

Software and Development Tools

Quarter 2, 2006
SG1011Q22006 Rev 0

About This Revision—Q2/2006

When new products are introduced, a summary of the new products will be provided in this section. However, the New Product section will only appear on this page when new products have been introduced during the quarter.

In addition, a change bar appears in the left margin of every page in this selector guide that contains new or revised information.

If products are discontinued, a What's EOL? page is included at the end of this guide. The What's EOL? page lists end-of-life products along with their respective last order date, last ship date, and suggested possible replacement information.

NEW PRODUCT

Product	Page Number	Description
CWS-MPC-5XX-CX	SG1011-3	CodeWarrior™ Development Studio for MPC5xx, Node-locked
CWS-MPC-5500B-CX	SG1011-3	CodeWarrior Development Studio for MPC5xx, Build only tools, Node-locked license
CWS-STC-WIN-CX	SG1011-4	CodeWarrior Software Development Tools for StarCore™
CWS-STC-SOL-CX	SG1011-4	CodeWarrior Software Development Tools for StarCore
CWX-STC-711FL-CX	SG1011-4	CodeWarrior Software Development Tools for StarCore
PQ2FADS-ZU	SG1011-6	FADS for the entire PowerQUICC™ II family (480TBGA)
PQFADS-VR	SG1011-6	FADS for the entire PowerQUICC II family (480TBGA)
MPC8272ADS	SG1011-6	FADS for the PQ27e family
MPC8349E-MDS	SG1011-6	MPC8349E Modular Development System
CWH-PTP-DPI-HX	SG1011-7	Ethernet Tap Emulator for DPI
CWH-PTP-JTAG-HX	SG1011-7	Ethernet Tap Emulator for DPI, JTAG
CWH-UTP-PPCC-HX	SG1011-7	USB TAP for PPC COP targets
CWH-UTP-PPCD-HX	SG1011-7	USB TAP for PPC DPI targets
CWH-WTP-ONCE-HX	SG1011-7	USB TAP for 568xx

32-BIT EMBEDDED PROCESSORS SOFTWARE TOOLS

68K, ColdFire®, MPC5xx, PowerPC® ISA, StarCore™, and M•CORE™ — CodeWarrior™

Product	Description	Target Support	RTOS Support	Board Support	Host-Target Interface	Host Platforms	Language Support	Compiler Output Formats
CWS-68K	CodeWarrior Software Development Tools for 68K Embedded Systems	MC68SZ328, MC68VZ328	PPSM, RTX, ATI	DragonBall VZ (M68VZ328ADS), DragonBall SZ (M68SZ328ADS)	P&E Microcomputer CPU32 BDM Cable; Serial, Ethernet	Windows 98/2000	C/C++, 68000 Assembly	ELF/DWARF, Freescale Semiconductor S-Record
CWS-ARM-HWBBU-CX	CodeWarrior Development Studio, ARM ISA Edition for Hardware Board Bring-Up	i.MX1, i.MXL, i.MX21	Quadros	i.MX1 (M9328MX1ADS) i.MXL (M9328MXLADS) i.MX1 EBSP (M9328MX1EBSP) i.MX21	Run Control Interface JTAG, ARM Multi-ICE, Abatron BDI2000, Ashling Vitra/Genia/Opella, EPI Majic, Hitex Tanto, Serial, Ethernet	Windows 2000/ XP	C/C++, Assembly	ELF/DWARF2, Freescale Semiconductor S-Record
CWA-ARM-LWAPP-CX	CodeWarrior Development Studio, ARM ISA Edition for Linux Application Development	i.MX1, i.MXL, i.MX1EBSP, i.MX21	Linux	i.MX1 (M9328MX1ADS) i.MXL (M9328MXLADS) i.MX1EBSP (M9328MX1EBSPADS) i.MX21	Serial, Ethernet	Windows 98/2000/ XP	C/C++, Assembly	STABS
CWS-MCF-CX	CodeWarrior Software Development Studio for ColdFire Embedded Systems	MCF5206e, MCF523x, MCF527x, MCF5249, MCF528x, MCF5272, MCF5282, MCF5307, MCF5407, MCF547x, MCF548x	Precise-MQX, Quadros-RTXC, Blunk-Target OS, KADAK-AMX, Micro Digital-SMX, ATI-Nucleus Plus	M5249C3, M5307C3, M5407C3, M5272C3, M5206eC3, M5282EVB, M5271, M5235, M5475, M5785	P&E Microcomputer ColdFire BDM Cable; Abatron BDI 2000	Windows 98/2000/ XP	C/C++, ColdFire Assembly	ELF/DWARF, Freescale Semiconductor S-Record
CWS-MPC-5XX-CX	CodeWarrior Development Studio for MPC5xx, Node-locked	MPC555, MPC56x	Quadros RTX, Embedix SDK, MQX Embedded, ATI Nucleus, OSEKturbo	MPC555PBSLK, MPC564EVB, MPC565EVB	PowerTAP, Abatron BDI 2000, P&E Microcomputer CABLEPPC (BDM only), Macraigor System BDM	Windows 2000/XP	C/C++, Assembly	DWARF1, DWARF2, STABS
CWS-MPC-5500B-CX	CodeWarrior Development Studio for MPC55xx, Build only tools, Node-locked license	MPC55xx	n/a	n/a	n/a	Windows 2000/XP	C/C++, Assembly	DWARF1, DWARF2, STABS
CWS-PPC-CMWFL-CX	CodeWarrior Development Studio, Embedded PowerPC ISA Edition	MPC555, MPC56x, MPC7xx, MPC74xx, MPC8xx, MPC82xx, PPC603, PPC603ei	Quadros RTX, Embedix SDK, Precise MQX, ATI Nucleus	MPC8260, MPC8266, ADS Board, MPC857DSL IAD Board, MPC866/2/59 ADS, PQ27ADS Board, ADS-P, RPX Lite, RPX Classic, Freescale Semiconductor FADS MBX, Sandpoint, Cognet CMA 102, Axiom 555, Freescale Semiconductor ETAS555, Eximer, AMC Eval	CodeTAP, PowerTAP, USB TAP Run Control Interface JTAG and BDM (8xx only), Macraigor Systems COP Raven (for MPC82xx and PPC6xx), Macraigor Systems BDM Raven (for MPC8XX, MPC5xx), Abatron BDI 2000 (5xx, 8xx, B2xx, 74xx), P&E Micro CABLEPPC (BDM only), Serial, Ethernet	Windows 98/2000/ XP	C/C++, EC++, and PowerPC ISA Assembly	ELF/DWARF, Freescale Semiconductor S-Record
CWMCORE	CodeWarrior Software Development Tools for M•CORE	M2xx/3xx family processors	n/a	MMC2001, MMC2075/2080, MMC2107, MMC2103, MMC3401, MMC2114	CodeWarrior EBDI, Serial, Ethernet	Windows 95/98/ 2000	C/C++, Assembly	ELF/DWARF 1.0, Freescale Semiconductor S-Record
CWS-MCF-LLPLT-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Platform Edition, Node-locked license	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	USB TAP, PowerTAP, Abatron BDI 2000, also Application debug using Serial or Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-MCF-LLAPP-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Application Edition, Node-locked license	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Serial, Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-PPC-OSEWR-CX	CodeWarrior Development Studio for PowerPC ISA, OSE Platform Run Mode	n/a	n/a	MPC8560	USB TAP, PowerTAP	Windows 2000/XP	n/a	n/a
CWS-PPC-LINWH-CX	CodeWarrior Development Studio for PowerPC ISA, Embedded Linux Edition	n/a	Linux	n/a	USB TAP, PowerTAP	Windows 2000/XP	n/a	n/a

32-BIT EMBEDDED PROCESSORS

32-BIT EMBEDDED PROCESSORS (continued) SOFTWARE TOOLS (continued)

68K, ColdFire®, MPC5xx, PowerPC® ISA, StarCore™, and M•CORE™ — CodeWarrior™ (continued)

Product	Description	Target Support	RTOS Support	Board Support	Host-Target Interface	Host Platforms	Language Support	Compiler Output Formats
CWS-PPC-LLPLT-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Platform Edition, Node-locked license	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	USB TAP, PowerTAP, Abatron BDI 2000, also Application debug using Serial or Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-PPC-LLAPP-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Application Edition, Node-locked license	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Serial, Ethernet, PowerTAP, USB TAP	Linux	C/C++, Assembly	GNU compiler output
CWS-PPC-OSEWF-CX	CodeWarrior Development Studio for PowerPC ISA, OSE Platform Freeze Mode	n/a	n/a	MPC8560	USB TAP, PowerTAP	Windows 2000/XP	n/a	n/a
CWS-MPC-5500S-CX	CodeWarrior Development Studio for MPC5500	n/a	n/a	MPC8560	PowerTAP, P & E	Windows 2000/XP	n/a	n/a
CWS-MPC-5XX-CX	CodeWarrior Development Studio for MPC5XX	MPC500 Family	n/a	n/a	n/a	Windows 2000/XP	n/a	n/a
CWS-STC-WIN-CX	CodeWarrior Software Development Tools for StarCore™	MSC8101, MSC8102, MSC8103, MSC8122, MSC8126, MSC711X	SmartDSP OS, RTXC, OSE	MSC8101EVM, MSC8101ADS, MSC8102ADS, MSC8102ADS-HOST, MSC8122ADS, MSC8126ADS, MSC711XEVM, MSC711XADS	Ethernet TAP, USB TAP, Macraigor Wiggler	Windows 2000/XP	C/C++	ELF/DWARF
CWS-STC-SOL-CX	CodeWarrior Software Development Tools for StarCore	MSC8101, MSC8102, MSC8103, MSC8122, MSC8126	SmartDSP OS, RTXC, OSE	MSC8101EVM, MSC8101ADS, MSC8102ADS, MSC8102ADS-HOST, MSC8122ADS, MSC8126ADS	Macraigor Wiggler, PCI, HTI	Solaris 2.7, 2.8	C	ELF/DWARF
CWX-STC-711FL-CX	CodeWarrior Software Development Tools for Freescale	MSC7110, MSC7112, MSC7113, MSC7115, MSC7116, MSC7118, MSC7119	SmartDSP OS	MSC711XEVM/T, MSC711XADS	Ethernet TAP, USB TAP, Macraigor Wiggler	Windows 2000/XP	C/C++	ELF/DWARF

Other Software

Company	Product Name	Product Type
Bytecodes	Embedded Bytecode Interpreter	Optimized Java Virtual Machines
Counterpoint Systems Foundry	IrLite Development Kit	Infrared communications SDK
Precise Software Technologies	Various	Embedded I/O components
Grammar Engine	PromICE	Firmware development
Inverness Systems	ATIC	ATM protocols and applications
Micro APL	PortAsm	Porting tools that implement the PowerPC architecture ^{Note}
Pacific Softworks	Fusion	Internet protocols for Embedded Solutions
Sun Consumer Electronics	Internet Software Solution	Embedded Internet software
Total Impact	Total PowerSMPPCI	Multiprocessing application accelerator
US Software	USNET	Real-time embedded TCP/IP
Wind River Systems	SystemsWind	ViewSystem visualizer for embedded software

Note: Check with tool vendor for specific derivative support.

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32-BIT EMBEDDED PROCESSORS (continued)

HARDWARE TOOLS

CodeWarrior™ Hardware Tools

Product	Description	Target Board	Power Supply	PDF Schematic	Documentation	Interface Board/Wiggler	RTOS Support
M9328MX1ADS	i.MX1 Development Board	•	•	•	•		•
M9328MX1EBSP	i.MX1 Enhanced Development Board	•	•	•	•		•
M9328MXLADS	i.MXL Development Board	•	•	•	•		•
MPC823FADS	MPC823 FADS Board	•	•	•	•	•	•
MPC850SRFADS	MPC850 FADS Board	•	•	•	•	•	•
MPC8260ADS-PQ2	MPC8260 ADS Board	•	•	•	•	•	•
MPC860FADS	MPC860 FADS Board	•	•	•	•	•	•
MPC860TFADS	MPC860 TFADS Board	•	•	•	•	•	•
MPC862ADS	MPC862 ADS Board	•	•	•	•		
MPC862ADS-KITS	MPC862 ADS Board with Debugger and Host Software	•	•	•	•	•	•
MMCEVB1200PV	MMC2001 Low Cost Evaluation	•	•	•	•		
MMCEVB1200PV-A	MMC2001 Low Cost Evaluation Academic	•	•	•	•		
MMCCMB1200	MMC2001 Development Platform	•	•	•	•		
KITEVSMMC1200	MMC2001 High Performance System	•	•	•	•	•	
MMCEVB2107	MMC2107 Low Cost Evaluation	•	•	•	•		
MMCEVB2114	MMC2113/2114 Evaluation Board	•	•	•	•		•
MMCCMB2107	MMC2107 Development Platform	•	•	•	•		
MMCCMB2114	MMC2113/2115 Development Kit	•	•	•	•		•
KITEVSMMC2107	MMC2107 High Performance Kit	•	•	•	•	•	
KITEVSMMC2107	MMC2107 Complete Development Kit	•	•	•	•		
M5206EC3	MCF5206e Development Kit	•	•	•	•	•	•
M5307C3	MCF5307 Development Kit	•	•	•	•	•	•
M5407C3	MCF5407 Development Kit	•	•	•	•	•	•
M5272C3	MCF5272 Development Kit	•	•	•	•	•	•
M5249C3	MCF5249 Development Kit	•	•	•	•	•	•
MPC564EVB	MPC564 Evaluation Board	•	•	•	•	•	•
MPC566EVB	MPC566 Evaluation Board	•	•	•	•	•	•
MPC862ADS	MPC862 ADS Board	•	•	•	•		
MPC862ADS-KITS	MPC862 ADS Board with Debugger and Host Software	•	•	•	•	•	•
M5282EVB	MCF5282 Evaluation Board	•	•	•	•	•	•
M5475EVB	MCF547x Evaluation Board	•	•	•	•	•	•
M5485EVB	MCF548x Evaluation Board	•	•	•	•	•	•
M5475LITE	MCF547x Low Cost Board	•	•	•	•	•	•
M5485LITE	MCF548x Low Cost Board	•	•	•	•	•	•
M5235BCC	MCF523x Low Cost Board	•	•	•	•		•
M5235BCCKIT	MCF523x Low Cost Kit	•	•	•	•	•	•

• = Available

32-BIT EMBEDDED PROCESSORS

32-BIT EMBEDDED PROCESSORS (continued) HARDWARE TOOLS (continued) CodeWarrior™ Hardware Tools (continued)

Product	Description	Target Board	Power Supply	PDF Schematic	Documentation	Interface Board/Wiggler	RTOS Support
M523xEVB	MCF523x Evaluation Board	•	•	•	•	•	•
M5282LITE	MCF5282 Low Cost Board	•		•	•		•
M5282LITEKIT	MCF5282 Low Cost Kit	•	•	•	•	•	•
MPC555CME	MPC555 Evaluation Kit	•	•	•	•	•	•
MPC564EVB66	MPC564 66 MHz Evaluation Board	•	•	•	•	•	•
PQ2FADS-ZU	FADS for the entire PowerQUICC™ II family (480TBGA)	•		•	•		•
PQFADS-VR	FADS for the entire PowerQUICC II family (480TBGA)	•		•	•		•
MPC8272ADS	FADS for the PQ27e family	•		•	•		•
MPC8349E-MDS	MPC8349E Modular Development System	•		•	•	•	•
CWH-PPC-8248N-VX	MPC8248 Evaluation System	•		•	•	•	•
CWH-PPC-8250N-VX	MPC8250 Evaluation System	•	•	•	•	•	•
CWH-PPC-8280N-VX	MPC8280 Evaluation System	•	•	•	•	•	•
CWH-PPC-8343N-VX	MPC8343 Evaluation System						
CWH-PPC-8540N-VX	MPC8540 Evaluation System	•	•	•	•	•	•
CWH-PPC-866XN-VX	MPC866 Evaluation System	•	•	•	•	•	•
CWH-PPC-875XN-VX	MPC875 Evaluation System	•	•	•	•	•	•
CWH-PPC-852XN-VX	MPC852 Evaluation System	•	•	•	•	•	•

• = Available

32-BIT EMBEDDED PROCESSORS DEVELOPMENT SYSTEMS CodeWarrior Development Systems

Product	Description	RTOS Support	Debug Interface	Serial Cable	CD ROM	User Manuals	Power Supply	Host Platforms
CWH-ARM-MXL00-DX	CodeWarrior Development System for i.MXL	•	•	•	•	•	•	Windows 98/2000
CWH-MGT-MQXFL-DX	CodeWarrior Development System for LITE5200 Flashed with MQX	•	•	•	•	•	•	Windows 98/2000/XP
CWH-MPC-555-VX	CodeWarrior Development System for MPC555CME, includes P & E BDM	•	•	•	•	•	•	Windows 98/2000/XP
CWH-MPC-566-VX	CodeWarrior Development System for MPC566EVB, includes P & E BDM	•	•	•	•	•	•	Windows 98/2000/XP
CWH-PPC-8248N-VX	CodeWarrior Development System for MPC8248	•	•	•	•	•	•	Windows 98/2000/XP
CWH-PPC-852XN-VX	CodeWarrior Development System for MPC852	•	•	•	•	•	•	Windows 98/2000/XP
CWH-PPC-875XN-VX	CodeWarrior Development System for MPC875	•	•	•	•	•	•	Windows 98/2000/XP
CWH-PPC-8540N-VX	CodeWarrior Development System for MPC8540	•	•	•	•	•	•	Windows 98/2000/XP

• = Available

¹ 12-month support plan available

² Contact CodeWarrior for more information

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32-BIT EMBEDDED PROCESSORS (continued)
CABLES AND HOST-TARGET INTERFACES
CodeWarrior™ Cables and Host-Target Interfaces

Product/Part Number	Description	Target Support	Connection Device	Power Supply
CWH-PTP-JTAG-HX	PowerTAP Pro for JTAG, Hardware Only	•	•	•
CWH-PTP-DPI-HX	PowerTAP Pro for DPI, Hardware Only	•	•	•
CWH-PTP-NEXUS-HX	PowerTAP Pro for OnCE Connections (StarCore™, 56800/E)	•	•	•
CWH-PPC-BDI10-YX	Abatron BDI1000 with software BDI CodeWarrior for PowerPC® ISA targets	•	•	•
CWH-PPC-BDI20-YX	Abatron BDI2000 with software BDI CodeWarrior for PowerPC ISA targets	•	•	•
CWH-MPC-PEBDM-YX	P & E MPC5xx BDM Interface Cable		•	
CWH-PTP-DPI-HX	Ethernet Tap Emulator for DPI	•	•	•
CWH-PTP-JTAG-HX	Ethernet Tap Emulator for JTAG	•	•	•
CWH-UTP-PPCC-HX	USB TAP for PPC COP targets	•	•	•
CWH-UTP-PPCD-HX	USB TAP for PPC DPI targets	•	•	•
CWH-WTP-ONCE-HX	USB TAP for 568xx	•	•	•

• = Available

32-BIT EMBEDDED PROCESSORS

32-BIT EMBEDDED PROCESSORS (continued) THIRD PARTY TOOLS

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire®

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Assemblers						
Avocet Systems, Inc.	•	•				www.avocetsystems.com
Green Hills Software	•	•	•	•	•	www.ghs.com
CodeWarrior™		•	•	•	•	www.freescale.com/codewarrior
P&E Microcomputer Systems		•			•	www.pemicro.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
BDM Support Tools						
Cosmic Software		•				www.cosmic-software.com
Wind River Systems		•	•	•	•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•	•	•		www.isystem.com
Lauterbach		•	•	•	•	www.lauterbach.com
Macraigor Systems LLC		•	•			www.macraigor.com
CodeWarrior™				•	•	www.freescale.com/codewarrior
P&E Microcomputers Systems					•	www.pemicro.com
TASKING						www.tasking.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Code Coverage Tools						
Ashling Microsystems			•			www.ashling.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
Hitex Development Tools		•				www.hitex.com
iSystem		•	•			www.isystem.com
TASKING		•		•		www.tasking.com
CodeTEST	•	•	•	•	•	www.freescale.com/codewarrior

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32-BIT EMBEDDED PROCESSORS (continued)
THIRD PARTY TOOLS (continued)

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire® (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Compilers						
Accelerated Technology Inc.		•	•		•	www.acceleratedtechnology.com
Byte Craft Limited				•		www.bytecraft.com
TASKING		•		•		www.tasking.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
P&E Microcomputers Systems		•			•	www.pemicro.com
GNU	•				•	www.gnu.org
CodeWarrior™		•	•	•	•	www.freescale.com/codewarrior
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Debuggers						
Ashling Microsystems		•	•			www.ashling.com
Accelerated Technology Inc.		•	•	•	•	www.acceleratedtechnology.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
iSystem			•	•		www.isystem.com
Lauterbach	•		•	•	•	www.lauterbach.com
P&E Microcomputers Systems					•	www.pemicro.com
CodeWarrior		•	•	•	•	www.freescale.com/codewarrior
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Evaluation Boards						
Axiom Manufacturing			•	•		www.axman.com
Arrow		•	•	•	•	www.arrow.com
Avnet		•	•	•	•	www.avnet.com
Future		•	•	•	•	www.future.com
Matrix Design Inc.					•	www.cadreiii.com
CodeWarrior		•	•	•	•	www.freescale.com/codewarrior
Phytec			•			www.phytec.com

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32-BIT EMBEDDED PROCESSORS

32-BIT EMBEDDED PROCESSORS (continued)

THIRD PARTY TOOLS (continued)

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire® (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Logic Analyzers						
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•				www.isystem.com
Tektronix		•	•	•		www.tek.com/measurement/logic_analyzers
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
In-Circuit Emulators or Hardware Debug Interface						
Ashling Microsystems		•	•			www.ashling.com
Wind River Systems		•	•		•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
iSystem		•	•			www.isystem.com
Lauterbach		•	•		•	www.lauterbach.com
Microtek International Inc.		•			•	www.microtek.com.tw/mice
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Performance Analysis Tools						
CodeTEST	•	•	•	•	•	www.freescale.com/codewarrior
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•		•	•	•	www.ghs.com
iSystem		•	•			www.isystem.com

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32-BIT EMBEDDED PROCESSORS (continued)

THIRD PARTY TOOLS (continued)

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire® (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Real-Time Operating Systems						
Accelerated Technology Inc.	•	•	•	•	•	www.atinucleus.com
Quadros Systems		•	•	•	•	www.freescale.com/codewarrior
ETAS		•	•			www.etasinc.com
Green Hills Software	•	•	•	•	•	www.ghs.com
ARC International	•	•	•	•	•	www.freescale.com/codewarrior
Snap Gear					•	www.snapgear.com
TASKING		•				www.tasking.com
Wind River Systems	•				•	www.wrs.com
Blunk Microsystems	•	•	•	•	•	www.blunkmicro.com
Kadak	•	•	•		•	www.kadak.com
Micro Digital			•		•	www.smxinfo.com
ENE A			•			www.ose.com
CodeWarrior™			•			www.freescale.com/codewarrior
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Simulation Tools						
Wind River Systems	•	•		•	•	www.wrs.com
Green Hills Software	•		•	•	•	www.ghs.com
TASKING		•		•		www.tasking.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Initialization Tools						
MicroAPL			•		•	www.microapl.co.uk

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ANALOG**ANALOG
DEVELOPMENT SYSTEMS****Development Tools — Communications Application-Specific Standard Products**

Product	Description	Key Product	Status	Documentation
MC14LC5480EVK	PCM Codec-Filter Evaluation Kit	MC14LC5480, MC145481, MC145482, MC145483, MC145484	Available	MC14LC5480EVK
MC145572EVK	ISDN U-Interface Transceiver Evaluation Kit	MC145572	Available	Note
MC145574EVK	ISDN S/T-Interface Transceiver Evaluation Kit	MC145574	Available	Note
MC145576EVK	ISDN Single-Chip NT1 Evaluation Kit	MC145576	Available	Note
MC145576DRV	Driving Board for the MC145576EVK for Smart NT1 Evaluation	MC145576	Available	Note
Hipster™	Hipster Reference Design for SOHO Router	MC145572, MC145574, MPC850DH	Available	Note

Note: For documentation, go to www.freescale.com, and click on Design Tools.

DIGITAL SIGNAL CONTROLLERS

56800/56800E/56F8300/56F8100/56F8000 Development Tools — Software

Product	Description	Status
DSPOSRTOS	DSP OS Real-Time Operating System (RTOS)	Available
DSPOSNET	DSP OS Network Software	Available
RTXC	RTXC Real-Time Operating System (RTOS)	Available
RTXCNET	RTXC Networking Protocol Suite	Available
DSP56858SFP	DSP56858 with Feature Phone Application	Available
CWS-568X-SE	CodeWarrior™ Development Studio for 56800/E with Processor Expert (limited to 16 KB of program RAM)	Available
CWS-568-C32K-CX	CodeWarrior Development Studio for 56800/E with Processor Expert (limited to 64 KB of program RAM)	Available
CWS-568-C64K-CX	CodeWarrior Development Studio for 56800/E with Processor Expert (limited to 128 KB of program RAM)	Available
CWS-568-CX	CodeWarrior Development Studio for 56800/E with Processor Expert	Available
CWH-UTP-ONCE-HX	CodeWarrior USB TAP for 56800/E Digital Signal Controllers	Available

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DIGITAL SIGNAL CONTROLLERS (continued)

56800 Development Tools — Hardware

Product	Description	Status
DSP56800TDC1	Daughter Card for DSP56F826EVM and DSP56F827EVM	Available
DSP56F800DEMO	56F800 Demonstration Kit with US power supply	Available
DSP56F800DEMO-E	56F800 Demonstration Kit with universal power supply	Available
DSP56F801EVM	Evaluation kit for the DSP56F801 and DSP56F802 processor (CodeWarrior™)	Available
DSP56F803EVM	Evaluation kit for the DSP56F803 processor (CodeWarrior)	Available
DSP56F805EVM	Evaluation kit for the DSP56F805 processor (CodeWarrior)	Available
DSP56F807EVM	Evaluation kit for the DSP56F807 processor (CodeWarrior)	Available
DSP56F826EVM	Evaluation kit for the DSP56F826 processor (CodeWarrior)	Available
DSP56F827EVM	Evaluation kit for the DSP56F827 processor	Available
DSPCOMMANDPCI	Emulation support for DSP56F80X processors. Requires PCI slot (CodeWarrior)	Consult Web or CodeWarrior for availability of CodeWarrior software support
DSPCOMMPARALLEL	Emulation support for DSP56F80X processors. Requires parallel port (CodeWarrior)	Available
DSOVRTOS	DSP OS Real-Time Operating System (RTOS)	Available
ECCTR908MR32	MC68HC908MR32 Control Board	Available
ECINLHIVSR	Three-Phase Switched Reluctance High-Voltage Power Stage	Available
ECLOVACBLDC	Three-Phase BLDC Low-Voltage Power Stage	Available
ECLOVSRR	Three-Phase Switched Reluctance Low-Voltage Power Stage	Available
ECMTREVAL	Evaluation Motor Board	Available
ECOPT	Optoisolation Board	Available
ECOPTHVACBLDC	Three-Phase AC BLDC High-Voltage Power Stage	Available
ECOPTINL	In-Line Optoisolation Box	Available

56850 Development Tools — Hardware

Product	Description	Status
DSP56852EVM	Evaluation Kit for DSP56852 Processor	Available
DSPCOMMPARALLEL	Parallel Port Command Converter for DSP	Available
DSPCOMMANDPCI	PCI Command Converter for DSP	Available
DSP56858EVM	Evaluation Kit for DSP56858 Embedded Systems	Available
DSP56800TDC1	Daughter Card for DSP56852EVM and DSP56858EVM	Available

DIGITAL SIGNAL CONTROLLERS (continued)

56F8000 Development Tools — Hardware

Product	Description	Status
APMOTOR56F8000	56F8000 Motor Control Kit	Available
CPA56F8013	CPA56F8013 Socket Board for 56F8013 Flash Programming	Available
CPA56F8014	CPA56F8014 Socket Board for 56F8013 Flash Programming	Available
DEMO56F8013	Demonstration Board for 56F8013 with US Flash Programming	Available
DEMO56F8014	Demonstration Board for 56F8014 with US Power Supply	Available
DEMO56F8013-E	Demonstration Board for 56F8013 with Universal Power Supply	Available
DEMO56F8014-E	Demonstration Board for 56F8014 with Universal Power Supply	Available

56F8300/56F8100 Development Tools — Hardware

Product	Description	Status
MC56F8300DSK	56F8300 Demonstration Kit with US power supply	Available
MC56F8323EVM	Evaluation kit for the 56F8322 and 56F8323 processor (CodeWarrior™)	Available
MC56F8367EVM	Evaluation kit for 56F8345-56F8367 processors (CodeWarrior)	Available
DSPCOMMANDPCI	Emulation support for 56F8300 processors. Requires PCI slot (CodeWarrior)	Available
DSPCOMMPARALLEL	Emulation support for 56F8300 processors. Requires parallel port (CodeWarrior)	Available
DSPOSRTOS	DSP OS Real-Time Operating System (RTOS)	Available
ECCTR908MR32	MC68HC908MR32 Control Board	Available
ECINLHIVSR	Three-Phase Switched Reluctance High-Voltage Power Stage	Available
ECLOVACBLDC	Three-Phase BLDC Low-Voltage Power Stage	Available
ECLOVSR	Three-Phase Switched Reluctance Low-Voltage Power Stage	Available
ECMTREVAL	Evaluation Motor Board	Available
ECOPT	Optoisolation Board	Available
ECOPTHVACBLDC	Three-Phase AC BLDC High-Voltage Power Stage	Available
ECOPTINL	In-Line Optoisolation Box	Available

DIGITAL SIGNAL CONTROLLERS (continued)
DSP56300 and MSC8100 Development Tools — Hardware

Product	Description	Status
DSPTOOLSCD	DSP56300 Family Simulator/Assembler/Librarian for IBM PC, SUN-4, and Hewlett-Packard Series 700. DSPTOOLSCD is only available as a download from CodeWarrior™ at www.codewarrior.com/embedded/suite56 .	Available
CDDSP56300	DSP56300 Training CD	Available
DSP56301ADM	DSP56301 Applications Development Module	Available
DSP56303EVM	DSP56303 Evaluation Module	Available
DSP56L307EVM	DSP56L307 Evaluation Module	Available
DSP56309EVM	DSP56309 Evaluation Module	Available
DSP56311EVM	DSP56311 Evaluation Module	Available
DSP56321EVM	DSP56321 Evaluation Module	Available
DSPAUDIOEVMMB1	DSP5636x Evaluation Module (Daughter Card listed separately)	Available
DSPB362DB1	DSPB56362 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPF362DB1	DSPF56362 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPB364DB1	DSPB56364 Evaluation Module Daughter Card	Available
DSPB366DB1	DSPB56366 Evaluation Module Daughter Card	Available
DSPD366DB1	DSPD56366 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPA367DB1	DSPA56367 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPB367DB1	DSPB56367 Evaluation Module Daughter Card	Available
DSPC367DB1	DSPC56367 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPD367DB1	DSPD56367 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
DSPA371DB1	DSPA56371 Evaluation Module Daughter Card; Dolby and DTS Licensing Required	Available
CWH-STC-8101E-VX	MSC8101 Evaluation Module (CodeWarrior)	Available
CWH-STC-8101A-EX	MSC8101 Application Development System Board (CodeWarrior)	Available
DSPCOMMANDPCI	Command Converter with PCI Host Interface	Available
DSPCOMMPARALLEL	Command Converter with Parallel Port Host Interface	Available
CWH-PTP-NEXUS-HX	PowerTAP for 568xx	Available
CWH-PTP-ONCE-HX	StarCore™	Available
MSC711XEVM	MSC711X Evaluation Module (CodeWarrior)	Available
MSC711XADS	MSC711X Application Development System Board (CodeWarrior)	Available
MSC8122ADS	MSC8122 Application Development System Board (CodeWarrior)	Available
MSC8126ADS	MSC8126 Application Development System Board (CodeWarrior)	Available

DIGITAL SIGNAL CONTROLLERS (continued)

DSP56300 and MSC8100 Development Tools - Software

Tools Description	Partner	Contact
Real-Time Operating System	Eonic Systems Embedded Power Corporation Quadros Systems, Inc. OSE Systems Precise Software Technologies	www.eonics.com www.embeddedpower.com www.quadros.com www.ose.com www.psti.com
Integrated Development Environment	Green Hills Software CodeWarrior™ Signalogic TASKING	www.greenhills.com www.freescale.com/codewarrior www.signalogic.com www.tasking.com
Optimizing Compilers/Assembler/Linker	Green Hills Software CodeWarrior TASKING	www.greenhills.com www.freescale.com/codewarrior www.tasking.com
Debugger	Domain Technologies Green Hills Software CodeWarrior ARC International TASKING	www.domaintec.com www.greenhills.com www.freescale.com/codewarrior www.psti.com www.tasking.com
Simulator	CodeWarrior ARC International TASKING	www.freescale.com/codewarrior www.psti.com www.tasking.com
DSP Algorithm Development	Mathworks Hyperception	www.mathworks.com www.hyperception.com
System Simulation and Verification	Cadence Mentor Graphics Synopsys	www.cadence.com/alta www.mentorgraphics.com www.synopsys.com
Hardware Debug Connections/Analyzers	Corelis/HP Macraigor Systems CodeWarrior Signalogic	www.corelis.com www.macraigor.com www.freescale.com/codewarrior www.signalogic.com
Hardware Development Tools	CDA Systems United Electronic Industries White Electronic Designs	www.cdasy.com www.ueidaq.com www.whiteedc.com
Device Driver Software	Aisys Freescale Semiconductor I/O Driver Library for MSC8101	www.aisysinc.com www.freescale.com

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MICROCONTROLLERS

HC(S)08 DEVELOPMENT SOFTWARE

**CodeWarrior™ Development Studio for HC(S)08
Special Edition**

(Free-of-Charge)

CodeWarrior Development Studio for HC(S)08 Microcontrollers v5.0 is the first product in the Freescale Fast Track suite of tools. It includes built-in features and utilities that improve ease of use, speed and accessibility over previous versions. Using these Fast Track CodeWarrior tools, product developers can get innovative, higher quality products to market faster and more economically.

New in Version 5.0

- **Easy**—A quick start guide eases installation and helps create a first example project. Overview tutorials for introductory users are accessible anytime during a project. Example projects for every supported Freescale microcontroller are available to jump start your design efforts.
- **Fast**—The project wizard can be used to create a working project (Assembly or C) in as few as seven mouse clicks. An assist knowledgebase aids device initialization, enabling users to make smarter design decisions. Users can change target microcontrollers and the debug/Flash programming connection in an open project without having to recreate the project.
- **Accessible**—CodeWarrior Development Studio for HC(S)08 v5.0 is available for download at freescale.com/cw5. To simplify software updates, an updater utility enables Web access to new features and service packs.

Features

- Industry-leading CodeWarrior Integrated Development Environment
- Full-chip simulation and Flash programming with P&E Microcomputer Systems technology
- Assembler, linker, and assembly source level debugger
- Highly optimized ANSI C compiler and C source level debugger
- Device Initialization™ tool from UNIS
- Processor Expert™ rapid application design tool from UNIS
- Fully supports Freescale Semiconductor 68HC08 hardware development tools
 - FSICE, MMDS, MMEVS, ICS, Cyclone, MON08 Multilink for HC08 devices
 - BDM Multilink and serial monitor debugging for HCS08
 - Takes full advantage of innovative on-chip HCS08 debug module

The order number for this product is **CWX-HXX-SE**. (It is a 3 CD set that includes the following: CodeWarrior Development Studio for HC(S)08 Microcontrollers, v5.0; CodeWarrior Development Studio for HC(S)12 Microcontrollers, v3.1; HC(S)08 and HC(S)12 Service Pack CD.)

C Compiler

(MSRP Starting at \$500)

The special edition is a full-featured toolset with a 16K code size limited version of our highly optimized C compiler. You can upgrade to a 32K version, 64K version or unlimited version to support all HC(S)08s. All compiler upgrades have project management for greater than 32 files.

- The order number is **CWS-H08-C32K-CX (32K version)**
- CWS-H08-C64K-CX (64K version)**
- CWS-H08-CC-CX (Unlimited version)**

Standard Edition

(MSRP \$2,394)

The standard edition includes an unrestricted C compiler, project management for greater than 32 files, unlimited data visualization tools to ease debugging, libmaker to create binary libraries, decoder to create a listing from ELF files, and access to Unis' software beans for the Processor Expert design tool.

The order number for this product is **CWS-H08-STDED-CX**.

Professional Edition

(MSRP \$4,794)

The professional edition provides the following additional advanced tools to speed your design to market:

- Embedded C++ for object-oriented programming
- Libmaker to create binary libraries
- Session Record and Play for automated testing
- Decoder to create a listing from ELF files
- Code coverage analysis to isolate unused or badly used portions of code
- Profiler/performance analysis to identify and optimize critical portions of code
- Additional advanced beans for the Processor Expert design tool, including support for complex communication modules
- Bean Wizard to build a software library that can be retargeted to any HC(S)08 or HC(S)12 silicon
- PC-lint Plug-in to use PC-lint with CodeWarrior Development Studio (purchased separately from Gimpel Software)
- OSEK awareness for kernel-aware debugging

The order number for this product is **CWS-H08-PROED-CX**.

Node-locked, dongle and floating licenses are available for C compiler upgrades, Standard Edition and Professional Edition.



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MICROCONTROLLERS (continued)
HC(S)08 DEVELOPMENT SOFTWARE (continued)

Features	Benefit	Special Edition	Standard Edition	Professional Edition
IDE				
Project Wizard	Gets you up and programming fast.	Yes	Yes	Yes
Program Manager Projects Sub Projects	Eliminates confusing and often complex files with visual preference panels.	Up to 32 files No	Unlimited Yes	Unlimited Yes
Build Tools				
Macro Assembler	For specific optimizations only you can provide.	Yes	Yes	Yes
Optimizing Compiler	Reduces code size and maximizes the capabilities of the microcontroller to achieve top performance.	C - 16K	C - Unlimited	C - Unlimited C++ - Unlimited
Libmaker	Allows reuse and maintenance of code through libraries.		Yes	Yes
Debug Tools				
Source-Level Debugger	Speeds debug cycles by viewing the source code as it executes.	ASM - Unlimited C - 16K	ASM - Unlimited C - Unlimited	ASM - Unlimited C - Unlimited C++ - Unlimited
Flash Programming	Fully integrated flash programming improves the build-debug cycle because it automates your downloads.	Yes	Yes	Yes
Simulator	Reduces costs and eliminates possible hardware issues during development.	Yes	Yes	Yes
Data Visualization & I/O Stimulation	Let's you see how your program effects peripherals and responds to outside input.	1 component/ 3 elements	Unlimited	Unlimited
Decoder	Allows you to create listings of ELF Files.		Yes	Yes
OSEK awareness	Ready to work with OSEK, for RTOS aware debug capabilities.			Yes
Session Record & Play	Automates repetitive debug cycles during program validation.			Yes
Advanced Tools				
Processor Expert Basic Beans Software Beans Advanced Beans	Abstracts the hardware layer and generates optimized, microcontroller-specific code tailored to your application, so you can concentrate on design.	Yes	Yes Yes	Yes Yes Yes
Bean Wizard	Allows you to create reusable software components, which can easily retargeted to any Freescale Hybrid, HC(S)08 or HC(S)12 microcontroller.			Yes
Profile Analysis & Code Coverage	Gives you visibility into running your program to allow fine tuning and better quality metrics.			Yes
PC-lint Plug-in	Ensured compliance with MISRA and other code quality and style guidelines.			Yes

**MICROCONTROLLERS (continued)
HC08 DEVELOPMENT SYSTEMS**

MON08 Multilink



The MON08 Multilink is an easy to use low-cost development tool for Freescale Semiconductor 68HC08 FLASH MCUs. The MON08 Multilink provides in-circuit emulation, debugging, and programming through the 68HC08's standard MON08 serial debug/breakpoint interface.

Some of the features that help make the MON08 Multilink such a versatile, time-saving tool are:

- Universal development tool for all MON08 68HC08s
- Real-time in-circuit emulation and debug
- Fast in-circuit programming
- Auto-detects baud rate and frequency
- Provides optional overdrive clock to target
- Small unobtrusive size (approximately 3" x 2" x 3/4")
- Supports 2.0 V to 5.5 V 68HC08s
- Automatically cycles power for security checks (up to 125 mA)
- USB interface
- Includes CodeWarrior™ Development Studio for HC(S)08, Special Edition

The order number for this product is **USBMULTILINK08**.

Cyclone Pro Universal Standalone In-Circuit Debugger/Programmer (MSRP \$499)



The Cyclone Pro provides all the capabilities of the BDM Multilink plus USB/Ethernet interfaces, the ability to function as a standalone programmer with push buttons and LEDs to control operation, and support for all MON08 HC08s and BDM HCS08s, HCS12s, and HCS12Xs.

- Supports all HC(S)08s, HC(S)12s, and HC(S)12Xs
- Ethernet, USB, and Serial interfaces
- Fast in-circuit flash programming
- Scripting capability automates programming of test routines, test execution, erase, and final SW programming
- Auto-detects baud rate and frequency of target MU
- Provides optional overdrive clock to target MCU
- Automatically cycles power for security checks (up to 500 mA)
- Supports 1.8 V to 5.5 V

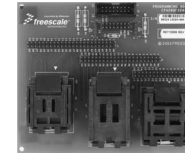
The order number for this product is **M68CYCLONEPRO**.

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(MSRP \$99)

HC(S)08 Programming Adapters

(MSRP Starting at \$99 and up)



The HC(S)08 Programming adapter boards allow a P&E CyclonePro, USBMULTILINK08, USBMULTILINKBDM, or other compatible MON08/BDM programmers to program loose HC(S)08 MCUs. The programming adapter boards feature ZIF sockets, standard MON08/BDM header, and MCU breakout headers.

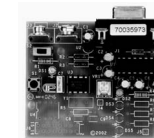
PAS08 PART NUMBERS

- PAS080F324448 supports 32-pin 0.8mm QFP packages, 44-pin 0.8mm QFP packages and 48-pin 0.5mm QFP packages.
- PAS080F80 supports 80-pin 0.5mm QFP and 80-pin 0.65mm QFP packages.
- PAS080F5264 supports 52-pin 0.65mm QFP packages, 64-pin 0.5mm QFP packages and 64-pin 0.8mm QFP packages.
- PAS08W1628T28 supports 7.5mm SOIC packages up to 28 pins, 5.3mm SOIC packages up to 16 pins, and TSSOP packages up to 28 pins.
- PAS08P40B3256 supports DIP packages up to 40 pins and SDIP packages up to 56 pins.
- PAS08FN82448 supports 8-pin DFN packages, 24-pin QFN packages and 48-pin QFN packages.

The order numbers for these products are **PAS080F324448, PAS080F80, PAS080F5264, PAS08W1628T28, PAS08P40B3256, and PAS08FN82448**.

MC68HC908QT4 Demonstration Board

(MSRP \$25)



The 68HC908QT4 demonstration kit contains everything a designer needs to develop and evaluate applications for the Q Family of M68HC08 Microcontrollers.

Features

- Demonstration board with a 4K FLASH 68HC908QT4 8-pin MCU
- Tutorial and demonstration code including A/D, timer, PWM, and keyboard interrupt routines to help you learn the 68HC908QT Family quickly
- Free Special Edition CodeWarrior Development Studio for HC(S)08, allowing you to:
 - Modify demo code or develop new code for the 68HC908QT4 in assembly or C
 - Program and debug code through DB9 serial port and included RS-232 serial cable

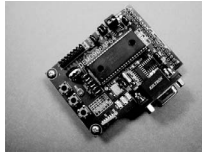
The order number for this product is **M68DEMO908QT4**.

MICROCONTROLLERS (continued)

HC08 DEVELOPMENT SYSTEMS (continued)

MC68HC908AP64 Demonstration Board

(MSRP \$49)



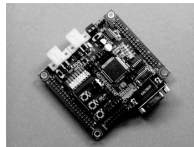
The HC908AP64 demonstration board contains everything a designer needs to develop and evaluate 68HC908AP64 family of applications.

- Freescale 68HC908AP64 MCU in a 42 pin SDIP package
- Low cost SDIP socket
- Regulated +5V power supply
- RS-232 COM Serial Port w/ DB9 Connector
- MON08 circuit for debugging and FLASH programming via the COM Port. No other development hardware required.
- User Components for application development include: Full-duplex IrDA Interface (low speed), Reset push button, 2 input push buttons, light sensor and potentiometer for ATD input, 2 output LEDs
- Learn the 68HC908AP64 MCU quickly by stepping through the provided C demonstration code
- Program and debug code using free CodeWarrior™ Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional USBMULTILINK08 cable

The order number for this product is DEMO908AP64.

MC68HC908GZ60 Demonstration Board

(MSRP \$49.95)



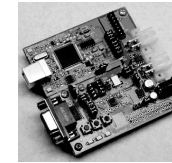
The HC908GZ60 demonstration board contains everything a designer needs to develop and evaluate 68HC908GR/GZ family of applications.

- Freescale 68HC908GZ60 MCU in a 64 LQFP
- Regulated +5V power supply with ON/OFF slide Switch
- RS-232 COM Serial Port w/ DB9 Connector
- MON08 circuit for debugging and FLASH programming via the COM Port. No other development hardware required.
- User Components for application development include: RUN/LOAD slide switch, Reset push button, 2 input push buttons, light sensor and potentiometer for ATD input, 8 output LEDs
- Communication interfaces including single Fault-Tolerant Controller Area Network (CAN) and single Local Interconnect Network (LIN)
- Learn the 68HC908GZ60 MCU quickly by stepping through the provided C demonstration code
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional USBMULTILINK08 cable

The order number for this product is DEMO908GZ60.

MC68HC908QB8 Demonstration Board

(MSRP \$49)



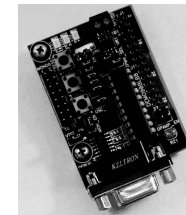
The HC908QB8 demonstration board contains everything a designer needs to develop and evaluate 908QB8 family of applications. This board is breaking the rules for cost effective tools, due to the built-in USB-MON08 interface for FLASH programming and debugging. This board combines two tools into one.

- Freescale HC908QB8 MCU
- Integrated USB-to-MON08 interface for FLASH programming and debugging
- RS-232 COM Serial Port w/ DB9 Connector
- LIN Ports with transceiver (MC33399)
- Internal or External oscillator option
- 8-pin DIP and 16-pin DIP sockets for easier evaluation of 908Qx family devices
- User Components for application development include: Reset push button, 2 input push buttons, light sensor and potentiometer for ATD input, 2 output LEDs
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through the integrated USB-to-MON08 interface

The order number for this product is DEMO908QB8

MC68HC908LB8 Demonstration Board

(MSRP \$49)



The MC68HC908LB4 demonstration board allows a designer to develop and evaluate MC68HC908LB MCU family of applications.

Features

- Freescale MC68HC908LB8 MCU
- Regulated 5V power supply
- 9.8304 MHz oscillator w/Enable Jumper
- MON08 circuit for debugging and FLASH programming via the COM Port. No other development hardware required
- User components for application development include: Reset push button, 2 input push buttons, 2 output LEDs, and potentiometer
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional USBMULTILINK08 cable

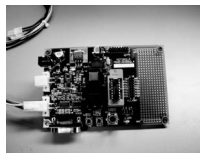
The order number for this product is DEMO908LB8.

MICROCONTROLLERS (continued)**HC08 DEVELOPMENT SYSTEMS (continued)****MC908QC16 Demonstration Board****(MSRP \$75)**

The MC908QC16 demonstration board is a complete development system that allows you to develop and evaluate MC908QC16 family of applications. The DEMO908QC16 board has a built-in USB-to-MON08 interface for FLASH programming and debugging.

- Freescale MC908QC16 MCU
- Integrated USB-to-MON08 interface for FLASH programming and debugging
- RS-232 COM Serial Port w/DB9 Connector
- LIN Ports with transceiver (MC33399)
- Internal or External oscillator option
- User components for application development include: Reset push button, 2 input push buttons, light sensor and potentiometer for ATD input, 4 output LEDs
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through the integrated USB-to-MON08 interface

The order number for this product is **DEM0908QC16**.

MC68HC908QL4 Evaluation Board**(MSRP \$199.10)**

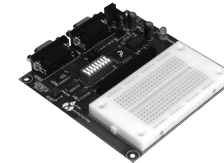
Freescale's advanced MC68HC908QL4 evaluation board, M68EVB908QL4, contains everything a designer needs to develop and evaluate the MC68HC908QL4 family applications. This comprehensive kit includes an evaluation board that utilizes the MC68HC908QL4 on chip slave LIN interface controller (SLIC) module.

The M68EVB908QL4 evaluation board is centered around the MC68HC908QL4 MCU and the enhanced LIN interface. The enhanced LIN interface consists of an MC33661 enhanced LIN transceiver and a 5 V regulator (an LT1121 chip). The board can be programmed either using the RS-232 MON08 interface or a Cyclone/MultiLink tool.

- Freescale 68HC908QL4 MCU
- ZIF sockets for TSSOP or DIP packages
- Regulated 5 V power supply
- LIN Ports with transceiver (MC33399)
- MON08 circuit for debugging and FLASH programming via the COM Port. No other development hardware required.
- User Components for application development include: prototype area, Reset push button, 2 input push buttons, LED, and potentiometer for ATD input
- Program and debug code using free CodeWarrior™ Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional USBMULTILINK08 cable

The order number for this product is **M68EVB908QL4**.

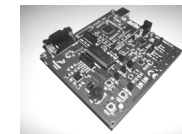
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MC68HC908GP32 Evaluation Board**(MSRP \$168.20)**

Freescale's advanced MC68HC908GP32 evaluation board, M68EVB908GP32, contains everything a designer needs to develop and evaluate the MC68HC908GP32 family applications.

- Freescale MC68HC908GP32 FLASH MCU
- Regulated 5 V power supply
- Mode switch for easy operation change
- DB9 RS232 serial connector
- 9.8304 MHz oscillator with 32 kHz user option
- Universal power supply
- MON08 circuit for debugging and FLASH programming via the COM Port. No other development hardware required.
- User Components for application development include a large prototype area to support circuit designs.
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional USBMULTILINK08 cable.

The order number for this product is **M68EVB908GP32**.

HC908JL16 Demo Board

The 908JL16 demonstration board contains everything a designer needs to develop and evaluate 908JL16 family of applications. This board is breaking the rules for cost effect tools, due to the built-in USB-MON08 interface for FLASH programming and debugging. This board combines two tools into one.

- Freescale HC908JL16 MCU
- Integrated USB-to-MON08 interface for FLASH programming and debugging
- Freescale 3-axis accelerometer sensor: MMA7260Q
- Internal or External oscillator option
- RS-232 COM Serial Port w/ DB9 Connector
- 32-pin SDIP socket for easier evaluation of 908JLx devices
- User Components for application development include: Reset push button, 2 input push buttons, 3-axis accelerometer sensor and potentiometer for ATD input, 2 output LEDs
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through the integrated USB-to-MON08 interface

The order number for this product is **DEM0908JL16**.

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MICROCONTROLLERS (continued)

HC08 DEVELOPMENT SYSTEMS (continued)

Freescale In-circuit Emulator (FSICE) Kits (MSRP starting at \$1495)



The Freescale Semiconductor in-circuit emulator (FSICE) is a full-featured emulator system for developing embedded systems using HC08 microcontrollers. The FSICE system consists of a platform board and an MCU emulator module (EM). Connected to your target system, the emulator replicates the actual target system MCU. The CodeWarrior™ development environment (IDE) interface allows for quick edits and changes to assembly code, which makes design, debug, and real-time evaluation of the target system as efficient as possible. Use this economical system to perform traditional debugging activities such as executing code in run or step mode, setting break points, monitoring or modifying CPU registers, memory and application variables, and creating log or script files to record test results or create test suites.

In addition to incorporating the debug features of the traditional emulators, FSICE adds advanced features such as a built-in USBMULTILINK08 cable for in-circuit Flash programming. Ethernet interface for remote debugging and application development, and real-time bus analyzer with 24 general-purpose logic inputs for capture user-defined bus cycles or events. The bus state analyzer can also help a designer debug the MCU support circuitry, verify nested or complex program flows using the full range of sequenced or logical event triggering and data capture modes, and ensure proper timing by using the custom time tag clock.

Since the FSICE maintains the module approach of the MMDS and MMEVS systems, the FSICE system is designed to support present and future HC08 MCU families. Here is a summary of a complete FSICE system:

- 1) FSICE Base Station: FSICEBASE
- 2) HC08 Emulator Module: M68EML08xxxx, M68EM08xxxx, EML08xxxx, or EM08xxxx
- 3) Target Cables: M68CBLxxxx or EMCBLxxxx
- 4) Target Head Adapters: M68TA08xxxx, M68TB08xxxx, M68TC08xxxx, M68TE08xxxx, or TH08xxxx
- 5) HC(S)08 Programming Adapter: M68CPA08xxxx

To simplify the ordering process, Freescale offers device specific HC08 FSICE Kits. These kits contain everything needed to begin developing for a HC08 MCU family.

FSICE KITS INCLUDE:

- FSICE Base Station (Part Number: FSICEBASE)
- Device-specific emulation module
- Device-specific target cable
- Device-specific target head adapters
- Package-specific Programming Adapters (PAS08xxxx)
- CodeWarrior™ Development Studio for HC(S)08, Special Edition

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Freescale HC08 MCUs	MCU Emulator Module	Part Numbers for FSICE Kits
908AB32	M68EML08AB32	FSICEKITAB32
908AP64, AP64A, AP32, AP32A, AP16, AP16A, AP8	M68EML08AP	FSICEKITAP64
908AS60A, AS60, AS32A, AS32, AZ60A, AZ60, AZ32A, AZ32	M68EM08AS/AZ60A	FSICEKITASAZ
908EY8, 908EY16	M68EML08EY	FSICEKITEY
908GP32, 908GT8, GT16	M68EML08GPGT	FSICEKITGPGT
908GR16, GR32A, GR48A, GR60A, GZ8, GZ16, GZ32, GZ48, GZ60	M68EML08GZ	FSICEKITGRGZ
908GR4, GR8	M68EML08GPGT	FSICEKITGR8
908JB12, JB16, JG16	M68EM08JB16	FSICEKITJB16
908JB8	M68EM08JB8	FSICEKITJB8
908JL3E, JL8, JL16, JK3E, JK1E, JK8	EML08JLJKE	FSICEKITJLJKE
908JW32	M68EM08JW32	FSICEKITJW32
908KX8, KX2, RF2	M68EML08KX	FSICEKITKX
908LB8	M68EML08LB8	FSICEKITLB8
908LJ12, LJ24, LK24	M68EML08LJLK	FSICEKITLJLK
908LT8, LV8	EML08LVLTE	FSICEKITLVLTE
908MR32, MR16	M68EM08MR32	FSICEKITMR32
908MR8, MR4	M68EM08MR8	FSICEKITMR8
908QB8, QB4, QL4, QL3, QL2, QT4, QT2, QT1, QY8, QY4, QY2, QY1	M68ML08QBLY	FSICEKITQBLY
908QC16, QC8	EML08QCBLTY	FSICEKITQC16
908SR12	M68EML08SR12	FSICEKITSR12

MICROCONTROLLERS

MICROCONTROLLERS (continued) HARDWARE TOOLS

68HC08 Emulators, Cables, and Adapters

Product	Platform	Emulation Modules	Packages Supported	Flex Cable	Target Head Adapter	Surface Mount Adapter
68HC908AB32 68HC08AB16A	FSICEBASE	M68EML08AB32	64-pin QFP (FU)	M68CBL05C	M68TC08AB32FU64	M68TQS064SAG1 ¹ M68TQP064SA1 ¹
68HC908AP64/32/16/8 68HC908AP64A/32A/16A	FSICEBASE	M68EML08AP	42-pin SDIP (B) 44-pin QFP (FB) 48-pin QFP (FA)	M68CBL05C M68CBL05B	M68TB08AP64B42 M68TC08AP64FB44 M68TC08AP64FA48	M68TQS044SAG1 M68TQP048SD1
68HC08AS32/60 68HC08AZ32/60 68HC908AS32A/60A 68HC908AZ60A 68HC908AZ32A	FSICEBASE	M68EM08AS/AZ60A	52-pin PLCC (FN) 64-pin QFP (FU)	M68CBL05C M68CBL05C	X68TC08AX48FN52 X68TC08AX48FU64	M68TQS064SAG1 ¹ M68TQP064SA1 ¹
68HC908BD48	FSICEBASE	M68EM08BD48	42-pin SDIP (B) 44-pin QFP (FB) 28-pin DIP (P)	M68CBL05B M68CBL05C M68CBL05B	M68TB08BD48B42 M68TC08BD48FB44 M68TB08BD48P28	M68TQS044SAG1 ¹ M68TQP044SAM01 ¹
68HC908EY16	FSICEBASE	M68EML08EY	32-pin QFP (FA)	M68CBL05C	M68TC08EYFA32	M68TQP032SA1
68HC908GP32 68HC08GP32 68HC908GT16 68HC908GT8	FSICEBASE	M68EML08GPGT	40-pin DIP (P) 42-pin SDIP (B) 44-pin QFP (FB)	M68CBL05B M68CBL05B M68CBL05C	M68TB08GP32P40 M68TB08GP32B42 M68TC08GP32FB44	M68TQS044SAG1 ¹ M68TQP044SAM01 ¹
68HC908GR4/GR8/GR16/GR32A/GR48A/ GR60A/GZ8/GZ16/GZ32/GZ48/GZ60	FSICEBASE	M68EML08GZ	28-pin DIP (P) 28-pin SOIC 32-pin QFP (FA) 32-pin LQFP (FJ) 48-pin LQFP 64-pin QFP (FB)	M68CBL05C	M68TC08GZP28 M68TC08GR8FA32 M68TC08GZFJ32 M68TC08GZFA48 M68TC08GZFB64	M68DIP28SOIC M68TQS032SAG1 ¹ M68TQP032SA1 ¹ M68TQP048SD1 M68TQS064SAG1 M68TQP064SA1
68HC908JB8	FSICEBASE	M68EM08JB8	20-pin DIP (P) 20-pin SOIC (DW) 28-pin SOIC (DW) 42-pin SDIP (B) 44-pin QFP (FB)	M68CBL05C M68CBL05C M68CBL05C M68CBL05B M68CBL05C	M68TC08JB8P20 M68TC08JB8P20 M68TC08JB8P28 M68TB08JB8B42 M68TC08JB8FB44	M68DIP20SOIC M68DIP28SOIC M68TQS044SAG1 ¹ M68TQP044SAM01 ¹
68HC908JB12 68HC908JB16	FSICEBASE	M68EM08JB1G	32-pin LQFP (FA) 28-pin SOIC (DW)	M68CBL05C	M68TC08JB12P20 M68TC08JB16FA32 M68TC08JB16P28	M68DIP28SOIC
68HC908JG16	FSICEBASE	M68EM08JB1G	32-pin LQFP (FA)	M68CBL05C	M68TC08JG16FA32	n/a
68HC908JK1E 68HC908JK3E 68HC908JK8	FSICEBASE	M68EML08JLJK	20-pin DIP (P) 20-pin SOIC (DW)	EMCBL60E	TH08JKP20E TH08JKP20E	M68DIP20SOIC

¹Each QFP target head adapter includes one TQSOCKET with guides (M68TQxxxSyG1) and one TQPACK disposable surface mount adapter (M68TQPxxxSy1 – 1.2-mm lead length or M68TQPxxxSyM01 – 1.6-mm lead length). Order additional TQPACKs and TQSOCKETS (optional) using part numbers referenced in the Surface Mount Adapters column to support multiple target systems.

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MICROCONTROLLERS (continued)

HARDWARE TOOLS (continued)

68HC08 Emulators, Cables, and Adapters (continued)

Product	Platform	Emulation Modules	Packages Supported	Flex Cable	Target Head Adapter	Surface Mount Adapter
68HC908JL3E 68HC08JL3 68HC908JL8 68HC908JL16	FSICEBASE	EML08JLJKE	28-pin DIP (P) 28-pin SOIC (DW) 32-pin SDIP 32-pin QFP (FA) 48-pin LQFP	EMCBL60E	TH08JLP28E TH08JLP28E TH08JLSP32E TH08JLFA32E TH08JLFA48E	M68DIP28SOIC
68HC908KX8 68HC908KX2	FSICEBASE	M68EML08KX	20-pin SOIC (DW) 16-pin SOIC (DW)	M68CBL05C	M68TA08KX6P16	M68DIP16SOIC
68HC908LD64	FSICEBASE	M68EML08LD64	64-pin QFP (FU)	M68CBL05C	M68TC08LD64FU64	M68TQS064SAG1 ¹ M68TQP064SA1 ¹
68HC08LJ12 68HC908LK24 68HC908LJ12	FSICEBASE	M68EML08LJK	52-pin QFP (PB) 64-pin QFP (FU) 80-pin QFP (FA) 64-pin LQFP (PB)	M68CBL05E	M68TE08LJKFB52 M68TE08LJKFU64 M68TE08LJKFQ80 M68TC08LJ12PB64	M68TQS064SAG1 M68TQP064SA1 ¹
68HC908LT8 68HC908LV8	FSICEBASE	EML08LVTE	44-pin LQFP 52-pin LQFP	EMCBL60E	TH08LTFG44E TH08LTPB52E TH08LVPB52E	
68HC908MR8 68HC08MR4	FSICEBASE	M68EM08MR8	32-pin QFP (FA) 28-pin DIP (P)	M68CBL05C	MC68TC08MR8FA32 M68TC08MR8P28	M68TQS032SAG1 ¹ M68TQP032SA1 ¹
68HC908MR32 68HC908MR24	FSICEBASE	M68EM08MR32	64-pin QFP (FU)	M68CBL05C	M68TC08MR24FU64	M68TQS064SAG1 ¹ M68TQP064SAM01 ¹
68HC908MR16			56-pin SDIP (B)	M68CBL05C	M68TC08MR24B56	
MC908QC16 MC908QC8	FSICEBASE	EML08QCBLTY	16-PIN TSSOP 16-PIN PDIB/SOIC 28-PIN SOIC 20-PIN SOIC 20-PIN TSSOP 28-PIN TSSOP	EMCBL60	TH08QYT16 TH08QYP16 TH08QCDZ28 TH08QCDY20 TH08QCDZS20 TH08QCDR28	
68HC908QT1 68HC908QT2 68HC908QT4 68HC908QY1 68HC908QY2 68HC908QY4 68HC908QY8 68HC908QB8 68HC908QB4	FSICEBASE	M68EML08QBLTY	8-pin DIP (P) 8-pin SOIC (DW) 8-pin DFN (FQ) 16-pin DIP (P) 16-pin SOIC (DW) 16-pin TSSOP (DT)	M68CBL05A	M68TA08QTP8 M68TA08QTP8 M68TA08QYP16 M68TA08QYP16 M68TA08QYT16 M68TA08QTDNF8	M68DIP8SOIC M68DIP16SOIC M68DIP16TSSOP
68HC908SR12	FSICEBASE	M68EML08SR12	42-pin SDIP (B) 48-pin QFP (FA)	M68CBL05B M68CBL05C	M68TB08SR12B42 M68TC08SR12FA48	M68TQS048SDG1 ¹ M68TQP048SD1 ¹
MC68HC908QL4 MC68HC908QL3 MC68HC908QL2	FSICEBASE	M68EML08QBLTY	16-pin DIP (P) 16-pin SOIC (DW) 16-pin TSSOP (DT)	M68CBL05A	M68TA08QLP16 M68TA08QLP16 M68TA08QLDT16	M68DIP16SOIC M68DIP16TSSOP

¹Each QFP target head adapter includes one TQSOCKET with guides (M68TQSxxxSyG1) and one TQPACK disposable surface mount adapter (M68TQPxxxSy1 – 1.2-mm lead length or M68TQPxxxSyM01 – 1.6-mm lead length). Order additional TQPACKs and TQSOCKETS (optional) using part numbers referenced in the Surface Mount Adapters column to support multiple target systems.

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MICROCONTROLLERS

MICROCONTROLLERS (continued) HC08 DEVELOPMENT TOOLS

HC08 Development Tool Summary

Family	Part Numbers	DEMO/Evaluation Board	Debug Interface Cable	Emulator Kit	Software
AB	MC68HC908AB32	—	USBMULTILINK08 MC68CYCLONEPRO	FSICEKITAB32	CWX-HC08-SE ^{1 2 3}
AP	MC68HC908AP8/16/32/64	DEMO908AP64		FSICEKITAP64	
AS & AZ	MC68HC908AS32/60 MC68HC908AZ32/60	— —		FSICEKITASAZ	
EY	MC68HC908EY8/16	—		FSICEKITEY	
GP & GT	MC68HC908GP16/32 MC68HC908GT8/16	M68EVB908GP32 —		FSICEKITGPGT	
GR & GZ	MC68HC908GR4/8 MC908GR16/32/48/60 MC908GZ8/16/32/48/60	— DEMO908GZ60 DEMO908GZ60		FSICEKITGR8 FSICEKITGRGZ	
JB & JG	MC68HC908JB16/JG16	—		FSICEKITJB8 FSICEKITJBG	
JW	MC68HC908JW32	—		FSICEKITJW32	
JL & JK	MC68HC908JK3/8/16 MC68HC908JL3/8/16	DEMO908JL16		FSICEKITJLJKE	
KX	MC68HC908KX2/8	—		FSICEKITKX	
LB	MC68HC908LB8	DEMO908LB8		FSICEKITLB8	
LJ & LK	MC68HC908LJ12/24 MC68HC908LK24	— —		FSICEKITLJK	
MR	MC68HC908MR8 MC68HC908MR16/32	— —		FSICEKITMR8 FSICEKITMR32	
QB	MC68HC908QB8/4	DEMO908QB8		FSICEKITQBLTY	
QC	MC68HC908QC16/8	DEMO908QC16		FSICEKITQC16	
QL	MC68HC908QL2/3/4	M68EVB908QL4		FSICEKITQBLTY	
QT & QY	MC68HC908QT1/2/4 MC68HC908QY1/2/4	DEMO908QB8, M68DEMO908QT4 DEMO908QB8		FSICEKITQBLTY	
SR	MC68HC908SR12	—		FSICEKITSR12	

¹CodeWarrior™ Development Studio for HC(S)08 Special Edition is free-of-charge and is supplied with all Freescale HC08 development tools. Upgrade available to support 32K or 64K memory with part numbers CWS-HC08-C32K-CX or CWS-HC08-C64K-CX.

²CodeWarrior™ Development Studio for HC(S)08 Standard Edition also available, part number CWS-HC08-STDED-CX.

³CodeWarrior™ Development Studio for HC(S)08 Professional Edition also available, part number CWS-HC08-PROED-CX.

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MICROCONTROLLERS (continued) HCS08 DEVELOPMENT SYSTEMS

Innovative On-Chip Debug

The HCS08's innovative on-chip debug module allows expensive emulators to be replaced with low-cost serial real-time emulation and debug.

- Unique on-chip trigger and buffer hardware avoids the expense of traditional bus analyzers
 - Nine flexible trigger modes with three hardware break points
 - Change of flow address or event data buffer
- Real-time emulation of all MCU functions at HCS08's full operating voltage and frequency range with no limitations – unlike traditional emulators
- Non-intrusive debugging through a single, dedicated background debug mode (BDM) pin eliminates the need and cost of cumbersome emulator cables
- View and change internal registers and memory while running an application
- Single step, run, or trace application code

BDM Multilink Universal In-Circuit Debugger/Programmer (MSRP \$99)



The BDM Multilink is an easy-to-use, low-cost development tool for all HCS08, HCS12, and HCS12X MCUs.

- Real-time in-circuit debug through HCS08s BDM interface
- Fast in-circuit flash programming
- Small unobtrusive size (approximately 3" x 2" x 3/4")
- Supports 1.8 V to 5.5 V HC(S)08s
- Includes CodeWarrior™ Development Studio for HC(S)08 and HC(S)12, Special Edition
- USB interface

The order number for this product is **USBMULTILINKBDM**.

Cyclone Pro Universal Standalone In-Circuit Debugger/Programmer (MSRP \$499)

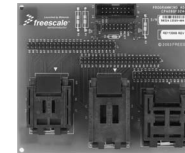


The Cyclone Pro provides all the capabilities of the BDM Multilink plus USB/Ethernet interfaces, the ability to function as a standalone programmer with push buttons and LEDs to control operation, and support for all MON08 HC08s and BDM HCS08s, HCS12s, and HCS12Xs.

- Supports all HC(S)08s, HC(S)12s, and HC(S)12Xs.
- Ethernet, USB, and Serial interfaces
- Fast in-circuit flash programming
- Scripting capability automates programming of test routines, test execution, erase, and final SW programming
- Auto-detects baud rate and frequency of target MCU
- Provides optional overdrive clock to target MCU
- Automatically cycles power for security checks (up to 500 mA)
- Supports 1.8 V to 5.5 V

The order number for this product is **M68CYCLONEPRO**.

HC(S)08 Programming Adapters (MSRP Starting at \$99 and up)



The HC(S)08 Programming adapter boards allow a P&E CyclonePro, USBMULTILINK08, USBMULTILINKBDM, or other compatible MON08/BDM programmers to program loose HC(S)08 MCUs. The programming adapter boards feature ZIF sockets, standard MON08/BDM header, and MCU breakout headers.

PAS08 PART NUMBERS

- PAS08QF324448 supports 32-pin 0.8mm QFP packages, 44-pin 0.8mm QFP packages and 48-pin 0.5mm QFP packages.
- PAS08QF80 supports 80-pin 0.5mm QFP and 80-pin 0.65mm QFP packages.
- PAS08QF5264 supports 52-pin 0.65mm QFP packages, 64-pin 0.5mm QFP packages and 64-pin 0.8mm QFP packages.
- PAS08W1628T28 supports 7.5mm SOIC packages up to 28 pins, 5.3mm SOIC packages up to 16 pins, and TSSOP packages up to 28 pins.
- PAS08P40B3256 supports DIP packages up to 40 pins and SDIP packages up to 56 pins.
- PAS08FN82448 supports 8-pin DFN packages, 24-pin QFN packages and 48-pin QFN packages.

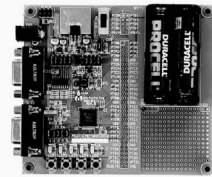
The order numbers for these products are **PAS08QF324448, PAS08QF80, PAS08QF5264, PAS08W1628T28, PAS08P40B3256, and PAS08FN82448**.

MICROCONTROLLERS

MICROCONTROLLERS (continued) HCS08 DEVELOPMENT SYSTEMS (continued)

MC9S08GB60 Demonstration Board

(MSRP \$49)



The GB60 demonstration kit contains everything a designer needs to develop and evaluate MC9S08GB or GT Family applications.

- Demonstration board with a 60K Flash MC9S08GB60 MCU, dual DB9 RS232 serial ports, switches, LEDs, potentiometer, MCU pin-breakout header, and small prototype area
- Powered by 2 AA batteries (included) or optional external power supply
- Learn the HCS08 MCU Family quickly with demonstration code including A/D, timer, PWM, and keyboard interrupt routines
- Modify demo code or develop new code for the GB60 in assembly or C using free CodeWarrior Development Studio for HC(S)08, Special Edition
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional BDM Multilink

The order number for this product is **M68DEMO908GB60**.

MC9S08QG8 Demonstration Board

(MSRP \$50)



The MC9S08QG8 demonstration board is a complete development system that allows you develop and evaluate MC9S08QG8 family of applications. The DEMO9S08QG8 board has a built-in USB-to-BDM interface for FLASH programming and debugging.

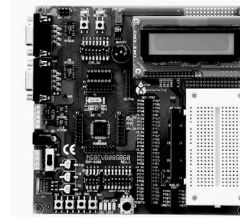
- Freescale MC9S08QG8 MCU
- Integrated USB-to-BDM interface for FLASH programming and debugging
- RS-232 COM serial port w/DB9 connector
- 8-pin DIP and 16-pin DIP sockets for easier evaluation of 9S08QG family devices
- Internal or external oscillator options
- User components for application development include: Reset push button, 2 input buttons, light sensor and potentiometer for ATD input, 2 output LEDs
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through the integrated USB-to-BDM interface

The order number for this product is **DEMO9S08QG8**.

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MC9S08GB60 Evaluation Board

(MSRP \$168.20)



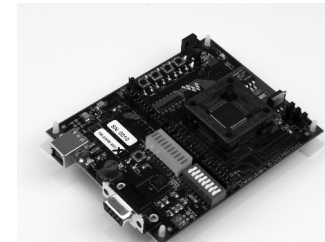
The GB60 evaluation kit contains everything a designer needs to develop and evaluate MC9S08GB or GT Family applications.

- Evaluation board with a 60K flash MC9S08GB60 MCU, LCD display, dual DB9 RS232 serial ports, switches, LEDs, and a breadboard area
- Modify demo code or develop new code for the GB60 in assembly or C using free CodeWarrior™ Development Studio for HC(S)08, Special Edition
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through DB9 serial port and included RS-232 serial cable or optional BDM Multilink
- Universal power supply

The order number for this product is **M68EVB908GB60**.

MC9S08AW60 Demonstration Board

(MSRP \$135)



The MC9S08AW60 demonstration board is a complete development system that allows you develop and evaluate MC9S08QG8 family of applications. The DEMO9S08AW60E board has a built-in USB-to-BDM interface for FLASH programming and debugging.

- Freescale MC9S08AW60 MCU
- Integrated USB-to-BDM interface for FLASH programming and debugging
- RS-232 COM serial port w/DB9 connector
- 64-pin ZIF socket for easier evaluation of 9S08AW60 family devices
- Internal or external oscillator options
- User components for application development include: Reset push button, 8 output LED bar, 8 input switches, 4 side switches, light sensor, potentiometer, and Freescale 2-axis accelerometer (MMA6260Q)
- Program and debug code using free CodeWarrior Development Studio for HC(S)08, Special Edition through the integrated USB-to-BDM interface

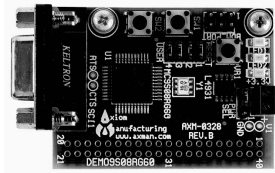
The order number for this product is **DEMO9S08AW60E**.

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MICROCONTROLLERS (continued)
HCS08 DEVELOPMENT SYSTEMS (continued)

MC9S08RG60 Demonstration Board

(MSRP \$49.95)



The RG60 demonstration board allows a designer to develop and evaluate MC9S08RG, RC, RD, or RE Family applications.

- Demonstration board with a 60K Flash MC9S08RG60 MCU, DB9, RS-232 serial port, switches, LEDs, Voltage Regulator, and MCU pin-breakout header
- Small Form Factor (approximately 5.5 cm × 4 cm)
- Innovative HCS08 Serial Monitor allows users to program, debug, and emulate application code via the RS-232 DB9 serial port
- Modify demo code or develop new code for the GB60 in assembly or C using free CodeWarrior Development Studio for HC(S)08, Special Edition

The order number for this product is **DEM09S08RG60**.

MICROCONTROLLERS

MICROCONTROLLERS (continued)

HCS08 DEVELOPMENT SYSTEMS (continued)

HCS08 Development Tool Summary

Family	Part Numbers	Demo Board	Evaluation Board	Debug Interface Cable	Software
AW	MC9S08AW60/32/16	DEMO9S08AW60E	—	USBMULTILINKBDM M68CYCLONEPRO	CWX-HC08-SE ^{1 2 3}
GB & GT	MC9S08GB32/60 MC9S08GT16/32/60	M68DEMO908GB60	M68EVB908GB60		
RC, RD, RE, RG	MC9S08RC8/16/32/60 MC9S08RD8/16/32/60 MC9S08RE8/16/32/60 MC9S08RG32/60	DEMO9S08RG60	—		

¹CodeWarrior™ Development Studio for HC(S)08 Special Edition is free-of-charge and is supplied with all Freescale HC08 development tools. Upgrade available to support 32K or 64K memory with part numbers CWS-HC08-C32K-CX or CWS-HC08-C64K-CX.

²CodeWarrior™ Development Studio for HC(S)08 Standard Edition also available, part number CWS-HC08-PROED-CX.

³CodeWarrior™ Development Studio for HC(S)08 Professional Edition also available, part number CWS-HC08-PROED-CX.

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MICROCONTROLLERS (continued) HCS12 DEVELOPMENT SOFTWARE

CodeWarrior™ Development Studio for HCS12, Special Edition

This comprehensive special edition toolset combines the best from Freescale Semiconductor, CodeWarrior, and leading third-party developers and is bound to establish a new standard with the included components for fast and easy MCU development.

Features:

- Industry-leading CodeWarrior Integrated Development Environment
 - Project manager for up to 32 files
- Built-in “stationary” templates with example assembly and C code to help create new projects faster
- CPU and timer simulation
- Flash programming
- Assembler, linker, and assembly source level debugger supports all HCS12 MCUs
- Highly optimized ANSI C compiler and C source level debugger for up to 32K-bytes code size
 - Over 60 optimization strategies specifically designed to boost performance and reduce code size
 - Upgrades to support larger memory HCS12s available
- Processor Expert™ rapid application design tool from UNIS
 - Provides optimized and tested automatic C code generation for most HCS12 on-chip peripherals to dramatically reduce development time and improve code quality
 - Helps to eliminate time spent on low-level details, which allows more time for adding value to system solution
 - Promotes reusability and easy system configuration
 - Verifies design based on the actual MCU resources and timing contentions to help catch potential problems before you begin debugging
- Fully supports Freescale Semiconductor HCS12 hardware development tools
 - Cyclone Pro and BDM Multilink

The special edition software is available on CD-ROM and for download from www.freescale.com

The order number for this product is CWX-HXX-SE. (It is a 3 CD set that includes: CodeWarrior Development Studio for HC(S)08 Microcontrollers, R3.1; CodeWarrior Development Studio for HC(S)12 Microcontrollers, R3.1; HC(S)08 and HC(S)12 Service Pack CD.)

C Compiler

(MSRP starting at \$995)

The special edition is a full-featured toolset with a 32K-byte code size limited version of our highly optimized C compiler. Upgrade to a 64K version, or an unlimited version to support any HCS12. All upgrades have project management for greater than 32 files.

The order number is CWS-H12-C64K-CX (64K version)
CWS-H12-CC-CX (Unlimited version)

Standard Edition

(MSRP \$2,994)

The standard edition includes an unrestricted C compiler, project management for greater than 32 files, unlimited data visualization tools to ease debugging, libmaker to create binary libraries, decoder to create a listing from ELF files, and access to Unis’ software beans for the Processor Expert design tool.

The order number for this product is CWS-H12-STDED-CX.

Professional Edition

(MSRP \$5,394)

The professional edition provides the following additional advanced tools to speed your design to market:

- Embedded C++ for object-oriented programming
- Libmaker to create binary libraries
- Session record and play for automated testing
- Decoder to create a listing from ELF files
- Code coverage analysis isolate unused or badly used portions of code
- Profiler/performance analysis to identify and optimize critical portions of code
- Additional advanced beans for the Processor Expert design tool, including support for complex communication modules
- Bean wizard to build a software library that can be retargeted to any HC(S)08 or HC(S)12 silicon
- PC-lint Plug-in to use PC-lint with CodeWarrior Development Studio (purchased separately from Gimpel Software)
- OSEK awareness for kernel-aware debugging

The order number for this product is CWS-H12-PROED-CX.

Node-locked, dongle and floating licenses are available for C compiler upgrades, Standard Edition and Professional Edition.

MICROCONTROLLERS

MICROCONTROLLERS (continued)

HC(S)12 DEVELOPMENT STUDIO (continued)

CodeWarrior™ Development Studio for Freescale 68HC(S)12 Microcontrollers

CodeWarrior Development Studio provides the capabilities required by every engineer in the development cycle: from board bring-up to firmware development to final application development.

Features	Benefit	Special Edition	Standard Edition	Professional Edition
IDE				
Project Wizard	Gets you up and programming fast.	Yes	Yes	Yes
Program Manager Projects Sub Projects	Eliminates confusing and often complex files with visual preference panels.	Up to 32 files No	Unlimited Yes	Unlimited Yes
Build Tools				
Macro Assembler	For specific optimizations only you can provide.	Yes	Yes	Yes
Optimizing Compiler	Reduces code size and maximizes the capabilities of the microcontroller to achieve top performance.	C - 32K	C - Unlimited	C - Unlimited C++ - Unlimited
Libmaker	Allows reuse and maintenance of code through libraries.		Yes	Yes
Debug Tools				
Source-Level Debugger	Speeds debug cycles by viewing the source code as it executes.	ASM - Unlimited C - 32K	ASM - Unlimited C - Unlimited	ASM - Unlimited C - Unlimited C++ - Unlimited
Flash Programming	Fully integrated flash programming improves the build-debug cycle because it automates your downloads.	Yes	Yes	Yes
Simulator	Reduces costs and eliminates possible hardware issues during development.	Yes	Yes	Yes
Data Visualization & I/O Stimulation	Let's you see how your program effects peripherals and responds to outside input.	1 component/ 3 elements	Unlimited	Unlimited
Decoder	Allows you to create listings of ELF Files.		Yes	Yes
OSEK Awareness	Ready to work with OSEK, for RTOS aware debug capabilities.			Yes
Session Record & Play	Automates repetitive debug cycles during program validation.			Yes
Advanced Tools				
Processor Expert Basic Beans Software Beans Advanced Beans	Abstracts the hardware layer and generates optimized, microcontroller-specific code tailored to your application, so you can concentrate on design.	Yes	Yes Yes	Yes Yes Yes
Bean Wizard	Allows you to create reusable software components, which can easily be retargeted to any Freescale Hybrid, HC(S)08 or HC(S)12 microcontroller.			Yes
Profile Analysis & Code Coverage	Gives you visibility into running your program to allow fine tuning and better quality metrics.			Yes
PC-Lint Plug-in	Ensured compliance with MISRA and other code quality and style guidelines.			Yes

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MICROCONTROLLERS (continued)

HCS12 DEVELOPMENT SYSTEMS (continued)

CodeWarrior™ Development Studio for HCS12X with XGATE, Special Edition

This comprehensive special edition toolset combines the best from Freescale Semiconductor, CodeWarrior, and leading third-party developers and is bound to establish a new standard with the included components for fast and easy MCU development.

Features:

- Industry-leading CodeWarrior Integrated Development Environment
 - Project manager for up to 32 files
- Built-in “stationary” templates with example assembly and C code to help create new projects faster
- CPU and timer simulation
- Flash programming
- Assembler, linker, and assembly source level debugger supports all HCS12X and XGATE architectures
- Highly optimized ANSI C compiler and C source level debugger for up to 32Kbytes of HC9S12X code and 512 bytes of XGATE code
 - Over 60 optimization strategies specifically designed to boost performance and reduce code size
 - Upgrades to support larger memory HCS12Xs available
- Fully supports Freescale Semiconductor HCS12 hardware development tools
 - Cyclone Pro and BDM Multilink

The special edition software is available on CD-ROM and for download from www.freescale.com

The order number for this product is **CWX-H12-X00SE-EX**.

C Compiler

(MSRP starting at \$1,295)

The special edition is a full-featured toolset with a 32-K-byte code size limited version of our highly optimized C compiler. Upgrade to a 64K version, or an unlimited version to support any HCS12. All upgrades have project management for greater than 32 files.

The order number is **CWS-H12-XC64K-CX (64K version)**

CWS-H12-X00CC-CX (Unlimited version)

Standard Edition

(MSRP \$3,495)

The standard edition includes an unrestricted C compiler, project management for greater than 32 files, unlimited data visualization tools to ease debugging, libmaker to create binary libraries, decoder to create a listing from ELF files, and access to Unis’ software beans for the Processor Expert design tool.

The order number for this product is **CWS-H12-X0STD-CX**.

Professional Edition

(MSRP \$5,995)

The professional edition provides the following additional advanced tools to speed your design to market:

- Embedded C++ for object-oriented programming
- Libmaker to create binary libraries
- Session record and play for automated testing
- Decoder to create a listing from ELF files
- Code coverage analysis to isolate unused or badly used portions of code
- Profiler/performance analysis to identify and optimize critical portions of code
- PC-lint plug-in to use PC-lint with CodeWarrior Development Studio (purchased separately from Gimpel Software)
- OSEK awareness for kernel-aware debugging

The order number for this product is **CWS-H12-X0PRO-CX**.

Node-locked, dongle and floating licenses are available for C compiler upgrades, Standard Edition and Professional Edition.

MICROCONTROLLERS

MICROCONTROLLERS (continued)

HC(S)12 DEVELOPMENT STUDIO (continued)

CodeWarrior™ Development Studio for Freescale HC9S12X/XGATE Microcontrollers

CodeWarrior Development Studio provides the capabilities required by every engineer in the development cycle: from board bring-up to firmware development to final application development.

Features	Benefit	Special Edition	Standard Edition	Professional Edition
IDE				
Project Wizard	Gets you up and programming fast.	Yes	Yes	Yes
Program Manager Projects Sub Projects	Eliminates confusing and often complex files with visual preference panels.	Up to 32 files No	Unlimited Yes	Unlimited Yes
Build Tools				
Macro Assembler	For specific optimizations only you can provide.	Yes	Yes	Yes
Optimizing Compiler	Reduces code size and maximizes the capabilities of the microcontroller to achieve top performance.	HCS12X: C - 32K XGATE: C - 512 bytes	HCS12X: C - Unlimited XGATE: C - Unlimited	HCS12X: C - Unlimited HCS12X: C++ - Unlimited XGATE: C - Unlimited
Libmaker	Allows reuse and maintenance of code through libraries.		Yes	Yes
Debug Tools				
Source-Level Debugger	Speeds debug cycles by viewing the source code as it executes.	HCS12X: ASM - Unlimited XGATE: ASM - Unlimited HCS12X: C - 32K XGATE: C - 512 bytes	HCS12X: ASM - Unlimited XGATE: ASM - Unlimited HCS12X: C - Unlimited XGATE: C - Unlimited	HCS12X: ASM - Unlimited XGATE: ASM - Unlimited HCS12X: C - Unlimited HCS12X: C++ - Unlimited XGATE: C - Unlimited
Flash Programming	Fully integrated flash programming improves the build-debug cycle because it automates your downloads.	Yes	Yes	Yes
Simulator	Reduces costs and eliminates possible hardware issues during development.	Yes	Yes	Yes
Data Visualization & I/O Stimulation	Let's you see how your program effects peripherals and responds to outside input.	1 component/ 3 elements	Unlimited	Unlimited
Decoder	Allows you to create listings of ELF Files.		Yes	Yes
OSEK Awareness	Ready to work with OSEK, for RTOS aware debug capabilities.			Yes
Session Record & Play	Automates repetitive debug cycles during program validation.			Yes
Advanced Tools				
Profile Analysis & Code Coverage	Gives you visibility into running your program to allow fine tuning and better quality metrics.			Yes
PC-Lint Plug-in	Ensured compliance with MISRA and other code quality and style guidelines.			Yes

MICROCONTROLLERS (continued)

HCS12 DEVELOPMENT SYSTEMS (continued)

HCS12 Development Kit

The HCS12 Development Kit is an economical tool for developing code and evaluating it on HCS12 "Dx", "A", and "B" Family MCUs. This easy to order kit combines the BDM Multilink and an evaluation board (EVB). The EVB simplifies user evaluation of prototype hardware and software by providing the essential MCU timing and I/O circuitry as well as a prototype area to allow custom interfacing. The BDM Multilink interfaces to the EVB through the 6-pin BDM connector for real-time in-circuit emulation and fast FLASH programming.

HCS12DP256 Evaluation Board

- MC9S12DP256 MCU provides superset evaluation of all HCS12 "Dx", "A", and "B" derivatives
- 256K-bytes FLASH
- Prototyping area
- Header connectors for access to the MCU's I/O and bus lines
- RS232 Communications
- CAN Communication

BDM Multilink

- Universal development tool for all BDM 68HC12s and HCS12s
- Real-time in-circuit emulation and debug
- Fast in-circuit programming
- Auto-detects frequency
- Small unobtrusive size (approximately 3" x 2" x 3/4")
- Supports 2.0 V to 5.5 V targets

CodeWarrior™ Integrated Development Environment

- Full debugger, assembler, linker, and programmer
- Evaluation C compiler

The order number for this product is **M68KIT912DP256**.

BDM Stand-Alone Programmer

The BDM Programmer provides a fast, efficient, low-cost method of programming the on-chip FLASH and EEPROM memory of our 68HC12 and HCS12 Families utilizing the BDM interface. The programmer can be used stand-alone with a simple push button and LED interface.

- Fast in-circuit stand-alone programming
 - Simple push button and LED user interface
 - Performs erase, program, and verify cycle on 256K FLASH parts in as little as 10.5 seconds
- Host-based programming with scripting capability to execute a series of commands
 - Automated programming of test routines, test execution, erase, and final software programming
- Optionally provides FLASH programming voltage via the BDM connector

The order number for this product is **SCBDMPGMRS12**.

BDM Multilink Universal In-Circuit Debugger/Programmer

The BDM Multilink is an easy-to-use, low-cost universal development tool for all HCS12 MCUs.

- Real-time in-circuit debug through HCS12s BDM interface
- Fast in-circuit flash programming
- Small unobtrusive size (approximately 3" x 2" x 3/4")
- Supports 1.8 V to 5.5 V HC(S)12s
- Includes CodeWarrior Development Studio for HC(S)08 and HC(S)12, Special Edition
- USB interface

The order number for this product is **USBMULTILINKBDM**.

Cyclone Pro Universal Standalone In-Circuit Debugger/Programmer

The Cyclone Pro provides all the capabilities of the BDM Multilink plus USB/Ethernet interfaces, the ability to function as a standalone programmer with pushbuttons and LEDs to control operation, and support for all MON08 HC08s and BDM HC(S)08s and HCS12s.

- Supports all HC(S)08s and HC(S)12s
- Ethernet, USB, and Serial interfaces
- Fast in-circuit flash programming
- Scripting capability automates programming of test routines, test execution, erase, and final SW programming
- Auto-detects baud rate and frequency of target MCU
- Provides optional overdrive clock to target MCU
- Automatically cycles power for security checks (up to 500 mA)
- Supports 1.8 V to 5.5 V

The order number for this product is **M68CYLCONEPRO**.

HCS12E128 Evaluation Board

The E128 evaluation board allows a designer to develop and evaluate MC9S12E128 and E64 family applications.

- MC9S12E128 112-pin Thin Quad Flat Pack (TQFP)
- Two 50-pin connectors bring out all I/O pins of the MCU
- Versatile connector design for use with solderless breadboards, prototyping cards, or embedding into your design
- Supplied with 8 MHz crystal, but internal bus can run up to 24 MHz (using on-chip PLL)
- On-chip single-wire Background Debug Module (BDM) fully supported for loading and debugging user code
- Program and debug code using free CodeWarrior Development Studio for HC(S)12, Special Edition, through DB9 serial port and included RS232 serial cable or optional BDM Multilink

The order number for this product is **M68EVB912E128**.

MICROCONTROLLERS (continued) HCS12 DEVELOPMENT SYSTEMS (continued)

HCS12C32 Evaluation Board

The C32 evaluation board allows a designer to develop and evaluate MC9S12C32 family applications.

- 80-QFP 9S12C32 MCU
- 8 general purpose LEDs (Port B), power LED, reset LED
- 8 DIP switches for general purpose input (Port A)
- High speed 82C250 CAN transceiver
- SPI connected to socket for serial EEPROM application
- SCI connected to RS-232 transceiver and 9-way D-type socket
- BDM interface header connection
- Large area for prototyping with +5.0 V and GND connection strips at either end
- MCU Pin-Breakout Header for easy access to all MCU signals
- Program and debug code using free CodeWarrior™ Development Studio for HC(S)12, Special Edition, through DB9 serial port and included RS232 serial cable or optional BDM Multilink

The order number for this product is **M68EVB912C32**.

HCS12C32 Demo Kit

In addition to the MCU module (M68MOD912C32), the M68DKIT912C32 includes a Docking Module, which provides a programming interface with a personal computer and support circuitry for working with the microcontroller. This includes a power regulator, a socket for the MCU module, user LEDs and pushbuttons, and a snap-off prototyping area. A power supply and serial cable are included with the kit. A resource CD containing this manual, example programs, and all the MCU documentation, along with a CodeWarrior™ C compiler on CD complete the package.

The Demo Kit consists of the following items:

- M68DEM09S12C32 module, in 32-pin DIP form factor
- Docking Module (to accommodate above)
- 9-pin serial cable
- 6.0 V DC power supply
- CD with examples, manual with full schematics, and data sheets
- Accommodation for dual 40-pin I/O bus expansion connectors (user-installed option)
- Program and debug code using free CodeWarrior™ Development Studio for HC(S)12, Special Edition, through DB9 serial port and included RS232 serial cable or optional BDM Multilink

The order number for this product is **M68DKIT912C32**.

HCS12C32 Module Board

The M68MOD912C32 MCU Module contains everything a designer needs to develop and evaluate MC9S12C32 microcontroller (MCU) applications. The M68MOD912C32 MCU module contains the support circuitry to function as a standalone development board. The user just supplies the power.

The M68MOD912C32 MCU module comes in standard 32-pin DIP footprint that plugs into 0.6" wide DIP sockets and solder-less breadboards. A BDM connector is provided on the MCU Module for development tool application and is compatible with standard HCS12 BDM interface cables and software. Also once the user develops and tests the code, they can place the same MCU Module into the "system" due to the 32-pin DIP form factor; the tool becomes the end product.

- 9S12C32 MCU in 48-pin LQFP
- 8-MHz crystal
- PLL circuit
- Local 5.0 V low-dropout 100 mA regulator
- RS232 transceiver circuit, with hardware handshaking
- Standard 6-pin BDM connector
- On-chip serial monitor
- LOAD/RUN switch to support serial monitor
- Pinout is super-set of competing 24-pin modules on the market

The order number for this product is **M68MOD912C32**.

HCS12NE64 Demo Board

The MC9S12NE64 demonstration board contains everything a designer needs to develop and evaluate MC9S12NE64 applications.

- Demonstration board with a 64K flash MC9S12NE64 MCU, clear enclosed plastic case, DB9 RS232 serial port, switches, LEDs, potentiometer, MCU pin-breakout header, and Ethernet port
- Three third party TCP/IP stacks with accompanying CDs containing documentation from leading developers offering a range of software price points
- Evaluation TCP/IP stacks including an open source stack
- Multiple software demonstrations using the TCP/IP stacks
- Learn the MC9S12NE64 MCU quickly with demonstration code including low level Ethernet drives, A/D, timer, PWM, and keyboard interrupt routines
- Modify demo code or develop new code for the MC9S12NE64 in assembly or C using free CodeWarrior Development Suite for HCS12, Special Edition
- Program and debug code using free CodeWarrior Development Studio for HCS12, Special Edition through DB9 serial port and included RS232 serial cable or optional BDM Multilink
- Universal power supply included

The order number for this product is **DEM09S12NE64**.

MICROCONTROLLERS (continued)

HCS12 DEVELOPMENT SYSTEMS (continued)

HCS12NE64 Evaluation Board

The MC9S12NE64 evaluation board contains everything a designer needs to develop and evaluate MC9S12NE64 applications.

- Evaluation board with a 64K flash MC9S12NE64 MCU, Ethernet port, IrDA port, LCD display port, keyboard port, 512 KB SRAM, dual DB9 RS232 serial ports, switches, LEDs, and a breadboard area
- Evaluation TCP/IP stacks including an open source stack
- Multiple software demonstrations using the TCP/IP stacks
- Modify demo code or develop new code for the MC9S12NE64 in assembly or C using free CodeWarrior™ Development Suite for HCS12, Special Edition
- Program and debug code using free CodeWarrior Development Studio for HC08, Special Edition through DB9 serial port, RS232 serial cable included, via the MC9S12NE64 serial monitor or optional BDM Multilink
- Universal power supply

The order number for this product is **EVB9S12NE64**.

MC9S12UF32 Development Kit

The MC9S12UF32 Development Kit is an economical tool for developing code for the MC9S12UF MCU family. This easy to order kit combines the BDM Multilink and an evaluation board (EVB). The EVB simplifies user evaluation of prototype hardware and software by providing the essential MCU timing and I/O circuitry as well as a prototype area to allow custom interfacing. The BDM Multilink interfaces to the EVB through the 6-pin BDM connector for real-time in-circuit emulation and fast FLASH programming.

M68KIT912UF32 FEATURES

- Two Type II CompactFlash connectors with software selectable 5 V or 3.3 V power
- Secure Digital/MultiMediaCard connector (SD/MMC)
- SmartMedia, Memory Stick, and ATA Interface connectors
- USB 2.0 interface and series B USB connector
- One UART port with RS232 transceiver and DB9 connector
- Background Debug Mode (BDM) connector
- Break out headers for all processor control signals
- Input power and CompactFlash card power status LEDs
- Four user definable LEDs that can be disconnected from their control signals

M68KIT912UF32 KIT CONTAINS

- USBMULTILINKBDM—In-circuit debugger and Flash programmer
- M68EVB912UF32—MC9S12UF32 Evaluation Board
- CodeWarrior Development Studio for HCS12
- M68KIT912UF32 Resource CD
- Universal Power Supply
- M68EVB912UF32 Quick Start Guide

The order number for this product is **M68KIT912UF32**.

MICROCONTROLLERS

MICROCONTROLLERS (continued)

HARDWARE TOOLS

68HC12 Family

Product	Part Number	Evaluation Board	BDM Multilink Cable	Software	Programming	Additional Information
68HC812A4	M68HC12A4EVB	•		•		Evaluation board for HC812A4
68HC912B32	M68EVB912B32	•		•		Evaluation board for HC912B32
68HC912D60A	M68KIT912D60A	•	•	•	•	Kit includes M68EVB912D60A and BDM Multilink
	M68EVB912D60A	•		•		Serial cable to connect to HC12 BDM debug connector
68HC912DG128A	M68KIT912DG128A	•	•	•	•	Kit includes M68EVB912DG128A and BDM Multilink
	M68EVB912DG128A	•		•		Evaluation board for HC912DG128A
All HC12 Family	SCBDMPGMRS12		•	•	•	Serial programmer usable without host PC
	M68CYCLONEPRO		•	•	•	Universal standalone in-circuit debugger/programmer
	USBMULTILINKBDM		•	•	•	USB in-circuit debugger/programmer

• = Available

HCS12 Family

Product	Part Number	Evaluation Board	BDM Multilink Cable	Software	Demo Board	Programming	Additional Information
9S12DP256	M68EVB912DP256	•		•			Evaluation board for 9S12Dx256/128
9S12DT256/128	M68KIT912DP256	•	•	•		•	Kit includes M68EVB912DP256 and BDM Multilink
9S12DJ256/128	CWDEVSYS12DP256	•	•				Includes full compiler and EVB in handsome suitcase
9S12DG256/128	SCBDMPGRS12					•	Serial programmer usable without host PC
9S12E128	M68EVB912E128	•		•		•	Evaluation Board for 9S12E128
9S12E64							
9S12C32	M68EVB912C32	•		•			Evaluation Board for 9S12C32
	M68MOD912C32			•	•	•	9S12C32 Module board in the form of a 32-pin DIP package
	M68DKIT912C32			•	•	•	Includes the M68MOD912C32 and Module docking board
9S12NE64	EVB9S12NE64	•		•		•	Evaluation Board for the 9S12NE64
	DEM09S12NE64			•	•	•	Demo Board in clear plastic case for the 9S12NE64
All HCS12 Family	M68CYCLONEPRO			•		•	Universal standalone in-circuit debugger/programmer
	SCBDMPGRS12			•		•	Serial programmer usable without host PC
	USBMULTILINKBDM			•		•	USB in-circuit debugger/programmer
9S12UF32	M68KIT912UF32	•		•		•	Kit includes EVB and USB MULTILINK
	M68EVB912UF32	•		•		•	Evaluation Board for the 9S12UF32

• = Available

MICROCONTROLLERS (continued)

HARDWARE TOOLS (continued)

68HC16 and 68300 MEVB Families

Product	Platform	Package	Microcontroller Personality Board	BDM Cable (Note)	Software
68HC916X1	M68MPFB1632	120-pin PQFP (FH)	M68MPB916X1C	M68ICD16 or M68SDIL	Included M68SDBUG16AB
68HC16Y1	M68MPFB1632	160-pin PQFP (FT)	M68MPB16Y1B	M68ICD16 or M68SDIL	Included M68SDBUG16AB
68HC16Z1	M68MPFB1632	132-pin PQFP (FC)	M68MPB16Z1B	M68ICD16 or M68SDIL	Included M68SDBUG16AB
68331	M68MPFB1632	132-pin PQFP (FC)	M68MPB331B	M68ICD32 or M68SDIL	Included M68SDBUG32AB
68332A	M68MPFB1632	132-pin PQFP (FC)	M68MPB332AB	M68ICD32 or M68SDIL	Included M68SDBUG32AB
68332G	M68MPFB1632	132-pin PQFP (FC)	M68MPB332GB	M68ICD32 or M68SDIL	Included M68SDBUG32AB
68336	M68MPFB1632	160-pin PQFP (FT)	M68MPB336GB	M68ICD32 or M68SDIL	Included M68SDBUG32AB
68376	M68MPFB1632	160-pin PQFP (FT)	M68MPB376GB	M68ICD32 or M68SDIL	Included M68SDBUG32AB

Note:

ICD = Parallel cable to connect to the HC16 or 6833X BDM debug connector

SDI = Serial cable to connect to the HC16 or 6833X BDM connector

M68300 Business Card Computer

Product	Platform	BCC
68331	M68300PFB	M68BCC331
68332A	M68300PFB	M68BCC332A
68332G	M68300PFB	M68BCC332G

M•CORE™ Family

Product Supported	Description	Part Number	Serial Cable	CD ROM	User Manuals	Power Supply	Silicon Samples
MMC2107	Low-cost evaluation board	MMCEVB2107	•	•	•	•	•
	Mid-range evaluation board	MMCMB2107	•	•	•	•	•
	Mid-range evaluation board plus platform board	KITEVSMMC2107	•	•	•	•	•
	Serial debugger interface to 6833X BDM or MCORE OnCE debug connector	MMC14EBDI02	•		•	•	
MMC2114	Low-cost evaluation board	MMCEVB2114	•	•	•	•	•
	Serial debugger interface to 6833X BDM or MCORE OnCE debug connector	MMCCMB2114	•	•	•	•	•
		MMC14EBDI02	•		•	•	

• = Available

MICROCONTROLLERS

MICROCONTROLLERS (continued)

THIRD PARTY TOOLS

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire®

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Assemblers						
Avocet Systems, Inc.	•	•				www.avocetsystems.com
Green Hills Software	•	•	•	•	•	www.ghs.com
P&E Microcomputer Systems		•			•	www.pemicro.com
CodeWarrior™		•	•	•	•	www.freescale.com/codewarrior
Wind River Systems	•	•			•	www.wrs.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
BDM Support Tools						
Cosmic Software		•				www.cosmic-software.com
Wind River Systems		•		•	•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•		•		www.isystem.com
Lauterbach		•		•	•	www.lauterbach.com
Macraigor Systems LLC		•	•			www.macraigor.com
CodeWarrior				•	•	www.freescale.com/codewarrior
P&E Microcomputers Systems		•			•	www.pemicro.com
TASKING		•				www.tasking.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Code Coverage Tools						
Ashling Microsystems			•			www.ashling.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•		•	•	•	www.wrs.com
Green Hills Software	•		•	•	•	www.ghs.com
Hitex Development Tools						www.hitex.com
iSystem			•			www.isystem.com
TASKING		•		•		www.tasking.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Compilers						
Accelerated Technology, Inc.		•	•		•	www.acceleratedtechnology.com
Byte Craft Limited				•		www.bytecraft.com
TASKING		•		•		www.tasking.com
Cosmic Software		•				www.cosmic-software.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software		•	•	•	•	www.ghs.com
P&E Microcomputers Systems		•			•	www.pemicro.com
GNU		•			•	www.gnu.com
CodeWarrior		•	•	•	•	www.freescale.com/codewarrior

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MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire® (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Debuggers						
Ashling Microsystems		•	•			www.ashling.com
Accelerated Technology, Inc.		•	•	•	•	www.acceleratedtechnology.com
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
iSystem		•	•	•		www.isystem.com
Lauterbach	•	•	•	•	•	www.lauterbach.com
P&E Microcomputers Systems		•			•	www.pemicro.com
CodeWarrior™		•	•	•	•	www.freescale.com/codewarrior
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Evaluation Boards						
Axiom Manufacturing			•	•		www.axman.com
Arrow		•	•	•	•	www.arrow.com
Avnet		•	•	•	•	www.avnet.com
Future		•	•	•	•	www.future.com
Matrix Design, Inc.					•	www.cadreiii.com
CodeWarrior		•	•	•	•	www.freescale.com/codewarrior
Phytec			•			www.phytec.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Logic Analyzers						
Agilent Technologies, Inc.		•	•	•		www.agilent.com
iSystem		•				www.isystem.com
Tektronix		•	•	•		www.tek.com/measurement/logic_analyzers
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
In-Circuit Emulators or Hardware Debug Interface						
Ashling Microsystems		•	•			www.ashling.com
Wind River Systems		•	•		•	www.wrs.com
Hitex Development Tools		•				www.hitex.com
iSystem		•	•			www.isystem.com
Lauterbach		•	•			www.lauterbach.com
Microtek International, Inc.		•			•	www.microtek.com.tw/mice

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MICROCONTROLLERS

MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

32-Bit Third Party Tools 68xxx, 683xx, MPC500, M•CORE™, and ColdFire® (continued)

Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Performance Analysis Tools						
CodeTEST	•	•	•	•	•	www.freescale.com/codewarrior
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
iSystem		•	•			www.isystem.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Real-Time Operating Systems						
Accelerated Technology, Inc.	•	•	•	•	•	www.atinucleus.com
Lineo		•	•	•	•	www.rtxc.com
ETAS		•	•			www.etasinc.com
Green Hills Software	•	•	•	•	•	www.ghs.com
Precise Software	•	•	•	•	•	www.psti.com
Snap Gear					•	www.snapgear.com
TASKING		•				www.tasking.com
Wind River Systems	•				•	www.wrs.com
ENEA			•			www.ose.com
CodeWarrior™			•			www.freescale.com/codewarrior
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Simulation Tools						
Wind River Systems	•	•	•	•	•	www.wrs.com
Green Hills Software	•	•	•	•	•	www.ghs.com
TASKING		•		•		www.tasking.com
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Initialization Tools						
MicroAPL			•			www.microapl.co.uk
Company	68xxx	68300	MPC500	MCORE	ColdFire	Web Address
Specialty Protocols						
Mocana					•	www.mocana.com
Ixxat					•	www.ixxatusa.com

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MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

Microcontroller Third Party Development Tool Partners

Company Name	HC05	HC08	HC11	HC12	HC16	World Wide Web URL	Email Address
Adapters							
Adapters.com	•	•	•	•	•	www.adapters.com	sales@adapters.com
Logical Systems Corporation		•	•			www.logicals.com	info@logicals.com
Assemblers							
Avocet Systems, Inc.	•	•	•	•	•	www.avocetsystems.com	sales@avocetsystems.com
Engineers Collaborative, Inc., The (TECI)	•		•			www.tec-l.com	sales@tec-l.com
IAR Systems	•		•	•	•	www.iar.se	info@iar.se
CodeWarrior™	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com
P&E Microcomputer Systems	•	•	•	•	•	www.pemicro.com	pemicro@pemicro.com
Virtual Micro Design	•	•	•			www.vmdesign.com	info@vmdesign.com
BDM Support Tools							
Archimedes Software, Inc.					•	www.archimedessoftware.com	customer-service@archimedesinc.com
Avocet Systems, Inc.				•		www.avocetsystems.com	sales@avocetsystems.com
Axiom Mfg.				•		www.axman.com	Gary@axman.com
Cosmic Software, Inc.				•	•	www.cosmic-software.com	info@cosmic-us.com
Hitex Development Tools				•		www.hitex.com	info@hitex.com
IAR Systems				•		www.iar.se	info@iar.se
iSYSTEM					•	www.isystem.com	emulators@isystem.com
Kevin W Ross				•		www.kevinro.com	www.kevinro@nwlink.com
Lauterbach, Inc.				•	•	www.lauterbach.com	info@lauterbach.com
CodeWarrior				•	•	www.freescale.com/codewarrior	info@codewarrior.com
Nohau Corporation				•	•	www.nohau.com	sales@nohau.com
Noral Micrologics, Inc.				•		www.noral.com/pages/bdmhc12.htm	www.noral.com/pages/moreinfo.htm
P&E Microcomputer Systems				•	•	www.pemicro.com	pemicro@pemicro.com
Sid Price's Software Tools				•		www.softtools.com/tools	sales@softtools.com
Code Coverage Tools							
Ashling Microsystems, Ltd.	•	•	•	•		www.ashling.com	www.ashling.com/motocontact.html
Cosmic Software, Inc.	•	•	•	•	•	www.cosmic-software.com	info@cosmic-us.com
Hitex Development Tools	•	•	•	•		www.hitex.com	info@hitex.com
iSYSTEM	•	•	•		•	www.isystem.com	emulators@isystem.com
CodeWarrior	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com

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MICROCONTROLLERS

MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

Microcontroller Third Party Development Tool Partners (continued)

Company Name	HC05	HC08	HC11	HC12	HC16	World Wide Web URL	Email Address
Compilers							
Archimedes Software, Inc.	•	•	•	•	•	www.archimedessoftware.com	customer-service@archimedesinc.com
Avocet Systems, Inc.			•		•	www.avocetsystems.com	sales@avocetsystems.com
Byte Craft Limited	•	•				www.bytecraft.com/c6805.html	info@bytecraft.com
Cosmic Software, Inc.	•	•	•	•	•	www.cosmic-software.com	info@cosmic-us.com
IAR Systems			•	•	•	www.iar.se	info@iar.se
ImageCraft Creations, Inc.		•	•	•	•	www.imagecraft.com/software	info@imagecraft.com
CodeWarrior™	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com
Debuggers							
Ashling Microsystems, Ltd.	•	•	•	•	•	www.ashling.com/advice	www.ashling.com/advice/motocontact.html
Avocet Systems, Inc.	•		•	•	•	www.avocetsystems.com	sales@avocetsystems.com
Cosmic Software, Inc.	•	•	•	•	•	www.cosmic-software.com	info@cosmic-us.com
IAR Systems			•	•	•	www.iar.se	info@iar.se
iSYSTEM	•	•	•	•	•	www.isystem.com	emulators@isystem.com
Lauterbach, Inc.	•	•	•	•	•	www.lauterbach.com	info@lauterbach.com
CodeWarrior	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com
Nohau Corporation				•		www.nohau.com	sales@nohau.com
Noral Micrologics, Inc.				•		www.noral.com/pages/bdmhc12.htm	www.noral.com/pages/moreinfo.htm
P&E Microcomputer Systems	•		•		•	www.pemicro.com	pemicro@pemicro.com
Sid Price's Software Tools	•		•	•		www.softtools.com/tools	sales@softtools.com
Virtual Micro Design	•	•	•			www.vmdesign.com	info@vmdesign.com
Evaluation Boards							
Avnet Design Services		•				www.ads.avnet.com/evalkits.html	ads@avnet.com
Axiom Manufacturing		•	•	•		www.axman.com	Gary@axman.com
emWare		•				www.emware.com	sales@emware.com
Engineers Collaborative, Inc., The (TECI)	•					www.tec-l.com	sales@tec-l.com
Kevin W Ross		•	•			www.kevinro.com	www.kevinro@nwlink.com
MCT Paul & Scherer GmbH			•			www.mct.net	sales@mct.de
Mekatronix, Inc.			•			www.mekatronix.com	customer@mekatronix.com
Noral Micrologics				•		www.noral.com/pages/bdmcfire.htm	www.noral.com/pages/moreinfo.htm
Oztechnics P/L	•	•				www.oztechnics.com.au	info@oztechnics.com.au
P&E Microcomputer Systems					•	www.pemicro.com	pemicro@pemicro.com
SofTec Microsystems		•		•		www.softecmicro.com	info@softecmicro.com

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MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

Microcontroller Third Party Development Tool Partners (continued)

Company Name	HC05	HC08	HC11	HC12	HC16	World Wide Web URL	Email Address
Fuzzy and Neuro Tools							
Aptronix, Inc.	•	•	•		•	www.aptronix.com/fide	sales@aptronix.com
Inform Software Corporation	•	•	•	•	•	www.fuzzytech.com	hotline@inform-ac.com
Code Generation Tools							
Aisys, Inc.	•	•				www.aisysinc.com	info@aisysinc.com
ETAS, Inc.				•		www.etasinc.com	sales@etasinc.com
In-Circuit Emulators (ICE)							
Ashling Microsystems, Ltd.	•	•	•	•	•	www.ashling.com/advice	www.ashling.com/advice/motocontact.html
Avocet Systems, Inc.			•		•	www.avocetsystems.com	sales@avocetsystems.com
Engineers Collaborative Inc., The (TECI)	•		•			www.tec-l.com	sales@tec-l.com
Hitex Development Tools	•	•	•	•		www.hitex.com	info@hitex.com
iSYSTEM	•	•	•	•		www.isystem.com	emulators@isystem.com
Lauterbach, Inc.	•	•	•	•		www.lauterbach.com	info@lauterbach.com
Microtek International, Inc.						www.microtek.com.tw/mice	mice@smt.microtek.com.tw
Nohau Corporation			•			www.nohau.com	sales@nohau.com
Noral Micrologics, Inc.				•		www.noral.com/pages/bdmcfire.htm	www.noral.com/pages/moreinfo.htm
Performance Analysis Tools							
CodeTEST	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com
Avocet Systems, Inc.			•		•	www.avocetsystems.com	sales@avocetsystems.com
Hitex Development Tools	•	•	•	•		www.hitex.com	info@hitex.com
iSYSTEM	•	•	•		•	www.isystem.com	emulators@isystem.com
Virtual Micro Design	•	•	•			www.vmdesign.com	info@vmdesign.com
Programmers							
BP Microsystems, Inc.	•	•	•	•	•	www.bpmicro.com	info@bpmicro.com
Data I/O Corp.	•	•	•		•	www.dataio.com	webmaster@dataio.com
Engineers Collaborative, Inc., The (TECI)	•					www.tec-l.com	sales@tec-l.com
CodeWarrior™	•	•		•	•	www.freescale.com/codewarrior	info@codewarrior.com
Noral Micrologics, Inc.				•		www.noral.com/pages/bdmhc12.htm	www.noral.com/pages/moreinfo.htm
P&E Microcomputer Systems				•	•	www.pemicro.com	pemicro@pemicro.com
Phyton, Inc.	•			•		www.phyton.com	info@phyton.com

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MICROCONTROLLERS

MICROCONTROLLERS (continued)

THIRD PARTY TOOLS (continued)

Microcontroller Third Party Development Tool Partners (continued)

Company Name	HC05	HC08	HC11	HC12	HC16	World Wide Web URL	Email Address
Real-Time Operating Systems (RTOS)							
Accelerated Technology, Inc.			•		•	www.atinucleus.com	info@atinucleus.com
Avocet Systems, Inc.	•	•	•	•	•	www.avocetsystems.com	sales@avocetsystems.com
CMX Systems, Inc.	•	•	•	•	•	www.cmx.com	cmx@cmx.com
ETAS Inc.				•		www.etasinc.com	sales@etasinc.com
CodeWarrior™					•	www.freescale.com/codewarrior	info@codewarrior.com
Simulation Tools							
Cosmic Software, Inc.	•	•	•	•	•	www.cosmic-software.com	info@cosmic-us.com
CodeWarrior	•	•	•	•	•	www.freescale.com/codewarrior	info@codewarrior.com
Oztechnics P/L	•		•			www.oztechnics.com.au	info@oztechnics.com.au
P&E Microcomputer Systems	•	•	•	•	•	www.pemicro.com	pemicro@pemicro.com
TASKING						www.tasking.com	sales@tasking-us.com
Virtual Micro Design	•	•	•			www.vmdesign.com	info@vmdesign.com

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NETWORK AND COMMUNICATIONS PROCESSORS SOFTWARE TOOLS

68K, ColdFire®, MPC5xx, PowerPC® ISA, StarCore™, and M•CORE™ — CodeWarrior™

Product	Description	Target Support	RTOS Support	Board Support	Host-Target Interface	Host Platforms	Language Support	Compiler Output Formats
CWS-PPC-CMWFL-CX	CodeWarrior for PowerPC ISA	MPC505, MPC509, MPC555, MPC56x, MPC821, MPC823, MPC850, MPC86x, MPC8240, MPC826x, PPC603, PPC603ei, MPC7400	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	CodeTAP, PowerTAP, WireTAP Run Control Interface (JTAG and BDM (8xx only), Macraigor Systems COP Raven (for MPC82xx and PPC6xx), Macraigor Systems BDM Raven (for MPC8xx, MPC5xx), Abatron BDI 2000 (5xx, 8xx), Serial Ethernet	Windows 98/2000/NT/XP	C/C++, EC++, and PowerPC ISA, Assembly	ELF/DWARF 1.0; Freescale Semiconductor S-Record
CWS-MCF-LLPLT-CX	CodeWarrior Development Studio for ColdFire ISA, Linux Platform Edition, Node-locked license	MCF5272, MCF5282, MCF5475, MCF5485	uClinux, Linux	M5272C3 EVB, M5282EVB, M5475EVB, M5485EVB	Abatron BDI 2000, also Application debug using Serial or Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-MCF-LLAPP-CX	CodeWarrior Development Studio for ColdFire ISA, Linux Application Edition, Node-locked license	MCF5272, MCF5282, MCF5475, MCF5485	uClinux, Linux	M5272C3 EVB, M5282EVB, M5475EVB, M5485EVB	Serial, Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-MPC-5XX-CX	CodeWarrior Development Studio for MPC5xx, Node-locked	MPC555, MPC56x	Quadros RTXC, Embedix SDK, MQX Embedded, ATI Nucleus, OSEKturbo	MPC555PBSLK, MPC564EVB, MPC565EVB	PowerTAP, Abatron BDI 2000, P&E Microcomputer CABLEPPC (BDM only), Macraigor System BDM	Windows 2000/XP	C/C++, Assembly	DWARF1, DWARF2, STABS
CWS-MPC-5500B-CX	CodeWarrior Development Studio for MPC55xx, Build only tools, Node-locked license	MPC55xx	n/a	n/a	n/a	Windows 2000/XP	C/C++, Assembly	DWARF1, DWARF2, STABS
CWS-PPC-LLPLT-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Platform Edition, Node-locked license	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC52xx, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	USB TAP, PowerTAP, Abatron BDI 2000, also Application debug using Serial or Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-PPC-LLAPP-CX	CodeWarrior Development Studio for PowerPC ISA, Linux Application Edition, Node-locked license	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Linux	MPC5200, MPC7xx, MPC74xx, MPC8xx, MPC82xx, MPC603, PPC603ei	Serial, Ethernet	Linux	C/C++, Assembly	GNU compiler output
CWS-STC-WIN-CX	CodeWarrior Software Development Tools for StarCore	MSC8101, MSC8102, MSC8103, MSC8122, MSC8126, MSC711X	SmartDSP OS, RTXC, OSE	MSC8101EVM, MSC8101ADS, MSC8102ADS, MSC8102ADS-HOST, MSC8122ADS, MSC8126ADS, MSC711XEVM, MSC711XADS	Ethernet TAP, USB TAP, Macraigor Wiggler	Windows 2000/XP	C/C++	ELF/DWARF
CWS-STC-SOL-CX	CodeWarrior Software Development Tools for StarCore	MSC8101, MSC8102, MSC8103, MSC8122, MSC8126	SmartDSP OS, RTXC, OSE	MSC8101EVM, MSC8101ADS, MSC8102ADS, MSC8102ADS-HOST, MSC8122ADS, MSC8126ADS	Macraigor Wiggler, PCI, HTI	Solaris 2.7, 2.8	C	ELF/DWARF

NETWORK AND COMMUNICATIONS PROCESSORS

NETWORK AND COMMUNICATIONS PROCESSORS (continued)

HARDWARE TOOLS

CodeWarrior™

Product	Description	Target Board	Power Supply	Schematic	User Manual	Documentation
MPC823FADS	MPC823 FADS Board	•	•	•	•	•
MPC850SRFADS	MPC850 FADS Board	•	•	•	•	•
MPC860FADS	MPC860 FADS Board	•	•	•	•	•
MPC860TFADS	MPC860 TFADS Board	•	•	•	•	•
PQ2FADS-ZU	FADS for the entire PowerQUICC™ II family (480 TBGA)	•	•	•	•	•
PQFADS-VR	FADS for the entire PowerQUICC II family (516 PBGA)	•	•	•	•	•
MPC8272ADS	FADS for the PQ27e family	•	•	•	•	•
MPC8349E-MDS	MPC8349E Modular Development System	•	•	•	•	•

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Netcommunication Hardware Tools

Product Family	Device Supported	Part Number	Description
QUICCstart Evaluation Systems			
MPC8XX	MPC852T	CWDS852EVAL	Hardware and software complete evaluation system (low cost)
	MPC853T	TBD	TBD
	MPC866	CWDS866EVAL	Hardware and software complete evaluation system (low cost)
	MPC875	CWDS875EVAL	Hardware and software complete evaluation system (low cost)
MPC82XX	MPC8248	CWDS8248EVAL, CW8248DSEVAL	Hardware and software complete evaluation system (low cost)
	MPC8250	CWDS8250EVAL, CW8250SDEVAL	Hardware and software complete evaluation system (low cost)
	MPC8280	CW8280DSEVAL	Hardware and software complete evaluation system (low cost)
MPC85XX	MPC8540	CWDS8540EVAL	Hardware and software complete evaluation system (low cost)

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NETWORK AND COMMUNICATIONS PROCESSORS (continued)

HARDWARE TOOLS (continued)

Netcommunication Hardware Tools (continued)

Product Family	Device Supported	Part Number	Description
Application Development Systems			
M683XX	MC68EN302	M68302FADS-ENA	Ethernet Adaptor Card, M68302FADS comes with MC68EN302RC25
MPC8XX	MPC823	MPC823FADS	MPC823 Family Application Development System (FADS)
	MPC850	MPC850SRFADS	MPC850 Family Development System
	MPC860	MPC866ADS	MPC860/62/66 Development System with Wiretap
	MPC862	MPC866ADS	MPC860/62/66 Development System with Wiretap
	MPC866	MPC866ADS	MPC860/62/66 Development System with Wiretap
	MPC852T	MPC852TADS	MPC852T Development System with Wiretap
	MPC853T	TBD	TBD
	MPC885 Family	MPC885ADS	MPC885 Family Development System with Wiretap
MPC82XX	8260/70/80 – 480-pin TBGA	PQ2FADS-ZU	PQ2 Family Application Development System
	8260/70/80 – 516-pin PBGA	PQ2FADS-VR	PQ2 Family Application Development System
	8272 Family	MPC8272ADS	8272 Family Application Development System
	All PQ2	MPC8260ADS-ECOM	MPC8260 E1/E3 Communication Companion Board for ADS
	All PQ2	MPC8260ADS-TCOM	MPC8260 T1/T3 Communication Companion Board for ADS
	All PQ2	MPC8266ADS-PCIAI	MPC8266ADS-PCI add in board
MPC834X	MPC8349E Family	MPC8349-MDS	PowerQUICC™ II Pro Development System
		MPC8349E-MDS-PB	System Card for MPC8349E Family
		PQ-MDS-PIB	Platform Board for PowerQUICC Family
		PQ-MDS-PMCPCI	PMC Cards for PowerQUICC Family
		PQ-MDS-USB	USB Cards for PowerQUICC Family
MPC85XX	8540	MPC8540ADS-BGA	PQ3 8540 Application Development System
	8548	PPCEVAL-CDS-8548	PQ3 8548 Family Customer Development System
	8555/8541	PPCEVAL-CDS-8555	PQ3 8555/8541 Customer Development System
	8560	MPC8560ADS-BGA	PQ3 8560 Application Development System
Interface Kits			
MPC8XX	MPC8xx, MC683xx	MPC860ADI-PC	Application Development Interface (ADI) for IBM PC
	MPC885	MPC885-FLASH	Flash Chip for MPC885ADS
	MPC850SR, MPC860SR	MPC860SR-PHY	ATM PHY Board for the MPC850 and MPC860 Development Systems
MPC82XX	All PQ2	MPC8260ADI-COP	ADI to COP Converter
	All PQ2	MPC8260ADS-FLASH	Flash Chip for 8260ADS
	All PQ2	MPCRCOP-3V	COP Interface

NETWORK AND COMMUNICATIONS PROCESSORS

NETWORK AND COMMUNICATIONS PROCESSORS (continued)

HARDWARE TOOLS (continued)

Netcommunication Hardware Tools (continued)

Product Family	Device Supported	Part Number	Description
Microcode Packages			
MPC8XX	MPC860, MPC855T	MPC860SWSS7-DOS	Signaling System 7 Microcode
MPC82XX	All with PQ2/PQ3 CPM	MPC8260SW-FDS	Fast Data Switching (FDS)
	All with PQ2/PQ3 CPM	MPC8260SW-MSP	Multi-Service Platform (MSP)
	All with PQ2/PQ3 CPM	MPC8260SW-ESS7	Enhanced SS7 (ESS7)
	All with PQ2/PQ3 CPM	MPC8260SW-EAAL2	Enhanced AAL2 (EAAL2)
Sandpoint Boards			
MPC824X	MPC8240	PPCEVAL-SP3-8240	Sandpoint with 8240 PMC
	MPC8241	PPCEVAL-SP3-8241	Sandpoint with 8241 PMC
	MPC8245	PPCEVAL-SP3-8245	Sandpoint with 8245 PMC
	MPC8245	PPCDEV-SP3-8245	Sandpoint Dev with PMC

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NETWORK AND COMMUNICATIONS PROCESSORS (continued)
SOFTWARE AND DEVELOPMENT TOOLS
C-PORT NETWORK PROCESSOR FAMILY DEVELOPMENT ENVIRONMENT
C-Ware Software Toolset (CST)

Part Number	Description	Additional Information
CSCC500	C-Ware Software Toolset annual support contract. Provides email and phone support, as well as online updates of the CST for a period of one year from date of purchase.	Note: The CST can be downloaded from the C-Port Family support site at freescale.cportcorp.com/support .
CSTC501W	C-Ware Software Toolset, web site download of <i>current</i> CST release. (For example, Windows or UNIX)	
CSTC501C	C-Ware Software Toolset, CD-ROM of <i>current</i> CST release for Microsoft Windows	
CSTC501D	C-Ware Software Toolset, CD-ROM of <i>current</i> CST release for Sun Solaris UNIX	
CSTC501X ^(Note)	C-Ware Software Toolset for C-Port Network Processor family, custom order (purchase order description should specify CST release number, web download or CD-ROM, and intended operating system. (For example, Microsoft Windows or Sun Solaris UNIX.)	

Note: Use this order number only if you want an archived CST release.

MPC8xx and MPC82xx — CodeWarrior™

Product	Description	RTOS Support	Flex Cable	Serial Cable	Integrated Development Environment	CD ROM	User Manuals	Power Supply	Host Platforms	In-Circuit Simulator/ Programmer (Board)
CWDEVSYS823FADS	MPC823 Development System	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	•	4.2.1	•	•	•	Windows 95/98/2000/NT	n/a
CWDEVSYS850FADS	MPC850 Development System	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	•	4.2.1	•	•	•	Windows 95/98/2000/NT	n/a
CWDEVSYS860FADS	MPC860 Development System	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	•	4.2.1	•	•	•	Windows 95/98/2000/NT	n/a
CWDEVSYS860TFADS	MPC860T Development System	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	•	4.2.1	•	•	•	Windows 95/98/2000/NT	n/a
CWDEVSYS8260AMC	MPC8260 Development System	QNX Neutrino; RTXC from Lineo; Embedix SDK from Lineo, Precise MQX, ATI Nucleus	n/a	•	4.2.1	•	•	•	Windows 95/98/2000/NT	n/a

• = Available

NETWORK AND COMMUNICATIONS PROCESSORS

NETWORK AND COMMUNICATIONS PROCESSORS (continued)

SOFTWARE AND DEVELOPMENT TOOLS (continued)

Sensors Development Tools

Product	Description	Status
13192DSK-A00	MC13191/92 Developer's Starter Kit used to implement wireless network designs compatible with the IEEE® 802.15.4 standard	Available
13192RFC-A00	A low-cost development board that provides a simple interface to Freescale's MC13192 transceiver	Available
RD3152MMA7260Q	ZigBee™ Sensing Triple Axis Reference Design (ZSTAR) provides a cost-effective low-power wireless sensing connection using Freescale's MC13191 transceiver	Available
RD3112MMA7260Q	Sensing Triple Axis Reference Design (STAR) — Using One Component — 1 XYZ-axis	Available
DEM01985MC34940E	Demonstration Kit for the MC34940 Electric Field Sensing Device	Available
KIT33794DWBEVM	Evaluation Kit using the MC33794 Electric Field Sensing Device	Available
RD1986MMA6260Q	3-Axis Acceleration Sensing Reference Design — Using Two Components — 1 XY-axis, 1 Z-axis	Available
RD1986MMA2260D	3-Axis Acceleration Sensing Reference Design — Using Three Components — 2 X-axis with 1 Device Rotated 90°, 1 Z-axis	Available
RD1979MPXM2102A	Altimeter Barometer Reference Design	Available
RD1950MPXM2010D	Water Level Reference Design	Available
KIT3109MMA7260Q	Evaluation Kit using the 3-axis sensor	Available
KIT3109MMA7261Q	Evaluation Kit using the 2.5g - 10g 3-axis sensor	Available
KIT3109MMA6280Q	Evaluation Kit using the 1.5g - 6g XZ-axis sensor	Available
KIT3109MMA6270Q	Evaluation Kit using the 1.5g - 6g XY-axis sensor	Available
KIT1925MMA1250D	Evaluation Kit for 5g z-axis Evaluation Board	Available
KIT1925MMA1260D	Evaluation Kit for 1.5g z-axis Evaluation Board	Available
KIT1925MMA1270D	Evaluation Kit for 2.5g z-axis Evaluation Board	Available
KIT1925MMA2260D	Evaluation Kit for 1.5g x-axis Evaluation Board	Available
KIT1925MMA6231Q	Evaluation Kit for 10g, 300Hz XY-axis Evaluation Board	Available
KIT1925MMA6233Q	Evaluation Kit for 10g, 900Hz XY-axis Evaluation Board	Available
KIT1925MMA6260Q	Evaluation Kit for 1.5g, 50Hz XY-axis Evaluation Board	Available
KIT1925MMA6261Q	Evaluation Kit for 1.5g, 300Hz XY-axis Evaluation Board	Available
KIT1925MMA6262Q	Evaluation Kit for 1.5g, 150Hz XY-axis Evaluation Board	Available
KIT1925MMA6263Q	Evaluation Kit for 2.5g, 900Hz XY-axis Evaluation Board	Available

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NETWORK AND COMMUNICATIONS PROCESSORS (continued)
SOFTWARE AND DEVELOPMENT TOOLS (continued)
CABLES AND HOST-TARGET INTERFACES

CodeWarrior™

Product	Description	Target Support	Connection Device	Power Supply
CWH-PTP-JTAG-HX	PowerTAP Pro for JTAG, Hardware Only	•	•	•
CWH-PTP-DPI-HX	PowerTAP Pro for DPI, Hardware Only	•	•	•
CWH-PTP-NEXUS-HX	PowerTAP Pro for OnCE Connections (StarCore™, 56800/E)	•	•	•
CWH-PPC-BDI10-YX	Abatron BDI1000 with software BDI CodeWarrior for PowerPC® ISA targets	•	•	•
CWH-PPC-BDI20-YX	Abatron BDI2000 with software BDI CodeWarrior for PowerPC ISA targets	•	•	•
CWH-MPC-PEBDM-YX	P & E MPC5xx BDM Interface Cable		•	
CWH-PTP-DPI-HX	Ethernet Tap Emulator for DPI	•	•	•
CWH-PTP-JTAG-HX	Ethernet Tap Emulator for DPI, JTAG	•	•	•
CWH-UTP-PPCC-HX	USB TAP for PPC COP targets	•	•	•
CWH-UTP-PPCD-HX	USB TAP for PPC DPI targets	•	•	•
CWH-WTP-ONCE-HX	USB TAP for 568xx	•	•	•

• = Available

Third Party Tools

Third Party Vendor	Website	Families Supported	Embedded Operating Systems	Compilers and Code Generation Tools	Software Debuggers	Coverification Tools and Simulation Models	Emulators and Diagnostic Tools	Logic Analyzers	Boards and Systems	Support Chips	Drivers/ Protocol Stacks
Abatron	www.abatron.ch	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4					•				
Agilent Technologies	www.agilent.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4					•	•			
AMCC	www.amcc.com	C-Port								•	
Apogee Software	www.apogee.com	MPC85xx, G2, G3, G4		•							
Arabella	www.arabellasw.com	MPC82xx, MPC85xx	•								•
ARC International	www.arc.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•						
Artesyn Communication Products	www.artesyn.com	G4							•		
Artis Microsystems	www.artismicro.com	G2, G4							•		
Ashley Laurent	www.ashleylaurent.com	MPC8xx, MPC82xx, MPC85xx									•
CMX Systems	www.cmx.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•		•						

• = Available

NETWORK AND COMMUNICATIONS PROCESSORS

NETWORK AND COMMUNICATIONS PROCESSORS (continued) SOFTWARE AND DEVELOPMENT TOOLS (continued) Third Party Tools (continued)

Third Party Vendor	Website	Families Supported	Embedded Operating Systems	Compilers and Code Generation Tools	Software Debuggers	Coverification Tools and Simulation Models	Emulators and Diagnostic Tools	Logic Analyzers	Boards and Systems	Support Chips	Drivers/Protocol Stacks
Corelis	www.corelis.com	G2, G3, G4			•		•				
Corrent™	www.corrent.com	C-Port								•	
Crescent Bay Software	www.crescentbaysoftware.com	G4		•							
Cypress®	www.cypress.com	C-Port								•	
Data Connection	www.dataconnection.com	MPC8xx, MPC82xx, MPC85xx									•
DY 4 Systems	www.dy4.com	G2, G3, G4							•		
Embedded Planet	www.embeddedplanet.com	MPC8xx, MPC82xx, MPC85xx							•		
Embedded Toolsmiths	www.etsmiths.com	MPC8xx, MPC82xx, MPC85xx, G4			•		•				
EmuTec	www.emutec.com	MPC8xx, MPC82xx, G2, G4					•				
Enea Embedded Technology	www.ose.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•		•						
Express Logic	www.expresslogic.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•								
Freescale Semiconductor	www.freescale.com/powerpc	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4				•			•	•	
GDA Technologies	www.gdatech.com	MPC8xx, MPC82xx, G4							•		
Genesi	www.genesi.lu	G4							•		
Green Hills Software	www.ghs.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•		•				•
HCL	www.hcltechnologies.com	C-Port							•		
Flextronics	www.flextronics.com	MPC8xx, MPC82xx, MPC85xx									•
IDT	www.idt.com	C-Port								•	
International Test Technologies	www.intertesttech.com	G2, G3, G4					•				
Jaluna	www.jaluna.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•						
Jungo	www.jungo.com	MPC8xx									•
Kadak	www.kadak.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•		•						
Kenati Technologies	www.kenati.com	MPC82xx, G4	•								
Lauterbach	www.lauterbach.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4			•		•				
LinuxWorks	www.linuxworks.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•						
MAI Logic	www.mai.com	G2, G3, G4							•	•	
Macraigor Systems	www.macraigor.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4			•		•				
Marvell Technology	www.marvell.com	G2, G3, G4							•	•	
Mentor Graphics	www.mentor.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•	•					
CodeWarrior™	www.freescale.com/codewarrior	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•				•		

• = Available

NETWORK AND COMMUNICATIONS PROCESSORS (continued)
SOFTWARE AND DEVELOPMENT TOOLS (continued)
Third Party Tools (continued)

Third Party Vendor	Website	Families Supported	Embedded Operating Systems	Compilers and Code Generation Tools	Software Debuggers	Coverification Tools and Simulation Models	Emulators and Diagnostic Tools	Logic Analyzers	Boards and Systems	Support Chips	Drivers/ Protocol Stacks
MicroAPL	www.microapl.co.uk	MPC85xx, G2, G3, G4		•							
Micro Digital	www.smxinfo.com	MPC8xx, MPC82xx, G2, G3	•		•						
MontaVista Software	www.mvista.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•		•						
Motorola Computer Group	mcg.motorola.com	G2, G3, G4, C-Port							•		
Motorola India Electronics (MIEL)	www.motorola.com/miel	C-Port							•		
MPI Software	www.mpi-softtech.com	G3, G4		•							
Netplane	www.netplane.com	MPC8xx									•
PMC-Sierra™	www.pmcsierra.com	C-Port								•	
QNX Software Systems	www.qnx.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•						
Radisys	www.radisys.com	MPC8xx, MPC82xx, G2, G3	•	•	•						
Radstone	www.radstone.com	G2, G3, G4							•		
Red Hat	www.redhat.com	MPC8xx, MPC82xx, G2, G3, G4	•	•	•						
Simpod	www.simpod.com	MPC8xx, MPC82xx, G2, G3, G4				•					
Sophia Systems	www.sophia.com	MPC8xx, MPC82xx, MPC85xx, G2, G3			•		•				
Summit Design	www.summit-design.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4				•					
Synopsys	www.synopsys.com	MPC8xx, MPC82xx, G2, G3, G4				•					
TASKING	www.tasking.com	MPC8xx, MPC82xx, G2, G3		•	•						
Tektronix	www.tektronix.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4						•			
Terra Soft Solutions	www.yellowdoglinux.com	G4	•								
TimeSys	timesys.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•		•						
Tundra Semiconductor	www.tundra.com	MPC8xx, MPC82xx, G2, G3, G4							•	•	
Wasabi Systems	www.wasabisystems.com	MPC85xx, G2, G3, G4	•	•	•						
Wind River Systems	www.windriver.com	MPC8xx, MPC82xx, MPC85xx, G2, G3, G4	•	•	•		•		•		•

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What's EOL?

END-OF-LIFE PRODUCTS

Freescale Semiconductor follows the industry standard "EIA-724 Product Life Cycle Data Model" to track the life cycle of its product. This model tracks the product's life cycle from "Product Newly Introduced" to "Product Phase Out." Products can be phased for a variety of reasons: improved product performance, change in technology roadmap, process obsolescence, market decline, etc.

When products are discontinued, a suggested possible replacement product or an alternative source of supply for discontinued products are made available when possible.

For a list of discontinued products with possible alternative suppliers, contact your local Freescale Semiconductor sales office or authorized distributor.

Product	Last Order Date	Last Ship Date	Possible Replacement
CDEV101A	TBD	TBD	TBD
CDEV501A	TBD	TBD	TBD
CDEV201200A	TBD	TBD	TBD
CDEV221200A	TBD	TBD	TBD
CDEV205266B	TBD	TBD	TBD
CDEV205266BUPG	TBD	TBD	TBD
CDEV209A	TBD	TBD	TBD
CDEV301A	TBD	TBD	TBD
CDEV302A	TBD	TBD	TBD
CDEV304A	TBD	TBD	TBD
CDEV305A	TBD	TBD	TBD
CDEV306A	TBD	TBD	TBD

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