

Experience in using credit-card size boards based on Coldfire microprocessors and running under μ Clinux

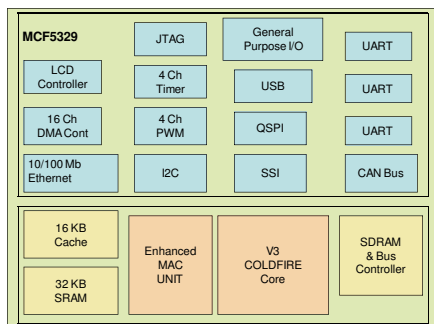
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Why using Coldfire?

- Very low dissipated power (0.25 W typ.), no need for forced cooling.
- Plenty of integrated peripherals available on chip, 100 Mb/s Ethernet as standard feature.
- Easy system integration: built-in memory controller, simple interface to user hardware.
- Good support for software development under Linux

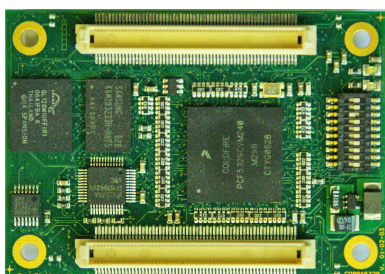
The MCF5329

- V3 core, up to 211 MIPS @240 MHz
- MAC hardware
- 4 Timers, 3 UARTs, 1 USB port
- CAN bus and I²C controller
- Integrated LCD controller for applications in portable instruments.
- Cost: 15 \$



The Sentec COBRA5329 board

- Very small size: 48x68 mm.
- Complete system: no external components (other than connectors) required to operate
- On board RAM and FLASH adequate for most applications
- High density, stackable connectors for easy system expansion.
- The board comes with a debugger and a ready-to-run Linux image on FLASH.



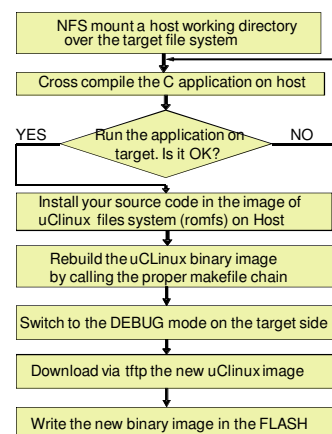
The μ Clinux OS essentials

- Small footprint (just 2 MB in the basic configuration)
- Single user, no memory management
- Creates a Unix-like file system on RAM
- I/O system compatible with standard Linux ioctl()
- Support for NFS and basic network protocols
- Development toolkit available on Windows and almost all Linux platforms

The software development cycle

- Simple debugging through NFS
- Installing a user application requires to completely rebuild the OS image on FLASH.

Software Development Flow



A simple application

- The I/O capability can be easily expanded by means of a 3.3 V compliant FPGA
- Interfacing to the FlexBus is straightforward; no need to deal with complex timing signals for data transfer
- Adding an Ethernet RJ45 connector and a RS232 driver is sufficient to realize an embedded control unit.

