Motorola's ColdFire® MCF5272 Integrated Microprocessor

With the addition of a 10/100 Ethernet controller and a USB module, the MCF5272 integrated communications microprocessor takes the ColdFire family to a higher level of integration. Not only does this processor offer a new set of communication peripherals, but it

Integrated Peripherals

The MCF5272 microprocessor features exciting new peripherals:

- Fast Ethernet Media Access Controller (MAC), supporting 100 Mbps MII, 10 Mbps MII, and 10 Mbps 7-wire physical interfaces

This highly-integrated ColdFire microprocessor incorporates communication peripherals such as Ethernet and USB.

features popular general-purpose peripherals included on previous ColdFire standard products. The MCF5272's expanded peripheral set and attractive pricing make this most highly-integrated ColdFire microprocessor a perfect fit for a broad range of embedded applications such as Internet appliance, LAN telephony, low-end networking control, industrial control, imaging, and storage.

High System Performance

The MCF5272 microprocessor is based on a Version 2 (V2) ColdFire core. With 63 Dhrystone 2.1 MIPS at 66 MHz, it achieves the highest V2 performance yet. As with all ColdFire devices, the architecture offers excellent code density, while achieving outstanding levels of system performance. The MCF5272 product is a great complement to the 68302 family because it shares the 68K programming model and provides a significantly higher perform-ance alternative where a communication peripheral set is required.

- USB 1.1 compliant device controller operating with either an internal or external transceiver
- Time Division Multiplex (TDM) controller allowing the product to connect at a physical level with external codecs, ISDN transceivers, and other peripheral devices which use either the General Circuit Interface (GCI) or Interchip Digital Link (IDL) serial interface protocols
- Multi-channel HDLC software module
- QSPI module providing a serial periph-eral interface with queued transfer capability
- Pulse Width Modulation (PWM) units for use in control applications.

The MCF5272 device also provides peripherals common to many embedded applications such as SDRAM controller, DMA, timers, UARTs, chip selects, general purpose I/O, on-chip memories, and the world-class ColdFire debug module, all integrated in a cost-effective manner to reduce system cost and speed system design.

Digital DNA™
from Motorola

Fast Time to Market

The MCF5272 microprocessor builds on and extends the successful 68K family by providing a compatible environment for 68K and ColdFire microprocessor customers in which world-class third party development tools, software and programmer's familiarity are quickly leveraged. In fact, customers moving from 68K to ColdFire microprocessors can use a code translation tool free of charge, subject to a licensing agreement, to facilitate modifying and reusing 68K assembly. By delivering on the development roadmap for the 100% synthesizable ColdFire family, Motorola provides room to grow and powerful new capabilities for designers eager to create new classes of electronic products while leveraging previous investments.
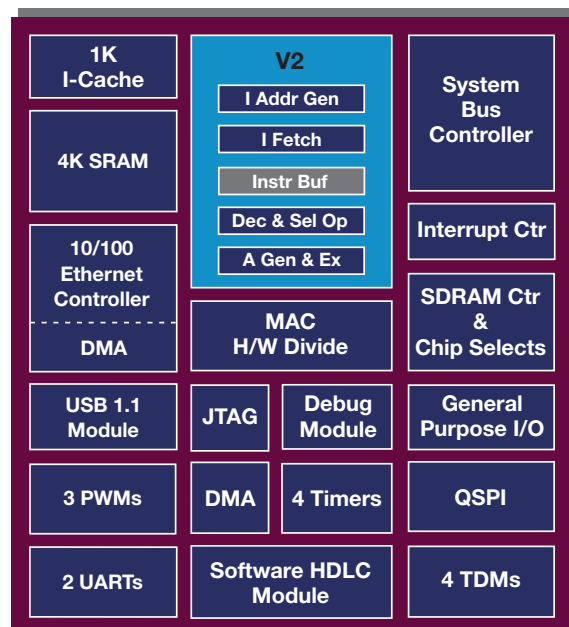
Features

- V2 ColdFire processor
- 1 Kbyte instruction cache
- 4 Kbyte SRAM
- Multiply-Accumulate Unit (MAC)
- Hardware integer divide unit
- Industry-leading debug module offering both background and real time capabilities
- Integrated processor
  - IEEE 802.3 compliant 10/100 Fast Ethernet Controller (FEC), with dedicated DMA
  - USB 1.1 device controller and transceiver
  - 4 2B+D TDM ports
  - HDLC software module
  - QSPI
  - SDRAM controller
  - 3 PWM outputs
  - 2 UARTs
  - 1-channel DMA
  - 8 chip selects
  - 16-bit general-purpose I/Os
  - 4 16-bit timers
  - SW watchdog timer
- Doze mode

Product Specifications

- 63 Dhrystone 2.1 MIPS @ 66 MHz
- 0°-70° C operating temperature
- Implemented in 0.35µm TLM
- 3.3-V supply, 5-V I/O tolerant
- 196-pin MAPBGA package