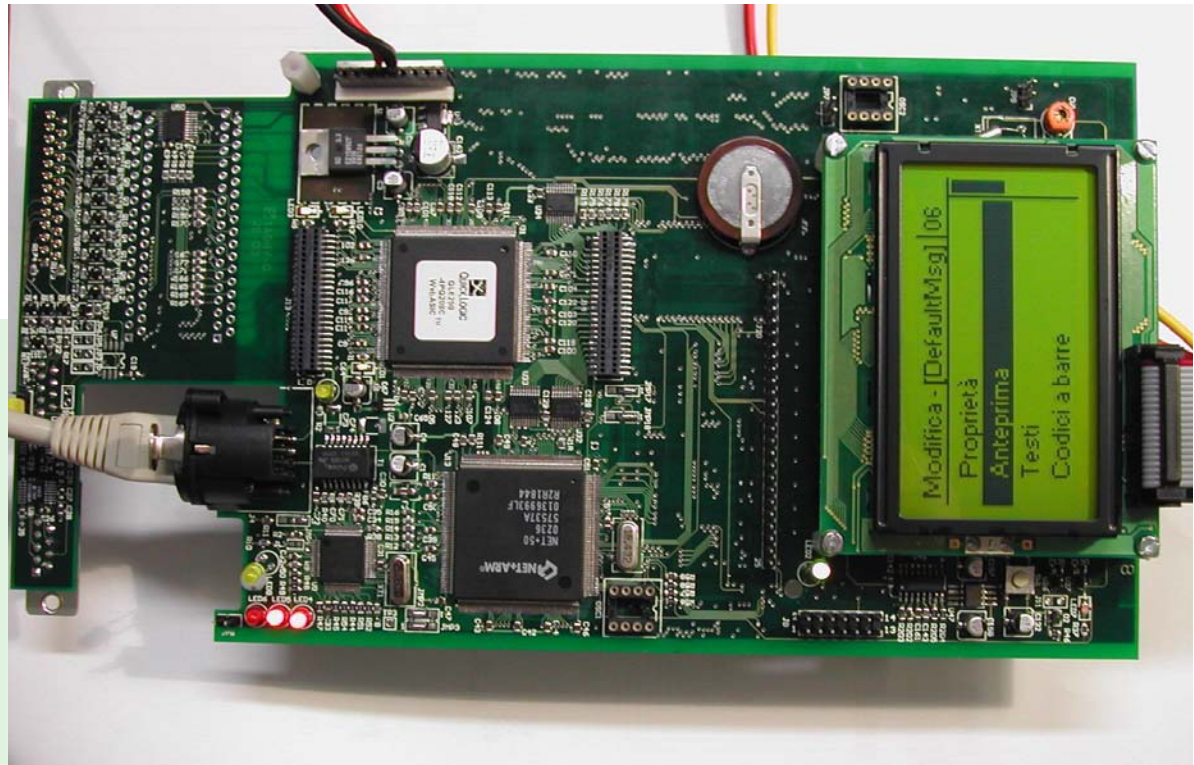


Industrial applications: Print-Head Controller

dual print-head control
for industrial production
lines

- ARM7 & FPGA design
- two independent heads can be controlled
- graphics on LCD
- multilingual User Interface
- TrueType rendering has been ported on ARM7
- barcode generation
- dynamic fields on print buffer tied to belt speed of production line



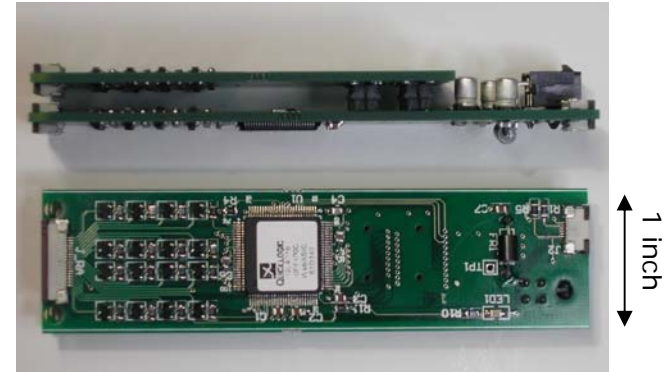
uClinux inside



Industrial applications: 2D Array Controller

Real-time controller for 2D emitter array, up to 400,000 individual outputs, each driven by a 12-bit PWM generator. The design has been partitioned into small daisy-chained array modules.

The daisy-chain controller is driven by an ARM7 processor (running uClinux) that accepts new data from a host through an Ethernet connection, or directly by means of a dedicated 1 Gbps link generated by a custom PCI card inserted into the host



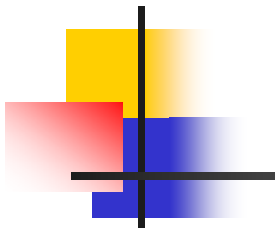
Module with 64 PWM outputs



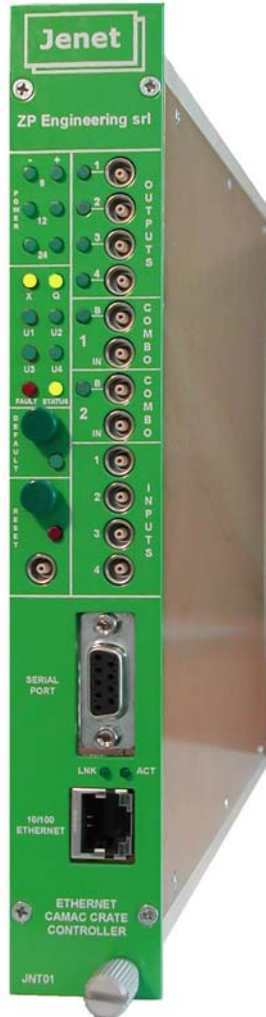
Local controller with 1 Gbps copper link and LAN interfaces



PCI interface for 1 Gbps copper link



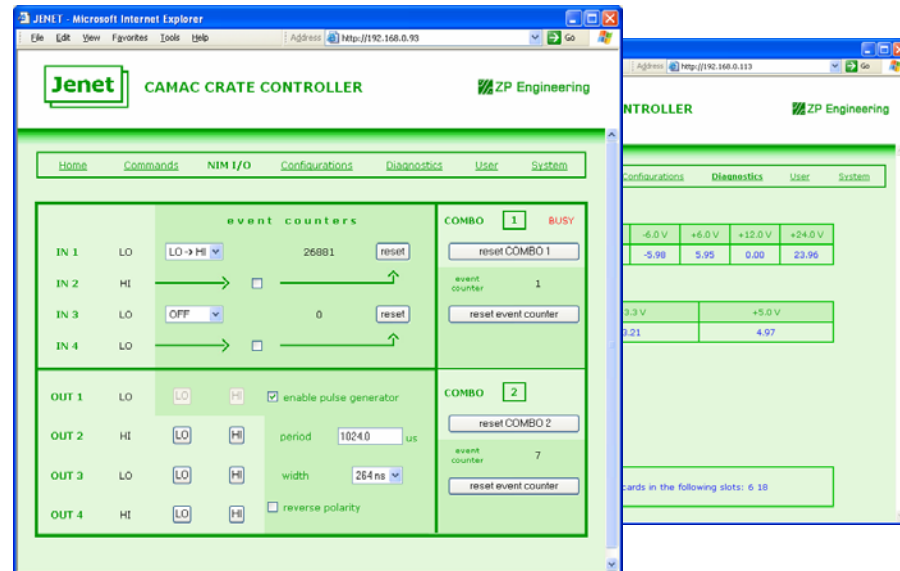
uClinux
inside



Industrial applications: Jenet

CAMAC crate controller

Used in nuclear physics labs and industrial data acquisition systems
Full remote controllability through LAN



Industrial applications: USB scanner

Dual sensor retrofit

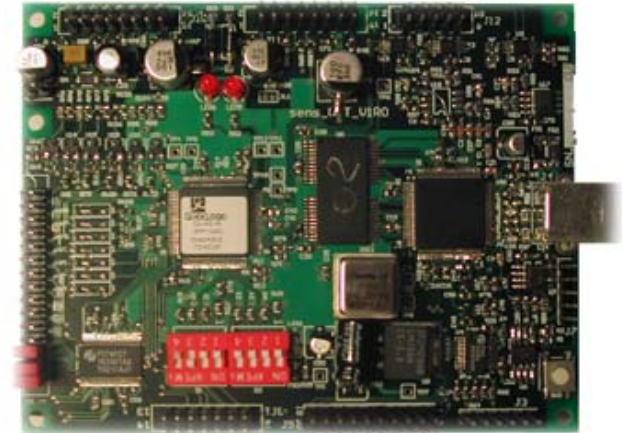
By inserting a FPGA between the path from a commercial USB scanner controller and the interface to sensors and lamps, a specialized dual-sensor scanner has been implemented; it has been possible to use the same drivers and software of the original configuration by recreating all relevant signals on FPGA.

Dual sensor interface on FPGA with microprogrammed signal generation

Microprogram sequencer is reconfigured through USB commands

Existing host driver is fully usable

The two image scans are combined into a single one

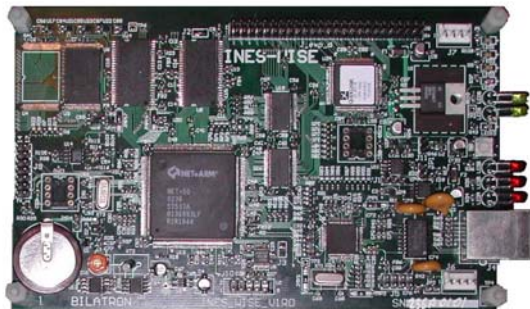
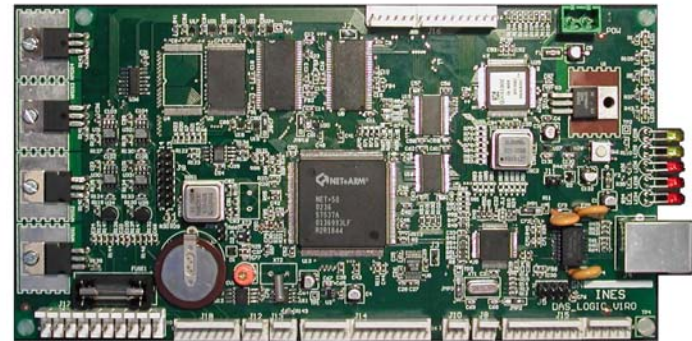


Other industrial applications

uClinux inside

Blood Analyzer Retrofit

- NET+50 & FPGA design
- 4 channel of closed-loop temperature control
- 2 serial port servers
- socket-based control
- evolution of serial port control from host of a small network of 8051 cards



- NET+50 & FPGA design
- 2 card design
- strain gauge bridge drive and measurement
- belt speed measurement
- heuristic algorithm for weight calculation implemented in a script

Industrial Weighting System