durability tests

Project management

- project planning
- project management
- project controlling
- target costing
- quality planning
- requirement management
- engineering change management
- product lifecycle management

Mechanics

- 3D construction (Autodesk Inventor Professional, AutoCAD Mechanical)
- simulation (Autodesk Inventor Professional, ICEPAK 12.0)
- mechanical design
- tools
  - cutting and shaping tools
  - plastic injection molding
  - die-cast aluminium
  - tools for process realization and optimization
- Prototyping/small-lot engineering
  - 3D printer
  - stereolithography
  - PU casting
  - CAM-based chipping techniques
  - sheet form techniques
  - surface machining
- testing

Contact

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Technology in Quality