



Register ▾

Login ▾

Basket ▾

Part Number

Keyword

Advanced | Parametric

Home | Contact Us

Products Applications Technologies Support Where to Buy About Freescale

MCF5214

Parametrics

Documentation ▾

Design Tools ▾

Orderable Parts 

Samples

Related Products

Related Links

FAQ

3rd Party Support ▸

Freescale > 68K/ColdFire > ColdFire > ColdFire MCF521X > MCF5214

MCF5214 : Integrated ColdFire Version 2 Microcontroller

SUBSCRIBE ▾

The MCF5214 addresses the growing demand for 32-bit microcontrollers at a lower cost and expands Freescale Semiconductor's 32-bit Flash-based ColdFire MCU family. The MCF5214 provides an upgrade for current MMC2114 users who require higher performance with a richer set of the same peripheral mix while standardizing on one low-cost, low-power MCU family. Also, current users of the MMC2107 and MMC2113 can utilize the MCF5214 for applications requiring more flash.

The MCF5214 cost-effectively integrates digital and analog peripherals with RAM, embedded FLASH memory, and a 32-bit ColdFire core on a single-chip. The MCF5214 includes a QADC, QSPI and CAN for industrial control, security and other control-oriented applications.

Rate this Page

-- - 0 + ++

[Care to Comment?](#)

MCF5214 Features

- V2 ColdFire core delivering 63 (Dhrystone 2.1) MIPS at 66 MHz running from Cache/RAM (max running from internal flash 54 MIPS)
- 256Kbytes embedded flash memory
- Enhanced Multiply-Accumulate Unit (eMAC) for DSP functionality
- 64 Kbytes of static RAM
- Cache for external access support
- Address decode and chip selects
- CAN 2.0B controller area network interface with 16 message buffers
- Three UARTs with DMA capability
- Queued serial peripheral interface (QSPI) with four peripheral chip selects
- 8-channel 10-bit queued analog-to-digital converter (QADC)
- Four 32-bit timers with capture, compare and DMA capability
- Eight 16-bit timer channels for capture, compare, and pulse width modulation
- Four periodic interrupt timers (PITs)
- I2C bus controller
- JTAG for board testing
- BDM for debug, including real-time trace
- 17 mm x 17 mm x 1.6 mm 256-ball MAPBGA package
- Operation at 66 MHz from -40C to +85C
- Available software package including real-time operating system
- Metrowerks CodeWarrior support
- Extensive third party tools and software support

▲ [Return to Top](#)

MCF5214 Parametrics

CPU Performance (Max) (MIPS)	Operating Frequency (Max) (MHz)	Ambient Operating Temperature (Min) (oC)	Ambient Operating Temperature (Max) (oC)	Core Operating Voltage (Spec) (V)	I/O Operating Voltage (Max) (V)	GPIO Pins	Internal RAM (Byte)
54	66	-40	85	3.3	5	142	64000

Serial Interface		Other Peripherals
Type	Number of Interfaces	
FlexCAN, I2C, QSPI, UART	1, 3	256KB Flash, DMA Controller, EMAC, Interrupt Controller, JTAG, PLL, Watchdog Timer

[▲ Return to Top](#)

MCF5214 Documentation**Documentation****Application Notes**

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
<u>AN2393</u> Migrating from the MMC2114 to the MCF5282	FREESCALE	pdf	1020	0	11/22/2002
<u>AN2168</u> AN2168 ColdFire Microprocessor DMA Controller Application Note	FREESCALE	pdf	791	0	1/31/2001
<u>AN1766</u> Using the SDRAM Controller on the MCF5307 ColdFire Integrated Processor Application Note	FREESCALE	pdf	428	2.0	3/12/1999

Brochures

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
<u>BRCOLDFIRESUM</u> ColdFire Product Summary Guide	FREESCALE	pdf	165	2	4/24/2006
<u>COLDFIRE OVERVIEW</u> ColdFire Family Overview Brochure	FREESCALE	pdf	6925	2	3/20/2006

Errata - [Click here for important errata information](#)

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
<u>MCF5216DE</u> MCF5216 Integrated Microcontroller Device Errata (Supports MCF5214)	FREESCALE	pdf	451	1.7	9/28/2004

Product Briefs

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
<u>MCF5216PB</u> MCF5216 Integrated Microcontroller Product Brief	FREESCALE	pdf	717	0	3/29/2004

Reference Manuals

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
					
CFLMOPM Library of Macros for Optimization Using eMAC and MAC Programmer's Manual	FREESCALE	pdf	477	1	10/24/2005
CFLMOPMSW Software for the Library of Macros for Optimization Using eMAC and MAC Programmer's Manual	FREESCALE	zip	55	0	10/24/2005
CFPRM ColdFire Family Programmer's Reference Manual	FREESCALE	pdf	1666	3	3/08/2005
DSPLIBUM Digital Signal Processing Libraries Using the ColdFire eMAC and MAC	FREESCALE	pdf	294	1.2	3/13/2006
DSPLIBUMSW "Digital Signal Processing Libraries Using the ColdFire eMAC and MAC User's Manual" Software	FREESCALE	zip	1007	0	5/18/2006
MCF5216UM MCF5216 ColdFire Microcontroller User's Manual	FREESCALE	pdf	6729	0	3/29/2004

Roadmap

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
COLDFIRERD ColdFire Performance Roadmap	FREESCALE	pdf	29	1	6/07/2005

Selector Guides

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
SG1001 32-Bit Embedded Processors SG1001Q12006	FREESCALE	pdf	1409	0	4/26/2006
SG1006 Microcontrollers	FREESCALE	pdf	1531	0	4/26/2006

White Papers

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified
MCF5XXDBWP MCF5XXDBWP Debug Support on the ColdFire Architecture	FREESCALE	pdf	215	0	1/01/1999

 [Return to Top](#)

MCF5214 Design Tools**Hardware Tools****Emulators/Probes/Wigglers**

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
ADV-BDM-CF Advanced BDM Adaptor The Cybertec Advanced BDM PC Parallel Port Adaptor provides an inexpensive means of connecting the Background Debug Mode (BDM) interface of a variety of Freescale ColdFire microprocessors (5206e, 52xx series, 53xx series and 54xx series)	CYBERTEC	-	-	-	-
CABLE_CFLV CABLE_CFLV P&E's Shielded ColdFire Interface Cable provides access to the Background Debug Mode (BDM) on Freescale ColdFire microcontroller. It is the hardware interface between a standard IBM PC parallel port and a standard 26 pin connector.	PEMICRO	-	-	-	-
PKGCFZ-USB PKGCFZ-USB The ColdFire BDM Development Package (USB Interface And Software) is a powerful, inexpensive, Windows-based development suite for Freescale's MCF52xx/53xx/54xx microcontrollers. Produce ColdFire applications and debug your applications.	PEMICRO	-	-	-	-

PROBE

Green Hills Probe & Slingshot
High speed on-chip download and run control.

GREENHILLS

-

-

-

-

WRICE

Wind River ICE
The Wind River ICE is a JTAG hardware run control device that supports multiple JTAG, EJTAG, and BDM devices on a single scan chain. It can support connections for up to eight devices simultaneously in a scan chain of up to 128 JTAG devices.

WINDRIV

-

-

-

-

Evaluation/Development Boards and Systems

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
M5282EVB	FREESCALE	-	-	-	Buy Direct
M5282EVB Evaluation Board supporting MCF5282/81/80/16/14					Distributor

Models**BSDL**

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
MCF5214BSDL	FREESCALE	zip	10	1.2	Download
MCF5214 BSDL					

Programmers

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
CYCLONE MAX	PEMICRO	-	-	-	-
CYCLONE MAX A stand-alone programmer and hardware debug interface for ColdFire, PowerPC, and ARM, the Cyclone Max is an extremely flexible tool designed for Flash Programming, Debugging, and Testing of microprocessor based systems.					
CYCLONEMAX	PEMICRO	-	-	-	-
Cyclone Max High-speed, low-cost, in-circuit programming of Freescale ColdFire and PowerPC based systems. Stand-alone or host-controlled operation. USB, serial, 10/100 ethernet, and 1.8v-5.0v target support. Programs internal and external flash.					

Software**Application Software****Code Examples**

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
M5282EVBDEBUG	FREESCALE	zip	580	v3a.1a.1b	Download
M5282EVB dBUG source files					
MCF5282I2C	FREESCALE	zip	126	2.0	Download
MCF5282 I2C example code					
MCF5282SC	FREESCALE	zip	97	1c	Download
MCF5282/MCF5280 processor initialization template, header files, and software examples updated revision to include TFTP example and CodeWarrior projects for internal flash					
RAM_CACHE_TEST	FREESCALE	zip	1856	1.1	Download
MCF528x and MCF5216/14 SRAM and cache test code					

Board Support Packages

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
INTEGRITY/VELOCITY/MULTI BSP	GREENHILLS	-	-	-	-
Green Hills BSP The Green Hills BSP provides INTEGRITY & veLOsity RTOSes and MULTI debugger for board- specific cross development through the Green Hills Probe, Slingshot or P&E Wiggler or, if no board is available, to the MULTI instruction set simulator.					

Device Drivers

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
5282FLASH MCF5282 internal Flash program/erase software driver	FREESCALE	zip	1620	3.1.1	Download

Operating Systems

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
ARC-MQX-RTOS MQX RTOS MQX RTOS provides proven performance, with blazing real-time speed within a tiny footprint. MQX RTOS is designed to be easy to configure to balance code size with performance requirements.	MQX	-	-	-	-
 CMX00215 CMX-RTX	CMX	-	-	-	Buy Direct
 CMX00215A CMXKAware	CMX	-	-	-	-
CMX00305 CMX TCP/IP CMX TCP/IP is a full-featured and fast TCP/IP stack that allows designers to offer networking connectivity for their embedded applications. CMX TCP/IP offers a low licensing fee, full source code, no royalties, and free technical support.	CMX	-	-	-	-
CMX00305B TCP/IP DHCP Server The CMX TCP/IP DHCP Server Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Dynamic Host Configuration Protocol standard. A source code example is provided for fast design start up.	CMX	-	-	-	-
CMX00305C TCP/IP FTP C/S The CMX TCP/IP FTP Client/Server Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the File Transfer Protocol standard. A source code example is provided for fast design start up.	CMX	-	-	-	-
CMX00305E TCP/IP NAT The CMX TCP/IP NAT Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to add Network Address Translation function to a network application. Source code example provided for fast design start up.	CMX	-	-	-	-
CMX00305F TCP/IP POP3 The CMX TCP/IP POP3 Client Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Post Office Protocol Client standard. A source code example is provided for fast design start up.	CMX	-	-	-	-
CMX00305G TCP/IP PPP The CMX TCP/IP PPP Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Point to Point Protocol serial or modem connectivity standard. Source code example provided for fast start up.	CMX	-	-	-	-
CMX00305H TCP/IP PPPoE The CMX TCP/IP PPPoE Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Point to Point Protocol over Ethernet standard. A source code example is provided for fast design start up.	CMX	-	-	-	-
CMX00305I TCP/IP SMTP The CMX TCP/IP SMTP Client Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Simple Mail Transfer Protocol standard. A source code example is provided for fast design start up.	CMX	-	-	-	-

CMX00305J TCP/IP SNMP The CMX TCP/IP SNMP V1 and V2c Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Simple Network Management Protocol standard. Source code example provided for fast design start up.	CMX	-	-	-	-
CMX00305L TCP/IP Telnet The CMX TCP/IP TFTP Client/Server Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Trivial File Transfer Protocol Client/Server standard. Source code example for fast start up.	CMX	-	-	-	-
CMX00305M TCP/IP Web Client The CMX TCP/IP Web Client/Server Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Hyper Text Transfer Protocol (HTTP) Web Client/Server standard. Source code example provided.	CMX	-	-	-	-
CMX00305N TCP/IP Web Server The CMX TCP/IP Web Server Add-On Option provides CMX TCP/IP (see CMX00300, CMX00305, or CMX00310) with functionality to support the Hyper Text Transfer Protocol (HTTP) Web Server standard. Source code example provided for fast start up.	CMX	-	-	-	-
CMX00610 CMX-FFS CMX-FFS is a very small, standard Flash File System that allows designers to offer file system functionality for their embedded applications. CMX-FFS offers a low licensing fee, full source code, no royalties, and free technical support.	CMX	-	-	-	-
SMXCF SMX Modular RTOS for ColdFire smxCF is designed for the ColdFire processor family. It features hard real-time multitasking, networking, file management, USB, user interface, and full support for Metrowerks CodeWarrior.	MICRODIG	-	-	-	-

Programmers

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
CFFLASH CFflasher 3.1 A free flash programming utility for Freescale ColdFire evaluation boards.	FREESCALE	zip	4377	3.1.1	Download
PROGCFZ PRO USB PROGCFZ PRO USB The PROGCF PRO ColdFire Flash/EEPROM Programmer is a Windows BDM Programmer allows you to program/reprogram external flash devices in-circuit, via one of P&E's hardware interfaces, to give the user access to all on-chip resources.	PEMICRO	-	-	-	-

Protocol Stacks

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
SSH_SERVER Embedded SSH Server MOCANA SSH SERVER: Supports Freescale chipsets out of the box. Small (70KB), fast, trusted. FIPS Cryptos. Supports all major cryptos. Royalty free, source code license. FREE EVAL: http://www.mocana.com/fsevaluate.html	MOCANA	-	-	-	-
SSL_CLIENT Embedded SSL/TLS Client MOCANA SSL/TLS CLIENT: Supports Freescale chipsets out of the box. Small (65KB), fast, trusted. FIPS crypto. Supports all major cryptos. Royalty free, source code license. FREE EVAL: http://www.mocana.com/fsevaluate.html	MOCANA	-	-	-	-
SSL_SERVER Embedded SSL/TLS Server MOCANA SSL/TLS SERVER: Supports Freescale chipsets out of the box. Small (50KB), fast, trusted. FIPS cryptos. Supports all major cryptos. Royalty free, source code license. FREE EVAL: http://www.mocana.com/fsevaluate.html	MOCANA	-	-	-	-

UC/TCP-IP**uC/TCP-IP**

uC/TCP-IP is a compact, reliable, high performance TCP/IP protocol stack. Built from the ground up with Micrium's renowned quality, scalability and reliability, uC/TCP-IP enables the rapid configuration of required network options.

MICRIUM

-

-

-

-

Software Tools**Compilers****ID and Description****Vendor ID****Format****Size K****Rev #****Availability****COMPILER****C/C++ Compiler**

Optimizing C, C++, EC++ compilers for Freescale PowerPC, ColdFire, StarCore, 68K, MCore and ARM-based MAC architectures.

GREENHILLS

-

-

-

-

CWS-MCF-STDED-CX

CodeWarrior Development Studio for ColdFire Architectures, Standard Edition

FREESCALE

-

-

-

[Buy Direct](#)
[Distributor](#)
Debuggers**ID and Description****Vendor ID****Format****Size K****Rev #****Availability****CWS-MCF-STDED-CX**

CodeWarrior Development Studio for ColdFire Architectures, Standard Edition

FREESCALE

-

-

-

[Buy Direct](#)
[Distributor](#)
ICDCFZ**ICDCFZ**

P&E's ICDCFZ for Windows is a powerful ColdFire In-Circuit Debugger. It uses the processor's background debug mode (BDM), via one of P&E's hardware interfaces, to give the user access to all on-chip resources.

PEMICRO

-

-

-

-

IDE (Integrated Development Environment)**ID and Description****Vendor ID****Format****Size K****Rev #****Availability****CROSSFIRE-LINUX****CrossFire Tools**

The CrossFire Tools are a low cost, easy to install, C/C++ development environment for the Freescale ColdFire family of Microprocessors. Based on GNU compiler tools, CrossFire Tools are available in both Windows and Linux versions

CYBERTEC

-

-

-

-

CROSSFIRE-WIN**CrossFire Tools**

The CrossFire Tools are a low cost, easy to install, C/C++ development environment for the Freescale ColdFire family of Microprocessors. Based on GNU compiler tools, CrossFire Tools are available in both Windows and Linux versions

CYBERTEC

-

-

-

-

CWS-MCF-STDED-CX

CodeWarrior Development Studio for ColdFire Architectures, Standard Edition

FREESCALE

-

-

-

[Buy Direct](#)
[Distributor](#)
IC-SW-OPR**winIDEA**

winIDEA integrates a Project Manager, Source Code Editor, High and Low Level Debugger, and Flash Programmer, all into one easy-to-use Windows application. It is the one user interface for all of our emulators and debuggers.

ISYS

-

-

-

-

MULTI**MULTI**

MULTI is a complete integrated development environment for embedded applications for C/C+++, Embedded C++ and includes an advanced debugger, profiler, run-time memory checking, project builder, editor, instruction set simulator and more.

GREENHILLS

-

-

-

-

SBCTOOLS-WF**SBCTools-WF, Eclipse Edition**

Complete software development tools-set, including GCC, GDB, TCP/IP stack, serial console and target config services, all accessible seamlessly through Eclipse. Includes WildFire BSP with h/w interface libraries and annotated demo programs.

INTEC

-

-

-

-

Initialization/Boot Code Generation

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
COLDFIRE_INIT MicroAPL Limited's ColdFire Graphical Configuration Tool	MICROAPL	zip	6	n/a	Download

Performance and Testing

ID and Description	Vendor ID	Format	Size K	Rev #	Availability
UNITCFZ_DIST UNITCFZ_DIST The UNITCFZ software package consists of an interface DLL and sample code which allows a custom application to be built which can interact with and debug a ColdFire based system via one of P&E's hardware interfaces.	PEMICRO	-	-	-	-

[▲ Return to Top](#)

Orderable Parts Information

Order	Part Number	Package Description	Tape and Reel	Application/ Qualification Tier	Status	Budgetary Price QTY 1000+ (\$US)	Compliance		RoHS Replacement Part	Details
							Package Peak Temperature (°C)	RoHS		
Order Samples Distributor	MCF5214CVF66	MAPBGA 256 17*17*0.8P1.0	No	COMMERCIAL, INDUSTRIAL	Active	\$14.43	260	No	MCF5214CVM66	view
Order Samples Distributor	MCF5214CVM66	MAPBGA 256 17*17*0.8P1.0	No	COMMERCIAL, INDUSTRIAL	Active	\$11.97	260		-	view

NOTE:

- Not all orderable parts are offered through our online sampling program. For further assistance in selecting a similar part from within the program, please submit a [Request for a sample order advice](#).
- Refer to [Samples FAQ](#) for more information.
- Looking for an obsolete part? Check our new [part number search](#)

[▲ Return to Top](#)

Related Products

- ▶ [MCF5211 : Integrated ColdFire Version 2 Microcontroller](#)
The MCF5211 microcontroller is a low cost, low power single-chip solution with up to 128KB of high performance, near-single access, interleaved and securable ...
- ▶ [MCF5212 : Integrated ColdFire Version 2 Microcontroller](#)
The MCF5212 microcontroller is a cost-sensitive, low power single-chip solution with up to 256KB of high performance, near-single access, interleaved and ...
- ▶ [MCF5213 : Integrated ColdFire Version 2 Microcontroller](#)
The MCF5213 microcontroller is a cost-sensitive, low power single-chip solution with up to 256KB of high performance, near-single access, interleaved and securable ...

[▲ Return to Top](#)

Related Links

- ▶ [68K/ColdFire](#)
- ▶ [Freescale's Advanced Telecommunications Computing Architecture \(ATCA\)](#)
- ▶ [Industrial Control](#)
- ▶ [CodeWarrior Development Studio Instructions for MCF5214 and MCF5216 Support](#)

[▲ Return to Top](#)

www.freescale.com | [Site Map](#) | [Terms of Use](#) | [Privacy Practices](#) | [XML](#) | [What is this?](#) |
© Freescale Semiconductor, Inc. 2004 - 2006. All Rights Reserved