

MCF5222x Family

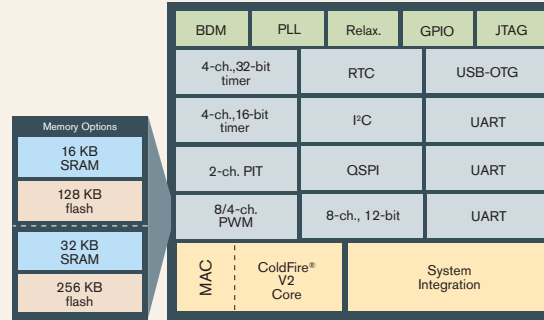
Overview

Connecting 32-bit controlled applications in the industrial, commercial and even consumer markets is fast becoming a necessity rather than an option. Freescale Semiconductor gives development engineers the flexibility to choose the right microcontroller from a broad portfolio of ColdFire® embedded controllers. As the latest member of the ColdFire portfolio, the MCF5222x Family offers a highly integrated system solution that addresses the need for cost-effective flexible connectivity options with 32-bit performance and memory requirements on a single chip.

Built using the popular Version 2 ColdFire core, the MCF5222x Family offers up to 76 MIPS (Dhrystone 2.1) at 80 MHz. It builds upon the successful MCF5213 Family by integrating a USB On-The-Go (OTG) controller, making it ideal for applications requiring device or host connectivity functionality. The MCF5222x microcontrollers are aimed at designers who want the power and flexibility of a 32-bit microcontroller plus a rich set of on-chip connectivity peripherals at a low cost. These small, highly integrated microcontrollers open the door to expanding application capabilities while driving down total system costs.

The MCF5222x Family targets embedded control applications such as home/factory automation, point-of-sale, health care, testing equipment and consumer applications.

**MCF5222X
BLOCK DIAGRAM**



Full Featured, Cost Effective

In today's increasingly competitive embedded marketplace, the importance of keeping system costs down is of increasing concern. The MCF5222x gives product designers a cost-effective, full featured solution with USB-OTG that allows them to drive straight ahead, creating next-generation systems quickly and getting them to market ahead of their competition. In addition to the USB-OTG, the MCF5222x has the advanced features that the ColdFire Family has been known for, including 32 KB SRAM, 256 KB flash, an 8-channel, 12-bit analog-to-digital converter (ADC), various 32-bit timers and advanced pulse-width-modulation (PWM) channels.

The MCF222x Family is a migration path for existing 8/16-bit designers looking to incorporate flexible connectivity into their designs. The family integrates the standard ColdFire communication peripherals, including three universal asynchronous receiver/transmitters (UARTs) for medium to long distance connections, an

inter-integrated circuit (I²C) and a queued serial peripheral interface (QSPI) for in-system communication to connected peripherals. These features are built around the high-performance ColdFire V2 core that incorporates a multiply-accumulate (MAC) module that allows for DSP-like operation.

Tools and Support

The ColdFire embedded controller family is supported by development tool suites offered through leading third-party tools developers. Each kit includes the CodeWarrior™ Special Edition software tools and professional tools from Freescale partners, such as Green Hills Software, Wind River Systems, Accelerated Technology, MOXEmbedded and others. The M52223EVB development kit is an easy-to-use yet cost-effective solution that simplifies product development and speeds customer time to market. Further development assistance is available through Freescale's web-based Fast Track™ support resources, including online training and technical support.



DEVICE MATRIX

Part Number	Flash/SRAM	Key Features	Package	Speed	MSRP*
MCF52221	128 KB/16 KB	USB-OTG, USB transceiver, 3 UARTs, I ² C, QSPI, 16-bit/32-bit/PWM timers, DMA, A/D	64 LQFP 81 MAPBGA	66 MHz 80 MHz	From \$5.49
MCF52223	256 KB/32 KB	USB-OTG, USB transceiver, 3 UARTs, I ² C, QSPI, 16-bit/32-bit/PWM timers, DMA, A/D	100 LQFP 81 MAPBGA	66 MHz 80 MHz	From \$6.99
M52223EVB		Development Kit			\$299
M52221DEMO		Cost-Effective Board			\$99

*Suggested pricing in units of 10K

MCF5222x ColdFire V2 Core Features

- > Up to 76 Dhrystone 2.1 MIPS at 80 MHz
- > MAC module and hardware divide
- > Up to 32 KB SRAM
- > Up to 256 KB flash
- > 100 KB write/erase cycles, 10 year data retention
- > USB 2.0 full-speed Host/Device/OTG controller
- > Three UARTs
- > QSPI
- > I²C bus interface
- > 4-channel, 32-bit timers
- > 4-channel, 16-bit capture/compare/PWM timers

- > 2-channel periodic interrupt timer
- > 8-channel, 8-bit PWM timer or 4-channel, 16-bit PWM timer
- > 8-channel, 12-bit ADC with simultaneous sampling
- > Real-time clock
- > Up to 56 general-purpose input/outputs (GPIOs)
- > System integration (phase-locked loop and software watchdog)
- > Relaxation oscillator
- > Single 3.3-volt supply
- > Temperature ranges from -40°C to +85°C
- > Available speeds—66 MHz and 80 MHz
- > Pin-compatible with MCF5211/12/13

Target Applications

- > ZigBee™ control nodes
- > Security/access control panels
- > Health care-related pumps and monitors
- > Lighting control nodes
- > Home/industrial automation
- > Point-of-sale terminals
- > Factory service and maintenance systems

Learn More: For more information about Freescale products, please visit www.freescale.com.