

# CodeWarrior™ Development Tools for i.MX

## Overview

In today's fast-moving markets, users demand versatile devices that can handle converging wireless productivity and multimedia applications. To fully utilize the robust features of this system-on-a-chip (SoC) technology, programmers need powerful and flexible development tools. To address this need, Freescale Semiconductor offers several Codewarrior™ development tools that fully support Freescale's i.MX1, i.MXL and i.MX21 applications processors.

## i.MX Applications Processors

Freescale's advanced i.MX family of applications processors helps you quickly harness the power of wireless, broadband, multimedia and the Internet. Designed for use in smartphones, wireless PDAs, mobile gaming, GPS systems and many other mobile wireless applications, i.MX applications processors are a leading solution in today's smartphone

environment. Based on ARM® core technology, the i.MX family is designed to offer low power consumption with real-world power performance and a high degree of integration to reduce your design time significantly.

Evolved from the best-selling DragonBall™ family of applications processors, the i.MX Family consists of the cutting-edge i.MX21, i.MX1 and i.MXL, tiered offerings for different types of handhelds and smart devices. The i.MX portfolio is a central feature of Freescale's i.Smart smartphone reference design, providing powerful performance to our Innovative Convergence™ platforms. The i.MX Family supports a broad range of industry-leading platforms such as those based on the Microsoft® Windows® CE OS, Palm OS®, Linux® OS, and Symbian OS™.

## Solutions for Freescale's Applications Processors

The latest version of CodeWarrior Development Studio has been fine-tuned to support Freescale's i.MX family of applications processors. By reducing code size by 30 percent from prior versions and offering industry-leading compile time, productivity is notably increased and system memory requirements are lowered, resulting in lower overall system cost. Developers get the essential tools they need to build, debug and deploy even the most complicated systems, targeting the ARM RISC architecture.

Freescale provides world-class embedded expertise, technologies and support for multiple architectures and operating systems, including the Linux® kernel, as well as a full spectrum of Linux board support packages (BSPs), tools, services, and follow-on support to help you manage the complete lifecycle of your embedded Linux product through hardware development, OS bring-up, software development, test and post-shipping support. Freescale's BSPs for the Linux kernel to be used with Freescale silicon are tested, certified and frozen, ensuring a fully operational tool chain, kernel and board specific modules that are ready to use together within a fixed configuration for specific hardware reference platforms.



Designed specifically for developers building embedded systems based on ARM7™ and ARM9™ devices, this powerful tool suite provides a single integrated development environment (IDE), which provides a suite of tightly integrated tools that work together to speed and simplify embedded development at every phase—from early board bring-up to application debugging and production testing. Within the IDE, the developer can take advantage of a number of CodeWarrior features built specifically for ARM embedded development, including full support for ARM instruction set architecture (ISA) and Thumb™ ISA.

**Features**

- > Graphical source-level debugger allows source or mixed mode viewing
- > Standalone/function-level/in-line assembler improves code performance
- > Linker generates ELF and DWARF 2 file formats
- > Language- and context-sensitive editor simplifies code generation
- > Award-winning IDE allows drag-and-drop editing for source code
- > Compiler generates little- or big-endian memory models
- > Class browser for C/C++ displays code a variety of ways depending on work style
- > Languages supported: Assembly, C, C++

**CodeWarrior Development Studio for ARM ISA, Linux Platform Edition**

The Linux Edition is the most comprehensive solution available to accelerate embedded Linux Development targeted to ARM processors. The Platform Edition tools offer unique features throughout all software development stages and provide the features professional embedded Linux developers need, from board bring-up capabilities through development of kernel, driver, stacks and applications. The CodeWarrior Platform Edition is an all-inclusive tool suite for Linux development. Hosted on Linux OS, this suite of tools gives you the ability to deploy and debug a Linux kernel, in addition to creating Linux applications. You can simultaneously debug an application process while using a JTAG connection to debug the kernel—all with source code views and visibility into the memory translations associated with the Linux OS. The Flash Programmer and Board Diagnostics functionality integrated into the development environment, while giving you the ability to use a source code debugger for the boot loader, is unique to CodeWarrior.

**Key Features**

- > GNU C++ Compiler (GCC)
- > Kernel command line parameter support
- > Thread awareness for fine-grained debug capability
- > Memory translation support
- > Loadable module support

**Linux Board Support Package (BSPs) for Freescale Silicon**

The fast pace of consumer electronics demands a solution which is known to work out of the box so that you can reach market in the shortest time possible. This BSP combined with Freescale tools provides the foundation you need to begin your project quickly. All Freescale Linux BSPs include:

- > Linux kernel and device drivers
- > Applications/Services
- > Libraries
- > GNU Tools (compilers, linkers, etc.)
- > Deployment mechanisms

A Platform Creation Suite (PCS)-compatible BSP provides full integration with Freescale's Platform Creation Suite to facilitate quick customization of the Linux kernel. This tool supports the i.MX21 multimedia applications processor, an industry-leading platform for world-class wireless applications and portable consumer electronics devices.

**Learn More:** For more information about Freescale products, please visit [www.freescale.com](http://www.freescale.com).

**CodeWarrior**



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