



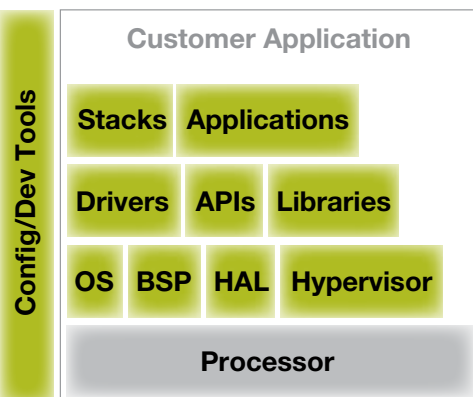
Beyond Silicon

Freescale embedded software solutions

Overview

Freescale's software and development solutions take you beyond silicon, helping to bring your embedded applications to life. We equip design engineers with comprehensive solutions including the silicon, software, development tools, ecosystem solutions, professional services and reference boards that are the best fit for their needs—reducing design complexity and accelerating their time to market. Freescale enables a wide variety of applications with our diverse array of software offerings, from drivers and simple demonstration software to complex, highly integrated vertical solutions.

Throughout freescale.com, you will see the graphic below used to illustrate the features of each software solution. Each embedded software solution provides the right level of enablement and integration to take the best advantage of the silicon and bring customers closer to their applications.



freescale.com/software

Supporting Your Development

Alliances

Freescale has a strong, global, collaborative ecosystem of embedded hardware, software and application-level partners enabling fully integrated solutions on Freescale platforms. Our vibrant ecosystem preserves choice, gives developers the peace of mind that they can find the solution they need and fosters rapid innovation.

freescale.com/alliances

Professional Engineering Services

As value-add to Freescale's quality products, the Professional Service team provides fee-based engineering services in support of the silicon and software Freescale delivers to customers. The team's technical competency is concentrated on embedded systems

and Linux, with domain knowledge in the automotive, industrial, networking and consumer electronics markets.

As product portfolio and software decisions are being made, the Freescale Professional Service team is committed to helping customers deliver their quality products to market quickly through the following offerings:

- Custom Software Development
- Documentation
- Performance Analysis
- Performance Optimization
- Porting/Migration
- Project Assessments
- Requirements Gathering
- System Consulting
- System Integration
- Testing

freescale.com/engservices



CodeWarrior Development Studio (Supports Most Freescale Processor Families)

CodeWarrior	<p>CodeWarrior Development Studio is a complete integrated development environment (IDE) that provides a highly visual and automated framework to accelerate the development of the most complex embedded applications. These development tools are now available in suites, providing the functionality and price that customers require for a given project. Here is an overview of each suite:</p> <ul style="list-style-type: none"> • CodeWarrior Professional Suite: Full featured development suites • CodeWarrior Standard Suite: Selectively featured development suites • CodeWarrior Basic Suite: Compiler upgrades to special editions, Linux applications editions and Flash programmer-only editions • CodeWarrior Special Editions: Feature limited development tools <p>CodeWarrior development tools support a wide variety of Freescale processor families. CodeWarrior Development Suites give customers the freedom and flexibility to purchase the toolset that best fits their needs across multiple processor families.</p>	freescale.com/codewarrior
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8-bit Microcontroller Software Offerings

Embedded Software Libraries	<p>These software libraries are designed to construct digital control systems for different motor types. The libraries contain optimized software modules implemented in assembly with C-callable function interface. Individual libraries are delivered in library modules. The interfaces to the algorithms included in these libraries have been combined into a single public interface include file. This reduces the number of files required for inclusion by application programs.</p> <p>Other devices supported: 32-bit ColdFire Microcontrollers, Digital Signal Controllers</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=FSLESL
FreeMASTER Run-Time Debugging Tool	<p>FreeMASTER software is a sophisticated tool with intuitive navigation that can be used in any application development. This tool allows control of an application remotely from a user-friendly graphical environment running on a PC. It also provides the ability to view real-time application variables in both textual and graphical form. Whether your design targets automotive, industrial or consumer appliances, FreeMASTER gives you what you need to monitor the system in real time, control the embedded application from a PC and demonstrate advanced capabilities of Freescale-driven solutions.</p> <p>Other devices supported: 16-bit microcontrollers, Digital Signal Controllers</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=FREEMASTER
Medical Applications USB Stack and Connectivity Library	<p>The medical applications USB stack and connectivity library provide standard communication interfaces for next-generation medical devices. Source code for this solution is downloadable, portable and easy to use. The stacks provide standardization, connectivity and portability to the existing 8-bit and 32-bit Freescale microcontroller portfolio.</p> <p>Other devices supported: 32-bit ColdFire Microcontrollers</p>	freescale.com/medicalusb
MQX RTOS and Software Solutions	<p>The Freescale MQX real-time operating system (RTOS) provides real-time performance within a small, configurable footprint. This RTOS is designed to allow you to configure and balance code size with performance requirements. The easy-to-use API and out-of-box experience ensures first-time RTOS users can start developing their application on the day software is installed. For experienced OS developers, it is easy to migrate legacy application code to a Freescale MQX-based platform. The RTOS is tightly integrated with the latest ColdFire processors from Freescale and provided with commonly used stacks and drivers for devices such as Ethernet and USB. The powerful design and development tools are integrated with CodeWarrior tools to provide additional profiling and debugging capability.</p> <p>Other devices supported: 32-bit ColdFire Microcontrollers, Power Architecture® Automotive Controllers (5xx/5xxx)</p>	freescale.com/mqx
OSEK	<p>Freescale OSEKturbo OS is the leading OSEK/VDX™ RTOS implementation available on the market today in terms of quality and performance. OSEKturbo fully conforms to the latest OSEK/VDX operating system standard. This RTOS is fully configurable and statically defined, either using the included OSEK Builder tool or using the CodeWarrior IDE environment. Only those functions that are required are included, providing the user with a truly scalable RTOS. The emphasis in the design of OSEKturbo OS is meeting demanding performance requirements, while maintaining an outstanding level of stability and maturity. The result is that Freescale OSEKturbo OS is one of most widely used OSEK/VDX OS implementations on the market today. Although the OSEK/VDX specification was created by the automotive industry, the specification does not limit its use to automotive applications and it is increasingly being used in a wide range of embedded applications ranging from industrial control to telecom products.</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=OSEKTURBO&tid=mAlp
Processor Expert and Embedded Components (formerly Bean Store)	<p>Processor Expert is a rapid application development tool integrated into the CodeWarrior Development Studio for Microcontrollers (HC08, HCS08, RS08, V1 ColdFire), HCS12(X) microcontrollers, 56800/E digital signal controllers and ColdFire architectures (V2, V3, V4). Via a rich GUI-based interface, it generates tested, optimized C code tuned to a customer's application needs and specific Freescale device. It includes a built-in knowledge base which immediately flags resource conflicts and incorrect settings to ensure errors are caught and fixed early in the design cycle.</p> <p>Other devices supported: 16-bit Microcontrollers, 32-bit ColdFire Microcontrollers, Digital Signal Controllers</p> <p>Embedded components is an expert knowledge-base of pre-packaged functions that work in conjunction with Processor Expert. The components encapsulate external peripherals and more advanced software functionality, such as communication protocols. Embedded components are already included with Professional Editions of CodeWarrior Tools and can be added to the Special and Standard Editions.</p> <p>Other devices supported: 16-bit Microcontrollers, 32-bit ColdFire Microcontrollers, Digital Signal Controllers</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=PROCESSOR-EXPERT freescale.com/beanstore
Touch-Sensing Software Suite	<p>Touch sensing helps increase product lifetimes by eliminating the mechanical wear and tear associated with push buttons and switches. The Touch touch-sensing software (TSS) suite transforms Freescale 8-bit S08 microcontrollers into touch sensors, giving designers the flexibility to select from more than 300 Freescale 8-bit MCUs to add cost-effective touch sensing functionality to their human-machine interface (HMI) designs.</p> <p>Other devices supported: Sensors</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=TSS

16-bit Microcontroller Software Offerings

AUTOSAR Microcontroller Abstraction Layer	<p>Freescale's AUTOSAR-compliant software for 16-bit S12X microcontrollers (MCUs) and 32-bit MCUs built on Power Architecture technology is a solution to the soaring amount of software content in automotive system designs and ever-tighter development deadlines. Freescale optimizes low-level software for our microcontrollers for each specific MCU family. Developing this software according to the AUTOSAR industry standard avoids the need for custom drivers, thus enabling customer cost efficiency. This makes Freescale MCUs easier to use, saves development and integration time, helps increase quality and lowers overall cost.</p> <p>Other devices supported: Power Architecture Automotive Controllers (5xx/5xxx)</p>	freescale.com/autosar
AUTOSAR Operating System	<p>Freescale is the only semiconductor vendor to offer a production-ready AUTOSAR-compliant OS with a decade's worth of experience developing and delivering OSEK/VDX compliant OSs to the automotive industry. Freescale AUTOSAR OS is available for 16-bit S12X microcontrollers (MCUs) and 32-bit MCUs built on Power Architecture technology. For many MCUs the OS supports advanced safety features such as memory protection and timing protection.</p> <p>Other devices supported: Power Architecture Automotive Controllers (5xx/5xxx)</p>	freescale.com/autosar
FreeMASTER Run-Time Debugging Tool	<p>FreeMASTER software is a sophisticated tool with intuitive navigation that can be used in any application development. This tool allows control of an application remotely from a user-friendly graphical environment running on a PC. It also provides the ability to view real-time application variables in both textual and graphical form. Whether your design targets automotive, industrial or consumer appliances, FreeMASTER gives you what you need to monitor the system in real-time, control the embedded application from a PC and demonstrate advanced capabilities of Freescale-driven solutions.</p> <p>Other devices supported: 8-bit microcontrollers, Digital Signal Controllers</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=FREEMASTER
Processor Expert and Embedded Components (formerly Bean Store)	<p>Processor Expert is a rapid application development tool integrated into the CodeWarrior Development Studio for Microcontrollers (HC08, HCS08, RS08, V1 ColdFire), HCS12(X) microcontrollers, 56800/E digital signal controllers and ColdFire architectures (V2, V3, V4). Via a rich GUI-based interface, it generates tested, optimized C code tuned to a customer's application needs and specific Freescale device. It includes a built-in knowledge base which immediately flags resource conflicts and incorrect settings to ensure errors are caught and fixed early in the design cycle.</p> <p>Other devices supported: 8-bit Microcontrollers, 32-bit ColdFire Microcontrollers, Digital Signal Controllers</p> <p>Embedded components is an expert knowledge-base of pre-packaged functions that work in conjunction with Processor Expert. The components encapsulate external peripherals and more advanced software functionality, such as communication protocols. Embedded components are already included with Professional Editions of CodeWarrior Tools and can be added to the Special and Standard Editions.</p> <p>Other devices supported: 8-bit Microcontrollers, 32-bit ColdFire Microcontrollers, Digital Signal Controllers</p>	freescale.com/webapp/sps/site/prod_summary.jsp?code=PROCESSOR-EXPERT freescale.com/beanstore

32-bit ColdFire Microcontroller Software Offerings

CMX Lite USB Stack	Freescale and CMX have collaborated to provide a complimentary USB stack for ColdFire and S08 USB microcontrollers in the Controller Continuum. The complimentary USB stack for the 8-bit S08 USB MCUs enable USB device modes of operation. The complimentary USB stack for the 32-bit ColdFire USB MCUs enable USB device and host modes of operation.	freescale.com/webapp/sps/site/prod_summary.jsp?code=CMX_USB-LITE&tid=t32pspMCF51JM
ColdFire TCP/IP Lite	InterNiche Technologies and Freescale have collaborated to provide an OEM version of InterNiche's Nichelite™ TCP/IP stack.	freescale.com/webapp/sps/site/prod_summary.jsp?code=COLDFIRE_TCPIP
Embedded Software Libraries	These software libraries are designed to construct digital control systems for different motor types. The libraries contain optimized software modules implemented in assembly with C-callable function interface. Individual libraries are delivered in library modules. The interfaces to the algorithms included in these libraries have been combined into a single public interface include file. This reduces the number of files required for inclusion by application programs. Other devices supported: 8-bit ColdFire Microcontrollers, Digital Signal Controllers	freescale.com/webapp/sps/site/prod_summary.jsp?code=FSLESL
MQX RTOS and Software Solutions	The Freescale MQX real-time operating system (RTOS) provides real-time performance within a small, configurable footprint. This RTOS is designed to allow you to configure and balance code size with performance requirements. The easy-to-use API and out-of-box experience ensures first-time RTOS users can start developing their application on the day software is installed. For experienced OS developers, it is easy to migrate legacy application code to a Freescale MQX-based platform. The RTOS is tightly integrated with the latest ColdFire processors from Freescale and provided with commonly used stacks and drivers for devices such as Ethernet and USB. The powerful design and development tools are integrated with CodeWarrior tools to provide additional profiling and debugging capability. Other devices supported: 8-bit Microcontrollers, Power Architecture Automotive Controllers (5xx/5xxx)	freescale.com/mqx
Medical Applications USB Stack and Connectivity Library	The medical applications USB stack and connectivity library provide standard communication interfaces for next-generation medical devices. Source code for this solution is downloadable, portable and easy to use. The stacks provide standardization, connectivity and portability to the existing 8-bit and 32-bit Freescale microcontroller portfolio. Other devices supported: 8-bit Microcontrollers	freescale.com/medicalusb
Metering Software Stack	The Freescale metering SDK supports a new ColdFire (MCF51EM256) reference design, and comes with source code and a complete design showing the capability of the MCF51EM256 for energy meter applications. The software architecture is based on a custom kernel and offers extensive functionality.	freescale.com/webapp/sps/site/overview.jsp?code=APLMETERING
Processor Expert and Embedded Components (formerly Bean Store)	Processor Expert is a rapid application development tool integrated into the CodeWarrior Development Studio for Microcontrollers (HC08, HCS08, RS08, V1 ColdFire), HCS12(X) microcontrollers, 56800/E digital signal controllers and ColdFire architectures (V2, V3, V4). Via a rich GUI-based interface, it generates tested, optimized C code tuned to a customer's application needs and specific Freescale device. It includes a built-in knowledge base which immediately flags resource conflicts and incorrect settings to ensure errors are caught and fixed early in the design cycle. Other devices supported: 8-bit Microcontrollers, 16-bit Microcontrollers, Digital Signal Controllers Embedded components is an expert knowledge-base of pre-packaged functions that work in conjunction with Processor Expert. The components encapsulate external peripherals and more advanced software functionality, such as communication protocols. Embedded Components are already included with Professional Editions of CodeWarrior Tools and can be added to the Special and Standard Editions. Other devices supported: 8-bit Microcontrollers, 16-bit Microcontrollers, Digital Signal Controllers	freescale.com/webapp/sps/site/prod_summary.jsp?code=PROCESSOR-EXPERT freescale.com/beanstore
VoIP Software for ColdFire	Freescale's VoIP software includes both Codecs and integration software in a single bundle that provides everything needed for a full-featured VoIP system for voice-enabled industrial applications. The solution uses a hybrid of open source and proprietary elements that include complete VoIP and device management software with APIs and example applications that can be modified or used as is.	freescale.com/webapp/sps/site/prod_summary.jsp?code=M53281KIT&parentCode=MCF532X&fssp=1&nodeId=0162468rH3Y TLC00M92076

Digital Signal Controller Software Offerings

DSC Libraries	Freescale's Embedded Libraries (Processor Expert software components for DSC) provide a fully expanded set of reusable software components. The Embedded Libraries reduce your development costs and expedites your time to market. Production quality drivers, algorithms implemented for optimal efficiency, example applications and reference applications are provided for the entire 56800E family of processors. Comprehensive documentation demonstrates how to combine the Embedded Libraries capabilities to quickly create a wide variety of embedded applications ranging from mission-critical MCU control functions to the most demanding digital signal processing algorithms. Because source code is included for many Embedded Libraries components, developers have complete flexibility to achieve their goals.	Contact your Freescale sales representative.
DSP VoIP Components	These are a suite of about 50 DSP components for the VoIP market, including data compression, voice quality enhancement, data and fax transmission, tone handling and more. Other devices supported: Digital Signal Processors	Contact your Freescale sales representative.
Embedded Software Libraries	These software libraries are designed to construct digital control systems for different motor types. The libraries contain optimized software modules implemented in assembly with C-callable function interface. Individual libraries are delivered in library modules. The interfaces to the algorithms included in these libraries have been combined into a single public interface include file. This reduces the number of files required for inclusion by application programs. Other devices supported: 8-bit Microcontrollers, 32-bit Coldfire Microcontrollers	freescale.com/webapp/sps/site/prod_summary.jsp?code=FSLESL
FreeMASTER Run-Time Debugging Tool	FreeMASTER software is a sophisticated tool with intuitive navigation that can be used in any application development. This tool allows control of an application remotely from a user-friendly graphical environment running on a PC. It also provides the ability to view real-time application variables in both textual and graphical form. Whether your design targets automotive, industrial or consumer appliances, FreeMASTER gives you what you need to monitor the system in real-time, control the embedded application form a PC and demonstrate advanced capabilities of Freescale driven solutions. Other devices supported: 8-bit Microcontrollers, 16-bit Microcontrollers	freescale.com/webapp/sps/site/prod_summary.jsp?code=FREEMASTER
Processor Expert and Embedded Components (formerly Bean Store)	Processor Expert is a rapid application development tool integrated into the CodeWarrior Development Studio for Microcontrollers (HC08, HCS08, RS08, V1 ColdFire), HCS12(X) microcontrollers, 56800/E digital signal controllers and ColdFire architectures (V2, V3, V4). Via a rich GUI-based interface, it generates tested, optimized C code tuned to a customer's application needs and specific Freescale device. It includes a built-in knowledge base which immediately flags resource conflicts and incorrect settings to ensure errors are caught and fixed early in the design cycle. Other devices supported: 8-bit Microcontrollers, 16-bit Microcontrollers, 32-bit ColdFire Microcontrollers. Embedded components is an expert knowledge-base of pre-packaged functions that work in conjunction with Processor Expert. The components encapsulate external peripherals and more advanced software functionality, such as communication protocols. Embedded components are already included with Professional Editions of CodeWarrior Tools and can be added to the Special and Standard Editions. Other devices supported: 8-bit Microcontrollers, 16-bit Microcontrollers, 32-bit ColdFire Microcontrollers	freescale.com/webapp/sps/site/prod_summary.jsp?code=PROCESSOR-EXPERT freescale.com/beanstore

Digital Signal Processor Software Offerings

DSP Baseband Components	Optimized Layer 1 baseband software solutions for prototype systems used by StarCore DSP customers to ramp up their development. These are available for LTE, WiMAX or WCDMA (basic) solutions and are provided as free, standards-compliant enablement software.	Contact your Freescale sales representative.
DSP Video Components	The Freescale video software portfolio is a family of independent processing elements typically found on DSPs or farms of DSPs for the encoding or decoding of video. These elements can be integrated to form a complete video processing chain. They are highly optimized components for StarCore DSP Processors and are licensed and supported to customers generally under a perpetual, royalty-free source or binary license. Each components has an associated set of supporting documents.	Contact your Freescale sales representative.
DSP VoIP Components	These are a suite of about 50 DSP components for the VoIP market, including data compression, voice quality enhancement, data and fax transmission, tone handling and more. Other devices supported: Digital Signal Controllers	Contact your Freescale sales representative.
DSP VoIP Frameworks	A productized VoIP application that pulls together VoIP components. The framework includes a host API for controlling the DSP application.	Contact your Freescale sales representative.
Smart DSP Operating System (SDOS)	SDOS is Freescale's optimized multicore StarCore OS. It offers highly efficient program execution with extensive functionality including an integrated network stack, a compact and lightweight kernel with real-time priority-based pre-emptable execution. It is offered royalty free to Freescale customers and offers packaged drivers along with kernel and driver source code.	freescale.com/sdos

IEEE® 802.15.4 Wireless Software Offerings

Beekit	The Freescale Beekit Wireless Connectivity Toolkit is a comprehensive package of wireless networking libraries, application templates and sample applications. The Beekit graphical user interface (GUI), part of the Beekit Wireless Connectivity Toolkit, allows users to create, modify and update various wireless networking implementations. The Beekit features include an IDE where Freescale wireless link and protocol configurations are easily managed. The kit includes support for simple media access controller (SMAC), IEEE 802.15.4 MAC, Freescale BeeStack, BeeStack Consumer (RF4CE) and Freescale SynkroRF application development and allows for simple integration of multiple Freescale architectures.	freescale.com/beekit
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i.MX Applications Processor Software Offerings

Android BSPs	The i.MX51 multimedia applications processor running Android is an excellent combination for building the perfect combination for a high-performance, low-power, cost-effective mobile device. Freescale now supports Android with a board support package (BSP) that is ready to be adapted to the i.MX51. Freescale enables our customers with integrated hardware/software solutions to realize faster time to market, and the Android platform provides a compelling and innovative end user experience to support this effort. By following a layered approach with the right selection of components to hook into the Android stack the result is a more complete and ready solution. Customers can develop applications on this integrated solution or easily modify their own drivers based on Freescale reference code. The i.MX51 Evaluation Kit (EVK) comes with reference hardware, source code, tools, test code and documentation.	Contact your Freescale sales representative.
i.MX High-Performance Multimedia Codecs	These high-performance multimedia codecs enable a series of popular audio, video and image applications using i.MX applications processors. The multimedia codecs are provided as fully-functional, product-ready software packages to support various use cases, such as audio playback, video record and image display, with codecs for H.264, H.263, MPEG-4, Windows Media Video (WMV), Windows Media Audio (WMA), Advanced Audio Encoding (AAC), and Enhanced aacPlus. Also available are imaging codecs such as JPEG, GIF, PNG and BMP. The multimedia codecs support the Windows Media Player (DShow multimedia framework) running on the Windows Embedded CE operating system, the GStreamer multimedia framework running on the Linux operating system, and OpenMAX framework for Android.	freescale.com/imxcodecs
Linux® BSPs	i.MX233, i.MX25, i.MX27, i.MX31, i.MX35, i.MX51 multimedia processors include Linux BSPs. The BSP package includes a kernel and drivers to get you started with your i.MX based design.	freescale.com/imx
Ubuntu™ BSPs	An Ubuntu Board Support Package is available for the i.MX51 evaluation kit. The BSP package includes the Linux kernel, drivers and the Ubuntu distribution. This is also available directly from ubuntu.com.	freescale.com/webapp/sps/site_prod_summary.jsp?code=MCIMX51EVKJ&fisp=1&tab=Design_Tools_Tab
Windows® Embedded CE BSPs	i.MX233, i.MX25, i.MX27, i.MX31, i.MX35, i.MX51 multimedia processors include WinCE BSPs. The BSP package includes a OEM abstraction layer (OAL) and drivers to get you started with your i.MX based design. Through the Microsoft Windows Embedded Design Acceleration Program (WEDAP) customers can receive discounted and free technical support for these BSPs.	freescale.com/files/32bit/doc/user_guide/IMXWINOBE.html

Power Architecture Automotive Controller (5xx/5xxx) Software Offerings

AUTOSAR Microcontroller Abstraction Layer	Freescale's AUTOSAR-compliant production-ready software for 16-bit S12X MCUs and 32-bit MCUs built on Power Architecture technology is a solution to the soaring amount of software content in automotive system designs and ever-tighter development deadlines. Freescale optimizes low-level software for our microcontrollers for each specific MCU family. Developing this software according to the AUTOSAR industry standard avoids the need for custom drivers, thus enabling customer cost efficiency. This makes Freescale MCUs easier to use, saves development and integration time, helps increase quality and lowers overall cost. Freescale is the only semiconductor vendor to also offer a production-ready AUTOSAR-compliant OS with a decade's worth of experience developing and delivering OSEK/VDX compliant OSs to the automotive industry. Other devices supported: 16-bit Microcontrollers	freescale.com/autosar
AUTOSAR Operating System	Freescale is the only semiconductor vendor to offer a production-ready AUTOSAR-compliant OS with a decade's worth of experience developing and delivering OSEK/VDX compliant OSs to the automotive industry. Freescale AUTOSAR OS is available for 16-bit S12X microcontrollers (MCUs) and 32-bit MCUs built on Power Architecture technology. For many MCUs the OS supports advanced safety features such as memory protection and timing protection. Other devices supported: Power Architecture Automotive Controllers (5xx/5xxx)	freescale.com/autosar
eTPU Library Suite	This suite is a collection of libraries with a variety of microcode functions for general IO functions (GPIO, PWM, UART, QOM, SM, SPI) and for controlling DC motors.	Contact your Freescale sales representative.
Linux BSPs	Freescale provides Linux BSPs for a variety of processors. These BSPs provide a complete Linux development environment for specific evaluation platforms. BSPs are generally available with complete source code and full documentation. Other devices supported: PowerQUICC Communications Processors, QorIQ Multicore Processors	freescale.com/powerbsp
MQX RTOS and Software Solutions	The Freescale MQX real-time operating system (RTOS) provides real-time performance within a small, configurable footprint. This RTOS is designed to allow you to configure and balance code size with performance requirements. The easy-to-use API and out-of-box experience ensures first-time RTOS users can start developing their application on the day software is installed. For experienced OS developers, it is easy to migrate legacy application code to a Freescale MQX-based platform. The RTOS is tightly integrated with the latest ColdFire processors from Freescale and provided with commonly used stacks and drivers for devices such as Ethernet and USB. The powerful design and development tools are integrated with CodeWarrior™ tools to provide additional profiling and debugging capability. Other devices supported: 8-bit Microcontrollers, 32-bit ColdFire Microcontrollers	freescale.com/mqx
Rapid Application Initialization and Documentation (RApID) Tools	The RApID code generation tools provide the capability to use model based engineering with industry-standard modeling, simulation and code generation tools. These engineering solutions help decrease traditional development cycle-time and cost, while improving overall system quality. The RApID ToolBox enables auto-generation of all the necessary software (i.e. initialization, device drivers, scheduler (including support for OSEK/Turbo Real Time Operating System)) to execute control algorithm(s) on any MPC55XX hardware platform.	freescale.com/webapp/sps/site/overview.jsp?nodeId=02Wcb4BA3
Self Test Software	Freescale self test software for 32-bit automotive microcontrollers built on Power Architecture technology provides software self test functionality to enable customers to faster and more easily achieve the safety demands of IEC61508 and ISO26262.	Contact your Freescale sales representative.

PowerQUICC Communications Processor Software Offerings

CommExpert	CommExpert is a powerful GUI-based toolset that speeds up and simplifies initialization, configuration and run time of the drivers and communications protocols for various data path engines driving communication on the PowerQUICC and QorIQ processors. It helps you to quickly initialize and run applications on NetComm devices so you can focus on application creation and other tasks that differentiate your end product in the marketplace. Other devices supported: QorIQ Multicore Processors	freescale.com/webapp/sps/site_prod_summary.jsp?code=MPC8540&nodeId=0162468rH3bTdGJk196465&fisp=1&tab=Design_Tools_Tab#
libcFSL	Optimized libc library for e500. The libc_fsl_e500 library contains a set of functions that utilize SPE instructions. These may be used as replacements to their ANSI C equivalents which utilize standard Power Architecture instructions. Freescale has determined that in most applications, the SPE can perform these functions with greater efficiency and speed than their ANSI C equivalent. Following is a list of the functions in this library: memcopy, memcmp, memmove, memset, strcmp, strcpy and strlen.	freescale.com/powerbsp
Linux BSPs	Freescale provides Linux BSPs for a variety of processors. These BSPs provide a complete Linux development environment for specific evaluation platforms. BSPs are generally available with complete source code and full documentation. Other devices supported: Power Architecture Controllers (5xx, 5xxx), QorIQ Multicore Processors	freescale.com/powerbsp
NetComm Software	NetComm Software (NCSW) is a comprehensive package that supplies customers with a variety of tools and software code to help develop networking solutions on supported Freescale PowerQUICC and QorIQ processor platforms. The NCSW package includes NetComm device drivers (NCDD), CommExpert tools, specific use cases and extensive documentation. Other devices supported: QorIQ Multicore Processors	freescale.com/netcommsw
QUICC Engine Microcode	QUICC Engine Microcode is customized firmware running on QUICC Engine technology. This custom code requires a comprehensive understanding of the PowerQUICC and companion QUICC Engine architecture. This code can greatly accelerate communications activities while delivering power savings when compared to conventional methods. Other devices supported: QorIQ Multicore Processors	freescale.com/netcommsw
VortiQa	VortiQa software products are production-ready, multicore-optimized software applications that build on a broad and mature suite of integrated networking and security functionality such as threat protection, firewall, IPsec-VPN, intrusion prevention systems (IPS), anti-virus and anti-spam, among others. The software addresses four specific vertical markets: enterprise equipment, service provider equipment, small business gateways and SOHO/residential equipment. Other devices supported: QorIQ Multicore Processors	freescale.com/vortiq

QorIQ Multicore Processor Software Offerings

CommExpert	CommExpert is a powerful GUI-based toolset that speeds up and simplifies initialization, configuration and run time of the drivers and communications protocols for various data path engines driving communication on the PowerQUICC and QorIQ processors. It helps you to quickly initialize and run applications on NetComm devices so you can focus on application creation and other tasks that differentiate your end product in the marketplace. Other devices supported: PowerQUICC Communications Processors	freescale.com/netcommsw
Linux BSPs	Freescale provides Linux BSPs for a variety of processors. These BSPs provide a complete Linux development environment for specific evaluation platforms. BSPs are generally available with complete source code and full documentation. Other devices supported: Power Architecture Controllers (5xx, 5xxx), PowerQUICC Communications Processors	freescale.com/powerbsp
NetComm Software	NetComm Software (NCSW) is a comprehensive package that supplies customers with a variety of tools and software code to help develop networking solutions on supported Freescale PowerQUICC and QorIQ processor platforms. The NCSW package includes NetComm device drivers (NCDD), CommExpert tools, specific use cases and extensive documentation. Other devices supported: PowerQUICC Communications Processors	freescale.com/netcommsw
QorIQ SDK	The P4080 SDK is the first in a line of enabling SDKs for the QorIQ Platform. This includes a robust Linux BSP as well as the following components: Critical DPAA enablement run-time IP, Hypervisor, Light Weight Executive (LWE), Tooling IP (including DPAA and SOC tooling, Enablement Flexibility - RTOS DPAA Direct Implementation)	Contact your Freescale sales representative.
QUICC Engine Microcode	QUICC Engine Microcode is customized firmware running on QUICC Engine technology. This custom code requires a comprehensive understanding of the PowerQUICC and companion QUICC Engine architecture. This code can greatly accelerate communications activities while delivering power savings when compared to conventional methods. Other devices supported: PowerQUICC Communications Processors	freescale.com/netcommsw
VortiQa	VortiQa software products are production-ready, multicore-optimized software applications that build on a broad and mature suite of integrated networking and security functionality such as threat protection, firewall, IPsec-VPN, intrusion prevention systems (IPS), anti-virus and anti-spam, among others. The software addresses four specific vertical markets: enterprise equipment, service provider equipment, small business gateways and SOHO/residential equipment. Other devices supported: PowerQUICC Communications Processors	freescale.com/vortiqua

Sensor Software Offerings

Sensor Toolbox	The Sensor Toolbox was developed to help customers achieve quick time to market with Freescale's sensor products. It provides development software and evaluation hardware, including interchangeable daughter cards, documentation and accessories for Freescale acceleration, pressure and touch sensors. The Sensor Toolbox also includes complimentary sensor algorithms to help developers get the most from the Freescale sensor functions such as orientation, shake, tap, freefall, motion, tilt, positioning, shock or vibration with inertial sensors, PSI conversion for gauge pressure and altimetry for absolute pressure with pressure sensors, and water level monitoring, switch replacement and touch pad implementations with touch sensors.	freescale.com/sensortoolbox
Touch-Sensing Software Suite	Touch sensing helps increase product lifetimes by eliminating the mechanical wear and tear associated with push buttons and switches. The touch-sensing software suite transforms Freescale 8-bit S08 microcontrollers into touch sensors, giving designers the flexibility to select from more than 300 Freescale 8-bit MCUs to add cost-effective touch sensing functionality to their HMI designs. Other devices supported: 8-bit Microcontrollers	freescale.com/webapp/sps/site/prod_summary.jsp?code=TSS

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