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Microcontrollers > 16-Bit (HCS12, M68HC12, M68HC16, 56800/E) > HCS12 Automotive Family > MC9S12B64

MC9S12B64 : 16-Bit Automotive Microcontroller

SUB ▶

Preliminary information. Please contact us for additional information.

Designed for automotive multiplexing applications, members of the MC9S12B-Family of 16 bit Flash-based microcontrollers are fully pin compatible and enable users to choose between different memory and peripheral options for scalable designs.

The MC9S12B64 is composed of standard on-chip peripherals including a 16-bit central processing unit (CPU12), 64K bytes of Flash EEPROM, 2K bytes of RAM, 1K bytes of EEPROM, two asynchronous serial communications interfaces (SCI), serial peripheral interface (SPI), an input capture/output compare timer (TIM), 16-channel, 10-bit analog-to-digital converter (ADC), an 8-channel pulse-width modulator (PWM), and one CAN 2.0 A, B software compatible module (MSCAN12), and an Inter-IC Bus.

System resource mapping, clock generation, interrupt control and bus interfacing are managed by the lite integration module (LIM). The MC9S12B64 has full 16-bit data paths throughout, however, the external bus can operate in an 8-bit narrow mode so single 8-bit wide memory can be interfaced for lower cost systems. The inclusion of a PLL circuit allows power consumption and performance to be adjusted to suit operational requirements. In addition to the I/O ports available in each module, up to 22 I/O ports are available with Wake-Up capability from STOP or WAIT mode.

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- 16-bit HCS12 CPU
 - Upward compatible with M68HC11 instruction set
 - Interrupt stacking and programmer's model identical to M68HC11
 - Instruction pipe
 - Enhanced indexed addressing
- Multiplexed External Bus
- Memory
 - 64K byte Flash EEPROM
 - 1K byte EEPROM
 - 2K byte RAM
- One 16-channel Analog-to-Digital Converter
 - 10-bit resolution
- One 1M bit per second, CAN 2.0 A, B software compatible module

▲ [Return to Top](#)**MC9S12B64 Documentation****Documentation****Application Note**

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
Loading...					Loading...	
<u>AN2727</u> Designing Hardware for the HCS12 D-Family	FREESCALE	pdf	479	0	12/15/2004	
<u>AN2597SW</u> Software files for application note AN2597	FREESCALE	zip	324	0	11/04/2004	-
<u>AN2287</u> HCS12 External Bus Design	FREESCALE	pdf	577	1	8/27/2004	
<u>AN2408</u> Examples of HCS12 External Bus Design; A Companion Note to AN2287/D	FREESCALE	pdf	565	2	8/13/2004	

AN2548SW1

Software for application note AN2548. Part 1 of a 2-part set.

FREESCALE

zip

162

1.0

7/21/2004

-

AN2548SW2

Software to accompany application note AN2548. Part 2 of a 2-part set.

FREESCALE

zip

22

1.0

7/21/2004

-

AN2720SW

Software files for AN2720/D

FREESCALE

zip

2

1.0

7/21/2004

-

AN2720

A Utility for Programming Single FLASH Array HCS12 MCUs, with Minimum RAM Overhead

FREESCALE

pdf

339

1

5/27/2004

**AN2250SW2**

Software files for application note AN2250. Part 2 of a 3 part set.

FREESCALE

zip

139

0

12/05/2003

-

AN2250SW1

Software files for application note AN2250. Part 1 of a 3 part set

FREESCALE

zip

51

1

12/03/2003

-

AN2250SW3

Software Files For Application Note AN2250. Part 3 of a 3 Part Set.

FREESCALE

zip

487

1

12/03/2003

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AN2597

Using the MC9S12E128 to Implement an IrDA Interface

FREESCALE

pdf

702

0

10/17/2003

**AN2548**

Serial Monitor Program for HCS12 MCUs

FREESCALE

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9/11/2003

**AN2400**

HCS12 NVM Guidelines

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808

3

7/30/2003

**AN2428**

An Overview of the HCS12 ATD Module

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**AN2429**

Interfacing to the HCS12 ATD Module

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**AN2438**

ADC Definitions and Specifications

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**AN2461**

Low Power Management using HCS12 and SBC devices

FREESCALE

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2/07/2003

**AN2318SW**

Source code for use with AN2318/D

FREESCALE

zip

108

1

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AN2304SW

Software Files for AN2304

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AN2304

Implementation of a UDP/IP Stack on HCS12 Microcontrollers

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**AN2342**

Opto Isolation Circuits For In Circuit Debugging of 68HC9(S)12 and 68HC908 Microcontrollers

FREESCALE

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**AN2221**

MI Bus Software Driver for the MC9S12DP256

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**AN2318**

Using the I2C Bus with HCS12 Microcontrollers

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**AN2221SW**

Executable to set up software files for AN2221

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AN2250

Audio Reproduction on HCS12 Microcontrollers

FREESCALE

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**Brochure**

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>BR1881</u> HCS12 Family of Microcontrollers	FREESCALE	pdf	102	0	10/05/2001	
<u>FLYRHCS12FAM</u> The HCS12 Family of Microcontrollers	FREESCALE	pdf	35	1	4/04/2002	

Data Sheets

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>9S12B128DGV1</u> 9S12B128 Device Guide	FREESCALE	pdf	2002	11	9/13/2004	
<u>9S12B128 ZIP</u> MC9S12B128 Users Guide, zip format	FREESCALE	zip	5330	12	11/16/2004	-
<u>HCS12BFAMILYPP</u> HCS12 B-Family Product Brief	FREESCALE	pdf	322	2.7	3/22/2004	
<u>HCS12DFAMILYPP</u> HCS12 D-Family Product Proposal	FREESCALE	pdf	373	6.1	10/23/2002	-
<u>READ-ME_HCS12</u> READ-ME_HCS12 -- HCS12 Document Methodology	FREESCALE	pdf	224	0.2	7/09/2003	-

Engineering Bulletin

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>EB388</u> Using the HCS12 D family as a development platform for the HCS12 B family	FREESCALE	pdf	611	3	7/01/2003	
<u>EB614</u> SCI Interrupt Errata Workaround for HCS12 Family Devices	FREESCALE	pdf	261	1	2/12/2003	
<u>EB386</u> HCS12 D-Family Compatibility	FREESCALE	pdf	575	3	7/05/2002	

Product Change Notices

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>PCN10742</u> KLM PACKING CHANGE FOR TRAY DEVICES	FREESCALE	htm	38	0	3/28/2005	-
<u>PCN10363</u> MC QUAL OF MC9S12B128 (STURGEON)	FREESCALE	htm	21	0	10/07/2004	-
<u>PCN10323</u> TRAY MATERIAL CHANGE FOR LQFP 2020 1.4.	FREESCALE	htm	105	0	9/29/2004	-
<u>PCN8886</u> REDESIGN OF NH1414 2.2 14X14 MQFP TRAY	FREESCALE	htm	36	0	5/19/2003	-
<u>PCN8845</u> TSPG 8/16BIT FLASH HCS12 LRAE	FREESCALE	htm	87	0	5/02/2003	-

Reference Manual

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>S12CPUV2</u> HCS12 CPU V2.0 Reference Manual	FREESCALE	pdf	5885	0	7/01/2003	

Selector Guide

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>SG1006</u> SG1006 Microcontrollers Selector Guide	FREESCALE	pdf	560	0	3/25/2005	

Training Reference Material

ID and Description	Vendor ID	Format	Size K	Rev #	Date Last Modified	Order Availability
<u>HCS12TR</u> HCS12 Hardware and Software Course	FREESCALE	htm	8	1.0	11/09/2001	-

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Hardware Tools

Adapters

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>SPECIAL ADAPTERS</u>					
Find special adapters for Freescale microcontrollers	FREESCALE	htm	2	0	-

Emulators/Probes/Wigglers

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>BDI1000/BDI2000</u>					
BDI1000/BDI2000 Abatron develops and produces high-quality, high-speed BDM and JTAG Debug Tools (BDI Family) for software development environments from leading vendors.	<u>ABATRON</u>	-	-	-	-
<u>EMUL12--PC</u>					
HC12 & HCS12 Emulator BDM and Full-Featured Emulators for all HCS12 and HC12 derivatives. 5V and 3.3V operation to above 25MHz bus speed. Extensive support for debug through Resets, Power-Downs, Limp-Home and full PLL use. Unlimited number of breakpoints.	<u>NOHAU</u>	-	-	-	-
<u>IC30000</u>					
iC3000 ActiveEmulator The compact iC3000 with its "iCARD" slot can be used as either an affordable hardware debugger, or the interface module for full in-circuit emulators or high-end on-chip trace modules. USB, serial and Ethernet interfaces are supported.	<u>ISYS</u>	-	-	-	-
<u>USBMULTILINKBDM</u>					
USB HCS08/HCS12 BDM Multilink - In-Circuit Debugger/ Programmer	FREESCALE	-	-	-	 

Evaluation/Development Boards and Systems

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>HCS12TB/STD</u>					
HCS12 T-Board HCS12 Evaluation and Training Board. Rich set of peripheral functions. Header layout compatible to Motorola Barracuda EVB (DP256). Can be used as BDM12-Debugger in conjunction with D-Bug12 software. 256KB RAM-Add-On optionally available.	<u>ELEKTRO</u>	-	-	-	-

Software

Application Software

Application Development Framework

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>MC9S12B64EQU</u>					
Equate File for MC9S12B64	FREESCALE	inc	72	1.2	-

Device Drivers

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>HCS12SGF25NVMSSD</u>					
HCS12 SGF NVM Standard Software Driver Flash program/erase software driver for embedded applications and BDM programming tools.	FREESCALE	zip	2017	3.1.0	-
<u>HIS-DRIVER HCS12SGF25NVM</u>					
HIS-compatible Driver for 0.25um SGF Flash in HCS12	FREESCALE	zip	1092	1.0	-

Operating Systems

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>CMX00205A</u>					
CMXKAware CMXKAware is an Add-On Option that provides debugger kernel awareness for users of the CMX-RTX RTOS. CMXKAware displays CMX-RTX's internal data structures in a convenient series of lists in the RTOS window of ORTI compliant debuggers.	<u>CMX</u>	-	-	-	-

Programmers

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>PROG12Z S AUTO</u>					
PROG12Z Programmer for Internal and External Flash/EEPROM using BDM. Both a GUI and a Command Line version for production programming are provided.	<u>PEMICRO</u>	-	-	-	-

Software Tools**Compilers**

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
 <u>CWS-H12-DXP-CX</u> CodeWarrior for HC12 Data Expert	<u>METROWERKS</u>	-	-	-	
 <u>CWS H12 X00CC CX</u> CodeWarrior Development Studio for HC(S)12X with XGATE, Compiler Only	<u>METROWERKS</u>	-	-	-	-
<u>CX6812</u> Cosmic C Cross Compiler for HC12/HCS12 is an optimizing ANSI C compiler and integrated development environment that provides the convenience and portability of the C language along with the low level control necessary for embedded real-time applications.	<u>COSMIC</u>	-	-	-	-

Debuggers

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>DPROBES12</u> DProbeS12	<u>HITEX</u>	-	-	-	-
<u>HITOP</u> HiTOP	<u>HITEX</u>	-	-	-	-
<u>LA-7717</u> BDM-MCS12 BDM Debugger for MCS12 family The debugger for Motorola 68HC12 family allows fast access to the BDM interface of the chip. The systems supports C and C++ from different compiler manufactures. Flash programming is supported as well.	<u>LAUBACH</u>	-	-	-	-
<u>ZAP 6812 ICD</u> ZAP 6812 BDM Debugger is a full featured real-time debugger and Flash programmer interface to Motorola's on- chip BDM. ZAP uses P&E's BDM Multilink cable via a PC parallel or USB port to connect to virtually any target system.	<u>COSMIC</u>	-	-	-	-
<u>ZAP 6812 SIM</u> ZAP HC12/HCS12 Simulator Debugger integrates a C and assembly source debugger with an instruction simulator to provide a standalone debugging/execution environment on the host. Features include: interrupt simulation, timers, code coverage & performance analysis.	<u>COSMIC</u>	-	-	-	-

IDE (Integrated Development Environment)

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
 <u>CWS-H12-PROED-CX</u> CodeWarrior Development Studio for HC(S)12, Professional Edition	<u>METROWERKS</u>	-	-	-	
 <u>CWS-H12-STDED-CX</u> CodeWarrior Development Studio for HC(S)12, Standard Edition	<u>METROWERKS</u>	-	-	-	
<u>FREEMASTER</u> Application Development Tool	FREESCALE	-	-	-	-

Initialization/Boot Code Generation

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
<u>HCS12PLLCSW</u> HCS12 PLL Component Calculator Utility	FREESCALE	zip	127	0	-

Performance and Testing

ID and Description	Vendor ID	Format	Size K	Rev #	Order Availability
 CWS-HXX-PBLDR-CX CodeWarrior Simulation Extension Peripheral Builder	METROWERKS	-	-	-	
 MWCTST16STD CodeTEST/16 Software Analysis Tools	METROWERKS	-	-	-	-

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Orderable Parts Information

Part Number	Package Description	Tape and Reel	Application/ Qualification Tier	Compliance		Status	Budgetary Price QTY 1000+ (\$US)	Info	Order
				Pb-Free	RoHS				
MC9S12B64CFUE	QFP 80 14*14*2.2P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
MC9S12B64CPVE	LQFP 112 20*20*1.4P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
MC9S12B64MFUE	QFP 80 14*14*2.2P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
MC9S12B64MPVE	LQFP 112 20*20*1.4P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
MC9S12B64VFUE	QFP 80 14*14*2.2P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
MC9S12B64VPVE	LQFP 112 20*20*1.4P0.65	No	COMMERCIAL, INDUSTRIAL, AUTOMOTIVE			Available	-	more	-
PC9S12B64CFU	QFP 80 14*14*2.2P0.65	No	-	No	No	Available	-	more	-
PC9S12B64CPV	LQFP 112 20*20*1.4P0.65	No	-	TBD	TBD	Available	-	more	-
PC9S12B64MFU	QFP 80 14*14*2.2P0.65	No	-	No	No	Available	-	more	-
PC9S12B64MPV	LQFP 112 20*20*1.4P0.65	No	-	TBD	TBD	Available	-	more	-
PC9S12B64VFU	QFP 80 14*14*2.2P0.65	No	-	No	No	Available	-	more	-
PC9S12B64VPV	LQFP 112 20*20*1.4P0.65	No	-	TBD	TBD	Available	-	more	-

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 [distributors' inventory](#)

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