Wireless Developer Network

Development Tools
Freescale Wireless Partners
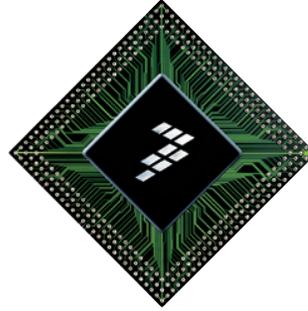
freescale
semiconductor

Table of Contents

For more information about the
Freescale Wireless Developer Network,
visit **www.freescale.com/fwdn**.

Introduction

Freescale's processor portfolio is making the world a smarter place. Our partners' tools are an integral part of what you need to build platforms and applications for a diverse mix of industries. These tools add depth to Freescale's comprehensive portfolio of fully integrated platforms and components for cellular, mobile consumer and converged devices.

The partners in this brochure have all developed tools to help you differentiate your products, add valuable applications, get to market quickly and enrich your customers' mobile experience. Each partner is a member of the Freescale Wireless Developer Network, which helps developers make their services available to customers who want to take advantage of our broad wireless and mobile portfolio.

Our partners' toolsets cover a wide range of Freescale wireless and mobile processors, including:

- **68K/ColdFire® processors**—Aggressive pricing and performance are in high demand, which is why we engineered the 68K ColdFire family of embedded processors. This natural extension of our 8- and 16-bit portfolio gives you the freedom to design with power, control and flexibility—cost effectively.

- **ARM® processors**—Freescale's processors based on ARM core technology offer low component count, long battery life and exceptional performance. From multimedia entertainment to file sharing, our i.MX family of applications processors delivers. With i.MX, rich multimedia experiences spring to life. Plus, i.MX's renowned integration can help you speed through development.

- **Mobile eXtreme Convergence (MXC)**—Freescale's MXC architecture represents a radical simplification for smart wireless devices. MXC separates the two main domains of a cell phone: a modem core that communicates with the base station, and an applications core that powers the user experience. This clean separation lets designers create new applications as quickly as they need to without touching the modem core, reducing development costs and speeding time to market by as much as six months.

- **Digital signal processors**—Tech-savvy consumers are demanding high-quality voice, video and data services everywhere they go. Our DSP products include the Symphony™ family of audio processors, designed to meet the demands of audio electronics system designers by integrating audio peripherals and by supporting the latest generation decoders. The broad DSP56300 family is based on the DSP56300 core, a design integrating advanced features that dramatically boost performance, simplify system design and drive system costs down.

IDE/Tool Chains

RealView® Tools by ARM®
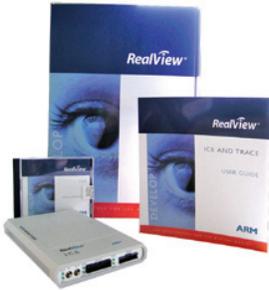
For further information on the RealView Development Suite and to order an evaluation copy go to **www.arm.com/RealView**.

ARM®

RealView Development Suite

The ARM® RealView® Development Suite is a complete, end-to-end solution for software development that supports all ARM processor-based Freescale wireless and mobile silicon. RealView tools offer the highest-performance ARM C/C++ compilers and support the most advanced debug technology available today for bringing up the latest SoC and ASIC designs.

Thousands of customers trust ARM's powerful, proven RealView development tools to deliver the highest return for the lowest risk on their ARM-based ASIC, SoC and FPGA designs. Today, the majority of the four billion ARM Powered® devices worldwide have software created with RealView tools. Investing in the RealView solution is the clear choice for a safe, reliable and high-performance design.

RealView Development Suite contains the following components:

- **Integrated Development Environment (IDE)**—RealView Development Suite includes the open-source Eclipse Integrated Development Environment. This integration combines Eclipse's outstanding source code development tools and plug-in framework with the ARM best-in-class compilation and debug technology. The Eclipse integration provides project stationery to optimally configure the tools for specific ARM processors and development boards.

- **Compilation Tools**—The compilation tools in RealView Development Suite are recognized by the industry as providing the best performance of all available ARM processor-targeted compilers. Developed and tuned to deliver the tightest code density, the compilers produce significantly smaller executables than other leading tool suites. The compilers generate optimized code for the 32-bit ARM and 16-bit Thumb® and Thumb-2 instruction sets and support full ISO standard C and C++.

    RealView Development Suite provides unprecedented ease-of-use for customers seeking interoperability between RealView and GNU toolchains that are compatible with the Application Binary Interface (ABI) for the ARM architecture, allowing flexible deployment of open-source and commercially supported tools throughout software development teams.

- **Debug Tools**—Designed from the ground up to support complex single and multi-core SoC software development with embedded OS, the debugger in RealView Development Suite sets the standard for creating and debugging deeply embedded applications on Freescale wireless and mobile silicon.

    The debugger in RealView Development Suite provides extensive non-intrusive trace and profiling support, allowing developers to deliver optimal code tuned to their Freescale wireless and mobile silicon with utmost confidence.

Corelis, Inc.

CORELIS

Corelis ScanExpress Boundary-Scan Test and Programming System

Corelis offers a wide variety of ScanExpress™ boundary-scan software and hardware products. Software tools include automatic boundary-scan test program generation, boundary-scan diagnostics, interactive boundary-scan debugging, in-system programming of Flash memories, serial PROMs, CPLDs, FPGAs and other programmable devices. Hardware products are available to support a variety of platforms such as PCI, USB 2.0, LAN, PC Card, PIO, PXI/cPCI and VXI.

ScanExpress is also capable of executing boundary-scan tests and various in-system programming (ISP) files from third party applications using DLLs or a command line interface. Drivers for the popular National Instruments LabWindows/CVI, LabView and Agilent VEE test environments are provided.

While it is obvious that boundary-scan testing can be used in the production phase of a product, new developments and applications of the IEEE® 1149.1 standard have allowed the use of boundary-scan in many other product life-cycle phases. Specifically, boundary-scan technology is now applicable in product design, prototype debugging, field service and installation. This means the cost of the boundary-scan tools can be amortized over the entire product life-cycle, not just the production phase.

To facilitate this product life-cycle concept, Corelis offers an integrated family of software and hardware solutions for all phases of a product's life-cycle. All of these products are compatible with each other, which protects the user's investment.

For more information about Corelis products, please visit **www.corelis.com** or email Corelis at **sales@corelis.com**.
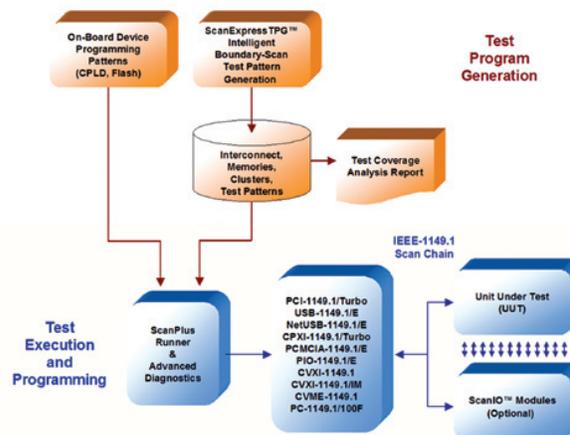
Freescale and Corelis

Corelis has been a Freescale Alliance Member since 2003 and has partnered with Freescale to provide high-performance, state-of-the-art tools for boundary-scan, JTAG emulation and bus analysis. Corelis provides Freescale customers with innovative tools that enhance the development of products based on Freescale architecture.

Corelis' complete line of software and hardware products combines exceptional ease-of-use with advanced technical innovation. Their ScanPlus and ScanExpress Boundary-Scan systems are used for interconnect testing as well as in-system programming of Flash memories, CPLDs and FPGAs. JTAG emulation and debugging tools as well as a variety of analyzer tools such as the CAS-1000-I2C™, an advanced, powerful controller used in the testing of devices and systems incorporating one or more I^{2}C buses, are also offered. Corelis has recently announced several new products including their high-performance, state-of-the-art ScanExpress Programmer and ScanExpress JET.

Corelis, Inc., founded in 1991, is a world-class hardware and software tools vendor. Its forte lies in designing tools that help OEM developers and manufacturers get their products to market faster, with higher quality and at lower cost.

Domain Technologies

BoxView IDE: Embedded Processor Development

BoxView Integrated Development Environment (IDE) features Domain Technologies' embedded processor target debugger as part of the Eclipse software development environment. Eclipse is an open, industry-supported, extensible software development platform. Programmers can create, test and debug applications with fast data access and extensive display capabilities. A typical debugging environment consists of the BoxView IDE running on a host, the host connected to any Domain Technologies emulator, and the emulator connected to the target embedded processor. BoxView IDE provides a target simulator to use when the target is not available for testing.

BoxView IDE features:

- Project management: Project dependencies, file compile options, timesaving edits, CVS/SVN

- Project debugger: Standard Eclipse project windows, multiple data views, fast data access, graphical plots, code windows, hardware breakpoint dialog, formatted memory windows, peripheral registers window (user-configurable), command window with user-configurable buttons and function keys

- Compiler/linker: Freescale DSP 56K tool chain

- Debug connectivity options are scalable and flexible for single user, single DSP or multiple users, multiple DSPs with convenient access through direct connection or remote TCP/IP connection

Project Management

BoxView IDE's project manager supports individual compile options for each file. In addition, workspace options define project dependencies, removing the need for manual management of file builds. BoxView IDE's editor provides timesaving editing features such as type ahead for structures and automatic code indentation for a readable, formatted code view; compiler errors are displayed in a separate window and graphically linked to the corresponding line of code. BoxView IDE contains support for the Concurrent Versions System (CVS) as well as Subversion (SVN), so projects can reside in a CVS or SVN repository.

Project Debugging

For each debug session, information is controlled and organized by interacting with the embedded processor target through monitoring software or on-chip hardware circuitry. Many graphical views are supplied to facilitate control of your embedded processor testing. The code window displays a program in source, assembler or mixed mode. The active program's source code window affects the display in the debug code window. The current program counter, associated assembler instructions, and defined breakpoints are visible. A command window supports the use of over 140 commands. Also available are multiple graph windows for memory content with user control of vertical axis, scale, and optional interleaved waveforms. BoxView IDE supports Freescale Symphony DSPs.

Freescale and Domain Technologies

Domain Technologies, incorporated in 1991, offers over 15 years of experience in the field of emulation and debug tools for a wide variety of industry-standard and proprietary 8-, 16-, 24- and 32-bit microcontroller, RISC and DSP architectures. Domain is committed to improving the efficiency of embedded software development.

Domain's products promote cost reduction through time to market savings. BoxView IDE is an Eclipse-based, open, industry-supported extensible software development environment which provides a compiler, linker, source code project manager, editors and Domain's DSP target debugger. The USB-EMU and SB-USB2, our JTAG/OnCE emulators, offer efficient and convenient emulation for the Freescale Symphony DSP family.

For more information, visit
www.domaintec.com/BoxViewIDEDSP.html.

Green Hills Software

MULTI Integrated Development Environment and Optimizing Compilers for i.MX

Green Hills Software's MULTI integrated development environment (IDE) and optimizing compilers present the industry's most powerful and proven tools for developing embedded software with maximum reliability, maximum performance and minimum code size.

For more information, visit **www.ghs.com**.

Efficiently Develop Code

- **Create projects quickly**—Use the Project Builder's intuitive GUI or your own makefiles

- **Edit source code efficiently**—Use the Source Code Editor or your favorite third-party editors

- **Simulate hardware for cost-effectiveness**—The easy-to-use Instruction Set Simulator simulates your embedded platform

- Develop for many operating systems or bare boards including INTEGRITY RTOS, velOSity RTOS, u-velOSity microkernel, Express Logic's ThreadX RTOS, Linux (embedded or self-hosted), VxWorks, OSE, Windows® and Solaris™

- **Develop across many hosts**—Windows, Linux, Solaris, HP-UX

- **Develop in many languages**—C, C++, and FORTRAN (and Ada 95 with Green Hills Software's AdaMULTI IDE)

- Leverage third-party tools such as Eclipse, editors, SCM and many more

Dramatically Reduce Debugging Time

- Improve reliability with run-time error checking

- Debug easily with the cross-reference debugger

- Facilitate debugging with browser for classes and calls

- View memory for faster debugging with a variety of tools for displaying memory "snapshots"

- Debug multiple processors seamlessly on one or many homogenous and heterogeneous processors

Optimize for Fast Performance and Small Size

- Analyze performance for greater product speed with the Performance Analyzer

- Analyze code coverage to boost reliability with the Code Coverage Analysis Utility

Compatibility and Reliability

Green Hills compilers support a wide range of C/C++ variations. Our compilers are validated for full conformance to C and C++ standards with thousands of tests, including Perennial Validations test and Plum Hall Validation Test Suites test for ANSI C conformance. Over 80,000 additional tests are gathered from other commercial sources and partners, and contracted or written by Green Hills Software. Automated regression tests ensure that Green Hills Software compilers never sacrifice correctness for optimization.

Freescale and Green Hills

For i.MX applications processors, world-class Green Hills compilers consistently outperform competing compilers in certified results on industry standard benchmarks such as those published by Embedded Microprocessor Benchmark Consortium (EEMBC). By applying hundreds of advanced optimization strategies, the Green Hills compilers can significantly increase program execution speed and decrease program size for i.MX. The Target-Specific Optimizer applies additional silicon optimizations for the ARM core on the i.MX family, such as peephole optimizations and multiple issue instruction pipeline scheduling.

IAR Systems

IAR YellowSuite

IAR YellowSuite is not just a set of development tools, but a purpose-designed suite that promotes the most natural design flow—building in efficiency, code integrity and flexibility right from the beginning of a design project. Just as importantly, all the components in the suite are designed to work optimally together to produce the perfect result for Freescale customers. The tools operate on an open systems basis, allowing the user the freedom to choose the additional development tools they need, whether from IAR Systems or from its third-party vendors for their Freescale i.MX ARM9™ or ARM11™ designs.

At the heart of IAR YellowSuite is IAR Embedded Workbench, the company's flagship C/C++ compiler, which is available for Freescale ARM and ColdFire microcontrollers. Integral to IAR Embedded Workbench is the C-SPY debugging tool, for testing of code using either a simulator or a hardware debug probe such as IAR J-Link or IAR J-Trace.

Using the combination of visualSTATE and IAR PowerPac with IAR Embedded Workbench allows the developer to increase the feature richness and code quality of an application while reducing implementation complexity and improving maintainability.

visualSTATE is an ideal graphical development tool to use for demanding event-driven embedded applications. visualSTATE generates optimized ANSI C code from state machine designs based on UML. It provides advanced verification and validation utilities and generates very compact C/C++ code that is 100% consistent with your system design.

IAR PowerPac is an integrated middleware family that combines a small memory footprint RTOS and a versatile file system for Freescale i.MX1, i.MX21 and i.MX27 applications processors.

IAR Systems tools have always been popular with developers because of their ease of use, code optimizations, which allows for faster time to market and accuracy in the design.

Freescale and IAR Systems

IAR Systems is a Freescale Third-Party Development Tools Partner. We collaborate with Freescale by providing the most efficient development solutions primarily for ARM processors and ColdFire MCUs. We supply embedded development tools including C/C++ compilers, debuggers, RTOS and middleware components.

For more information, visit **www.iar.com**.

Lauterbach Datentechnik GmbH

TRACE32-ICD PowerTools

Unlike other tools, the TRACE32 debuggers have a long history and best meet the needs of the embedded market because many features were integrated based on the requirements of experienced developers and engineers both from the customer side and from Lauterbach. TRACE32 features include:

- Supports most host operating systems such as Windows, Linux, Unix and SUN
- Powerful script language to adapt the GUI and start-up for different projects and to run automated tests
- Very fast downloads to RAM and Flash by USB or Ethernet
- Intuitive assembler and HLL debugging
- Interface to all standard compiler formats
- On-chip program and read/write breakpoints, including range breakpoints
- Ability to set a unlimited number of software breakpoints in Flash
- Customizable display of special function registers and on-chip peripherals
- Fastest real-time ETM-traces on market (more than 500 MHz)
- Sophisticated trace filters and triggers
- Code coverage analysis, full performance analysis of applications including function-runtimes, task switches and call trees
- RTOS support for common and proprietary operating systems
- Integrated run- and stop-mode debugging for Linux
- Optional integration of the economically priced Logic Analyzer PowerIntegrator

Freescale and Lauterbach

Thanks to the high level of cooperation and information exchange between Lauterbach and Freescale, the TRACE32 debug environment provides class-leading debug support for Freescale processors such as i.MX31 applications processors and DSPs.

With over 25 years of experience, Lauterbach produces the industry's most advanced embedded development tools. A highly qualified workforce, comprised of 80 percent hardware and software engineers, enables Lauterbach to deliver debugging solutions at the edge of technical feasibility. Because TRACE32 PowerTools focus on the requirements of the embedded development community, they are a favorite choice. More than 50,000 development seats are equipped with these debuggers.
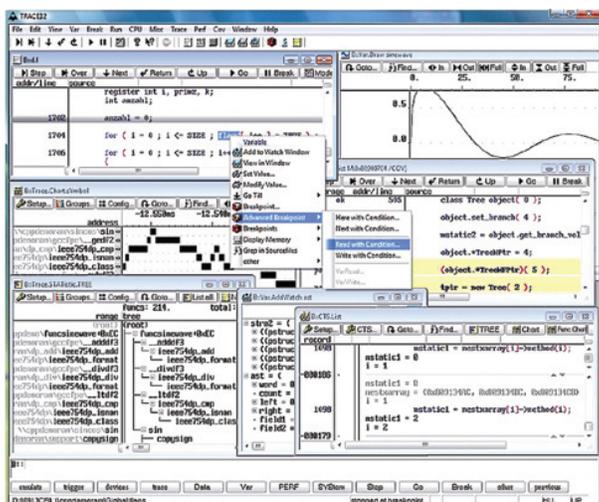
For more information, visit **www.lauterbach.com**.

Microcross, Inc.

Visual X-Tools™ Integrated Development Environment (IDE)

- Powered by SlickEdit®, the award-winning editor
- Seamless operation with i.MX GNU X-Tools™ on Windows/Linux
- Project wizards for automated makefiles
- DIFFzilla™ file and source tree differencing tool
- Integrates the Visual GDB source level debugger

With Microcross Visual X-Tools™ IDE professional embedded development tools, you get everything you need to efficiently code, build and debug software for embedded systems. Visual X-Tools provides a fully integrated single window-style interface and build solution that is powered by the best-in-class, triple award-winning SlickEdit and i.MX GNU X-Tools.

Visual X-Tools features a project manager and code editor with syntax coloring, symbol lookup, code navigation, context tagging, search and replace, C/C++ source beautification, file/source-tree differencing (DIFFzilla), seven keyboard emulations, version control interface, and a source build environment to compile, link and execute programs in a simulator or on the target processor through the Visual GDB debugger and a BDM/JTAG connection agent.

Visual X-Tools can build proprietary and open source RTOS/OS kernels, drivers, libraries and user applications. No matter what the challenge, with Visual X-Tools you can build anything needed for your target embedded system. Throughout every phase of development, Microcross is committed to being your total resource for embedded tools and solutions.

Microcross Visual X-Tools is the affordable, price leader for embedded development tools—open-source, ready-to-run.

Features

- Super editor
- Symbol lookup
- Code navigation
- Argument completion
- C/C++ code beautification

- File/source-tree differencing
- Powerful search-and-replace utility
- Version control interface
- Keystroke emulations
- Special editor views

Benefits

The benefits are improved user productivity by at least 30 percent over command line, non-visual build systems. Through the use of target specific project wizards, integrated debugger, and commercial support from Microcross, a development team is assured success with minimal interruption in workflow. Furthermore, the migration of legacy code to other processors can be done with minimal code changes—thus maximizing your investment into a product that you learn once and can apply to almost any embedded development project.

Freescale and Microcross

Microcross Visual X-Tools supports Freescale's i.MXL, i.MX21, i.MX27 and i.MX31 applications processors. Linux and Windows are supported hosts.

Partner of the Year
Wireless Developer Network

freescale semiconductor

For more information, visit **www.microcross.com**.

Wind River Systems

WIND RIVER

Wind River Workbench, On-Chip Debugging Edition

The introduction of 32-bit and 64-bit processor technologies has created new challenges that require an innovative approach to JTAG debug and analysis. Wind River offers the industry one of the leading Eclipse-based development environments for on-chip debugging that takes you from early hardware bring-up to test and manufacturing. The advanced hardware diagnostics and patent-pending multicore debugging capabilities of Workbench help you unlock the power of today's advanced microprocessor technology. Wind River Workbench On-Chip Debugging software is based on the industry-standard Eclipse framework, providing the industry an integrated JTAG debugging environment that can be easily extended through in-house, third-party, open-source or commercially available Eclipse plug-ins.

Key Features

- Eclipse-based JTAG debugging solution reduces development costs and extends easily with third-party or open-source tool integration
- Centralized project-oriented environment simplifies end-to-end debugging
- Advanced editing capabilities reduce the complexity of the edit-compile-debug cycle
- Connection and configuration management streamlines connections to multiple targets
- Industry-leading features support debug of an entire system from a single console
- Flexible Flash programming enables fast download of images to target Flash
- Internally and externally buffered trace enables debugging of complex and intermittent code defects
- Patent-pending multicore technology debugs even the most complex 32-bit and 64-bit multicore processors
- Solution includes a wide range of processor and operating system support
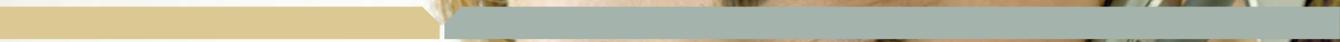
Freescale and Wind River Systems

Wind River Systems is an alliance partner to Freescale and supports PowerPC, ARM and ColdFire architectures with our commercial-grade run-times, tools, services and expanding into device management. Wind River is a Platinum Global Sponsor of all worldwide Freescale Technology Forum events for 2007.

2007 **Platinum**
Global Sponsor

For more information, visit
www.windriver.com/products/OCD/
or call us at **1-800-545-9463**.

Commercially
Supported GNU

Microcross, Inc.

i.MX GNU X-Tools™

Developers around the world have come to trust GNU tools for their quality, performance, and consistent interface across multiple target CPUs. Today, Microcross offers a wide coverage of reliable, low cost and supported open source embedded tools.

Why i.MX GNU X-Tools™—isn't GNU free?

- Value, performance and reliability: eliminate 'GNU this', 'GNU that' distributed from non-supporting vendors.
- Microcross builds and validates the i.MX GNU X-Tools from one consolidated source tree.
- Microcross patches the bugs and performs benchmark testing using the latest industry techniques.
- Microcross documents include a user guide (in print), a training guide (in print) and 12 GNU manuals (in PDF).

Microcross is keeping up with the latest stable GNU releases, so customers can continue to get updates and stay current; this enables developers to stay focused on the project at hand rather than worrying about tool updates.

i.MX GNU X-Tools Features

- C / C++ cross-compilers
- Unrestricted Newlib C run-time library
- GNU C++ class library
- GNU assembler and binary utilities
- Visual GDB source level debugger
- Instruction set simulator to simulate i.MX hardware on an x86 machine

Freescale and Microcross

Microcross GNU X-Tools supports Freescale's i.MXL, i.MX21, i.MX27 and i.MX31 applications processors. Linux and Windows are supported hosts.

Microcross is the leading international distributor of open-source embedded development tools based on GNU technology. Microcross is making embedded systems easier to program by providing full-featured, open-source development tools that are validated and documented, so customers can affordably accelerate their development. Microcross enables customers to confidently develop and run software in embedded systems faster, more reliably and at a lower cost. Microcross' professional embedded tools solution tightly integrates a rich set of leading real-time operating systems and its own brand of embedded Linux to meet the needs of customers producing embedded devices and smart technology.

For more information, visit **www.microcross.com**.

Emulators/Probes
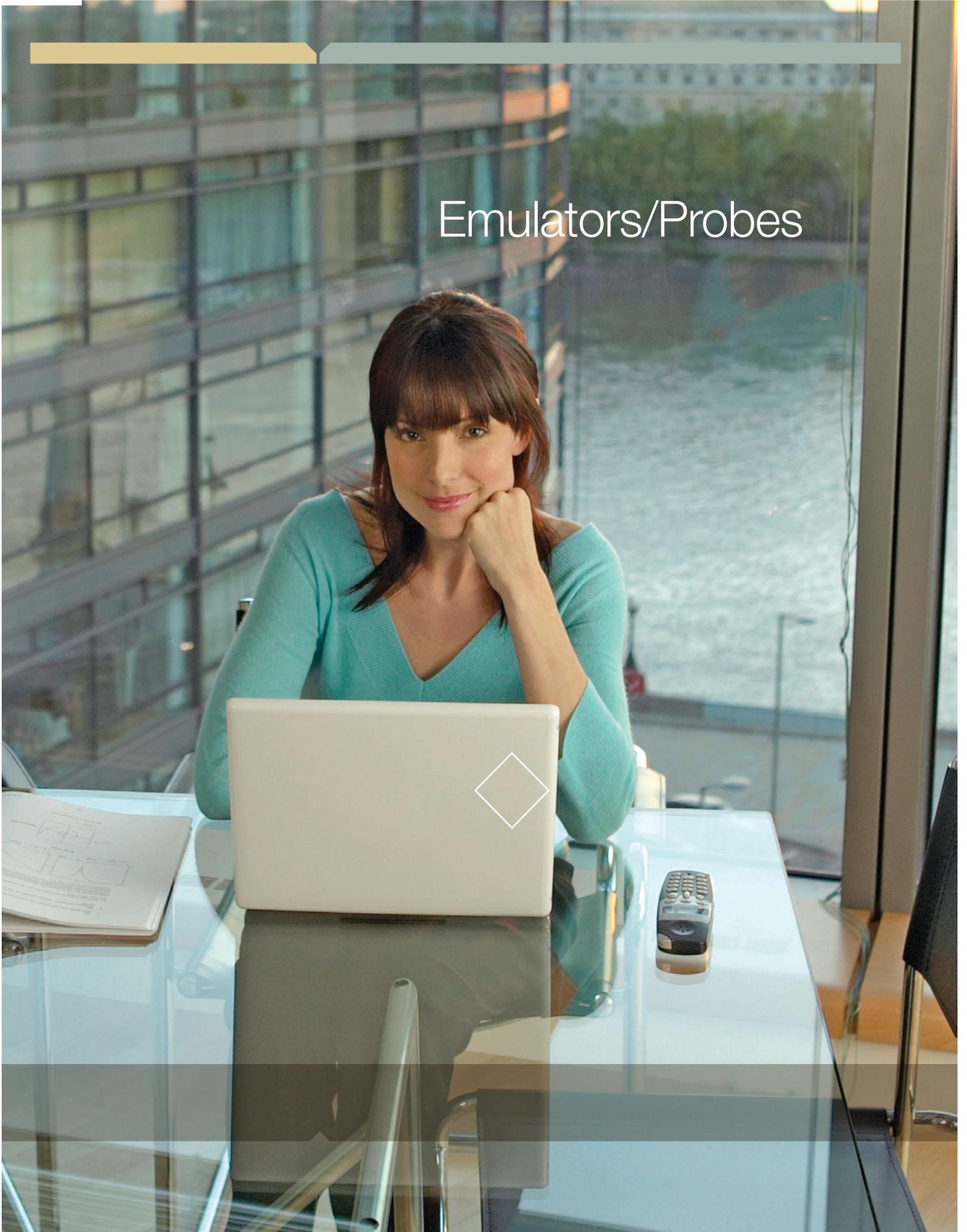
ARM

RealView ICE and RealView Trace

RealView ICE

The RealView ICE run control unit is the ARM leading-edge software debug hardware that enables the RealView Development Suite debug software to connect to and control Freescale wireless and mobile silicon. The RealView ICE unit delivers the performance required by today's developers of embedded system software on Freescale wireless and mobile silicon.

The RealView ICE unit is an essential tool in an ARM system debug environment for connection and access to devices that contain the EmbeddedICE® logic, Embedded Trace Macrocell™ (ETM™) and Embedded Trace Buffer™ (ETB™) components for on-chip trace data storage. The unit has the ability to be expanded with additional modules for extended functionality, such as the RealView Trace module for trace data capture.

The RealView ICE unit can also be used with the open-source Eclipse Integrated Development Environment and the GNU debugger, gdb, to provide a single JTAG connection for both kernel and application debug for Linux and other similar operating system environments.

Key Features

- High-performance debug control, with code download up to 1300 kbps and high-speed single-stepping—up to 100 steps/sec
- Support for variable JTAG clock frequencies, 2 kHz to 20 MHz or 50 MHz (LVDS); very low JTAG clock frequencies (sub-1kHz) support ASIC-emulation environments
- Support for Embedded Trace Macrocell (ETM) and Embedded Trace Buffer (ETB)
- USB 1.1 and 2.0 compatible connection (Windows platform only)
- Ethernet 10/100baseT remote and local host connection
- GDB-Eclipse plug-in for simplified connection and debug with the GNU debugger
- Host platforms: Windows and Linux

RealView Trace

The RealView Trace module, an optional expansion module for the RealView ICE run control unit, provides the off-chip trace data capture capability for the Embedded Trace Macrocell components. The RealView Trace module enables non-invasive, real-time tracing of instruction execution and data transactions when used in conjunction with the debugger in RealView Development Suite. Trace capture conditions may be defined using a set of powerful trigger conditions in the debugger. Once trace capture has occurred, the debugger provides multiple display options to quickly hone in on code hotspots or bugs. Captured trace data may be used to provide an execution profile, enabling developers to quickly analyze critical code sections such as boot time, interrupt latency and task switching overhead.

Key Features

- Trace clock speeds up to 250 MHz; half-rate clocking up to 125 MHz
- Non-invasive, real-time tracing of instructions and data
- 4/8/16 bit data width trace port
- Supports ETM7™, ETM9™ and ETM11™ protocols
- ETM trace port modes supported
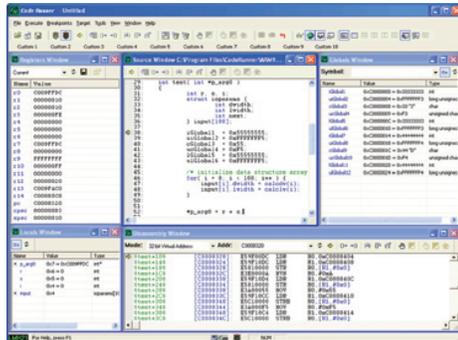- Supports Windows XP platform

For further information,
go to **www.arm.com/RealView**.

CORELIS

Corelis, Inc.

Corelis Analyzers and JTAG Emulators

For more information, visit **www.corelis.com** or email Corelis at **sales@corelis.com**.

Corelis Analyzers

Corelis, Inc. offers a wide variety of analyzer tools such as the CAS-1000-I2C™, an advanced, powerful controller used in the testing of devices and systems incorporating one or more I^2C buses. The CAS-1000-I2C enables full validation of bus specification compliance, passive monitoring, logging, and protocol confirmation of bus traffic, and driving communications to/ from the target bus. This includes emulating one or more programmed virtual device nodes of various types.

Corelis also offers a USB Analyzer line which allows non-intrusive high speed USB 2.0 protocol analysis and allows you to display the bus states and the packets sent. Highlights include:

- Compatible with all USB 2.0 speeds
- Automatic discovery of the link under test speed
- Measurement of USB bus states and protocols
- Affordable pricing scheme allowing you to provide one unit per developer
- Non-intrusive analysis
- Small and robust enclosure, powered by the USB bus
- Scalable hardware design
- Display of transactions and transfer layers
- High-level decoding of standard requests and descriptors
- Free viewer software

Corelis JTAG Emulators

Corelis' innovative JTAG in-circuit emulators provide a real-time, non-intrusive development and debug environment for the i.MX family of processors using their enhanced industry-standard IEEE-1149.1 (JTAG) boundary-scan test port. This interface allows for a simple, yet robust, interface to the target processor. A processor's on-chip boundary-scan logic also allows complete, non-intrusive CPU resource access through the JTAG port, even when the application 'hangs' or otherwise runs out of control. The emulator/debugger communicates with the target exclusive of serial ports or other peripheral resources, and no ROM-based debugger or loader program is required. Corelis JTAG emulators are available with USB 2.0 and Ethernet interfaces to give you flexibility in designing your host and target environment. The portable USB-1149.1/E™ controller plugs into a USB port on the computer and provides full debugging capability without additional hardware installation on the host PC. The NetUSB-1149.1™ controller is a stand-alone unit which is connected either to a 10/100 Base-T Ethernet LAN or USB port and is hooked up to the target board.

Freescale and Corelis, Inc.

Corelis has been a Freescale Alliance Member since 2003 and has partnered with Freescale to provide high-performance, state-of-the-art tools for Boundary-Scan, JTAG Emulation and Bus Analysis. Corelis provides Freescale customers with innovative tools that enhance the development of products based on Freescale architecture. Corelis, Inc., founded in 1991, is a world-class hardware and software tools vendor. Its forte lies in designing tools that help OEM developers and manufacturers get their products to market faster, with higher quality and at lower cost.

Domain Technologies

SB-USB2 and USB-EMU JTAG/OnCE Emulators

SB-USB2: High Performance JTAG/OnCE Emulator

The SB-USB2 emulator enables efficient and productive embedded software debugging for Freescale Symphony DSPs. Both compact and portable, the SB-USB2 utilizes the JTAG and/or On-Chip Emulation (OnCE) protocols. This versatile probe supports several connector configurations: two JTAG connections; two OnCE connections; or an individual JTAG and OnCE connection. In addition, the SB-USB2 supplies benchmark timers and an 18-channel, 40 MHz logic analyzer.

SB-USB2 Key Features

- USB port powered
- JTAG TAP debug support
- JTAG boundary scan support

- Logic levels: 3.3V, 2.5V, 1.8V
- TCK: 32 kHz-10 MHz
- Supplies max of 300 mA

The SB-USB2 probe is powered by the USB connection, making it ideal for notebook computers or lab environments. In addition, it can detect whether or not the device has power, and can also supply up to 200 mA of power to the target device. The emulator provides benchmark timers: for the OnCE connection, the negative pulse coming over DSO stops the timer; for the JTAG connection, the -DE signal stops the timer.

USB-EMU: JTAG/OnCE Emulator

The USB-EMU emulator enables efficient and productive embedded software debugging for Freescale Symphony DSPs. Both compact and portable, it uses the JTAG and OnCE protocols, promoting debug flexibility and convenience.

When used with Domain Technologies' debugger, the USB-EMU provides access to the JTAG device's boundary scan functionality (BSDL file required). Boundary scan operations enable non-intrusive monitoring of the target device pins, even while the target device is executing its own application code. The USB-EMU emulator can program external flash memory devices also.
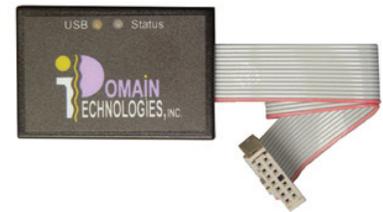
USB-EMU Key Features

- JTAG TAP debug support for standard JTAG test access port devices

- Freescale on-chip emulation (OnCE) support

The USB-EMU probe is powered by the USB connection, making it ideal for use by notebook computers or lab environments. The USB-EMU can detect whether or not the device has power; in addition, it can also supply up to 300mA of power to the device.

Freescale and Domain Technologies

Domain's products promote cost reduction through time to market savings. BoxView IDE is an Eclipse based, open, industry supported, extensible software development environment which provides a compiler, linker, source code project manager, editors, and Domain's DSP target debugger. The USB-EMU and SBUSB2, our JTAG/OnCE emulators, offer efficient and convenient emulation for the Freescale Symphony DSP family.

For more information, visit
www.domaintec.com/BoxViewIDEDSP.html.

Green Hills
• S O F T W A R E , I N C . •

For more information, **visit www.ghs.com**.

Green Hills Software

Green Hills Hardware Probes

SuperTrace Probe

With its 1 gigabyte of storage capability, the SuperTrace™ Probe can easily collect hundreds of millions of trace frames from the i.MX, radically extending the capture window to help you find more bugs faster and more easily than ever. Conventional trace hardware only offers a small fraction of this depth, limiting visibility to brief execution segments. To collect these segments, developers must use carefully-defined triggers that are time-consuming and tedious to devise.

- Trace capabilities/analysis
- SuperTrace™ Probe Datasheet (PDF)
- Source-level debugging
- Captures 1 gigabyte of trace data
- Virtual memory support
- High speed download
- Multiple target support

Green Hills Probe

The Green Hills Probe™ marks a dramatic advance in debug technology for i.MX applications processors. With many debugger functions handled by an on-board 32-bit processor and reconfigurable logic, Green Hills Software has succeeded in offloading much of the debugger's functionality onto faster, dedicated hardware. Features include:

- Easy configuration and setup
- Built-in hardware diagnostics
- Flexible host interfaces
- Source-level debugging
- High speed download
- Local intelligence
- OCD/JTAG target control
- Flash programming

Slingshot

Green Hills Software's Slingshot™ is an advanced USB hardware debug device that enables the MULTI® Debugger to load, control, debug and test an i.MX system without the need for prior board initialization, an RTOS or even a ROM monitor.

- Easy to use
- High performance
- Small size
- Full integration with MULTI IDE
- USB-powered
- Low cost

About Green Hills Software

For 25 years, Green Hills Software has supplied software tools, real-time operating systems and networking stacks to Freescale customers on Power Architecture, 68K, ColdFire, StarCore, MCore and i.MX processors. Our diverse mutual customers produce the most technologically advanced products in the embedded industry and number in the hundreds, including HP, Ford, Lucent, GE Security and Boeing.

Lauterbach Datentechnik GmbH

LAUTERBACH

TRACE32-ICD PowerTools

Unlike other tools, the TRACE32 debuggers have a long history and best meet the needs of the embedded market because many features were integrated based on the requirements of experienced developers and engineers both from the customer side and from Lauterbach. TRACE32 features include:

For more information, visit **www.lauterbach.com**.

- Supports most host operating systems such as Windows, Linux, Unix and SUN

- Powerful script language to adapt the GUI and start-up for different projects and to run automated tests

- Very fast downloads to RAM and Flash by USB or Ethernet

- Intuitive assembler and HLL debugging

- Interface to all standard compiler formats

- On-chip program and read/write breakpoints, including range breakpoints

- Ability to set a unlimited number of software breakpoints in Flash

- Customizable display of special function registers and on-chip peripherals

- Fastest real-time ETM-traces on market (more than 500 MHz)

- Sophisticated trace filters and triggers

- Code coverage analysis, full performance analysis of applications including function-runtimes, task switches and call trees

- RTOS support for common and proprietary operating systems

- Integrated run- and stop-mode debugging for Linux

- Optional integration of the economically priced Logic Analyzer PowerIntegrator

Freescale and Lauterbach

Thanks to the high level of cooperation and information exchange between Lauterbach and Freescale, the TRACE32 debug environment provides class-leading debug support for Freescale processors such as i.MX31 applications processors and DSPs.

With over 25 years of experience, Lauterbach produces the industry's most advanced embedded development tools. A highly qualified workforce, comprised of 80percent hardware and software engineers, enables Lauterbach to deliver debugging solutions at the edge of technical feasibility. Because TRACE32 PowerTools have a focus on the requirements of the embedded development community, they are a favorite choice. More than 50,000 development seats are equipped with these debuggers.

Macraigor Systems

Complete JTAG Debug Support

Macraigor Systems, LLC

mpDemon and usb²Demon

mpDemon

The mpDemon is a stand-alone, networked device that provides Ethernet, serial or parallel connection from a Windows or Linux host machine to the JTAG/BDM debug facilities provided on Freescale embedded processors. The mpDemon is Macraigor's fastest interface device, providing very fast download and programming speeds. The mpDemon has built-in support for the gdb remote protocol, allowing it to interface to any version of gdb via the network.

Macraigor offers a number of software tools for use with the mpDemon. These tools include a free Eclipse/GNU integrated development environment that provides an editor, compiler, debugger and code management facilities, all packaged within the Eclipse framework. This free, downloadable package includes example Eclipse projects for most standard Freescale evaluation boards, allowing the user to very quickly get up and running with Eclipse and to actually download code and debug it on the target hardware using the mpDemon.

usb²Demon

The usb²Demon provides a high-speed USB 2.0 connection from a Windows or Linux host machine to the JTAG/BDM debug facilities provided on Freescale embedded processors. Macraigor also offers a number of software tools for use with the usb²Demon. These tools include a free Eclipse/GNU integrated development environment that provides an editor, compiler, debugger and code management facilities, all packaged within the Eclipse framework. This free, downloadable package includes example Eclipse projects for most standard Freescale evaluation boards, allowing the user to very quickly get up and running with Eclipse and to actually download code and debug it on the target hardware using the usb²Demon.

Freescale and Macraigor Systems

Macraigor Systems supplies BDM/JTAG connection solutions for on-chip debugging of Freescale embedded microprocessors, including the i.MX1, i.MX21 and i.MX31 applications processors, the Symphony family of audio processors, and the PowerPC family. Macraigor Systems' solutions are designed for price-sensitive customers. These solutions include an Eclipse-based suite of software tools that support both Windows and Linux host systems.

Macraigor also specializes in in-circuit Flash programming via the JTAG/BDM connection and offers a stand-alone application for Windows or Linux that allows programming of the most widely used Flash devices on the market.

For more information, visit **www.macraigor.com**.

Signum Systems

JTAGjet-ARM

Signum Systems has been in the forefront of the embedded debugging tools for over 27 years. Whatever your i.MX application is, our JTAGjet emulators and Chameleon Debugger will help you get to the market faster with less effort.

Signum's JTAGjet is a palm-sized emulator base equipped with high-speed USB 2.0 interface that runs at 480 Mbps. With this high-speed interface, users can download their applications to i.MX target at speeds of up to 1 Mbps. Using Signum's high-speed debug channel (DCC), communication with a running application can be done through the JTAG port at speeds of up to 500 kbps without stopping the CPU.

JTAGjet supports all i.MX applications processor platforms as well as the MAC7xxx family of ARM devices from Freescale with the following debug tools:

JTAGjet-ARM emulator

- USB 2.0 (480 Mbps) JTAG emulator designed for high-speed downloads
- Up to 30 MHz JTAG variable clock with adaptive mode
- Smart Flash Programmer
- JTAG chain device auto detection
- Target power on/off sensing and isolation

JTAGjet-ARM-Trace emulator

- JTAG emulator with real-time ETM trace
- Program counter and variable tracing in real-time
- Supports devices at up to 400 MHz
- Up to 18 MB of trace memory
- 56-bit time stamp for each trace frame

Chameleon Debugger for ARM cores

- Single core and multi-core support
- Graphical breakpoint visualization
- Automatic board initialization
- Macro language for testing and verification
- Fast and reliable

Remote Debug Interface (RDI)

- Allows JTAGjet emulator to be used with all popular ARM debuggers
- Flash programming support
- Fast DCC channel implementation
- GDBserver for use with Linux tools

Freescale and Signum Systems

Current support for Freescale products includes JTAG debuggers, ETM real-time trace emulators, and C/C++ compilers for all MAC7xxx and i.MX devices.

Signum Systems, based in California since 1979, is one of the leading embedded tools makers in the United States. Their products include complete development and debug environments (IDE, C/C++ compilers, debuggers and emulators) for all popular embedded processors.

For more information, visit **www.signum.com**.

WIND RIVER

Wind River Systems

2007 **Platinum**
Global Sponsor

For more information, visit
www.windriver.com/products/OCD/
or call us at **1-800-545-9463**.

Wind River ICE
Wind River ICE is a feature-rich debugging tool with broad processor and target operating system support that enables users to accelerate the hardware and software development process.

This tool provides true multicore debugging support for multiple JTAG and EJTAG devices on a single scan chain, and it can support connections for up to eight devices simultaneously in a scan chain of up to 128 individual JTAG devices. Wind River ICE is a network-based emulator that supports 10/100 Ethernet communications to the host PC.

Wind River ICE features Wind River JTAG Server technology, which allows developers to:
• Access a single device on the scan chain, or multiple devices simultaneously to provide synchronous start and stop
• Set breakpoints within a single microprocessor to halt the execution of multiple microprocessors
• Make JTAG debugging connections to many microprocessors, regardless of their architecture
• Establish and remove connections without affecting any microprocessor or device on the scan chain

Wind River ICE offers the ability to support remote debugging, a development environment in which your device and/or emulator are not located next to your desktop environment. With Wind River ICE, your device can be located anywhere, as long as you can connect to it via the Internet. With its target console port, Wind River ICE supports remote debugging by allowing developers to backhaul the serial output port of the target device via an Ethernet connection.

Wind River Probe
Today's average device has a million lines of code. Within the next two years, that number will grow to two million. As applications get bigger and microprocessors become faster and more complex, developers must gain access to the core processor and its peripherals. They need to see what's going on inside. Wind River Probe enables engineers to see what's happening in the system every step of the way, from board bring-up to production and test.

Wind River Probe is a USB connectivity solution for developers who want to connect their host development environment to their target under development. Using the on-chip debugging capabilities available in most embedded microprocessors, Wind River Probe enables developers to connect to the target via the JTAG, EJTAG or BDM interface and communicate information to and from the host PC through a USB 1.x and 2.0-compliant interface. Combined with Wind River's JTAG Accelerator technology, the USB 2.0 interface allows Wind River Probe to offer the fastest download speeds in the DSO industry.

Freescale and Wind River Systems
Wind River Systems is an alliance partner to Freescale and supports PowerPC, ARM and ColdFire architectures with our commercial-grade run-times, tools, services and expanding into device management. Wind River is a Platinum Global Sponsor of all worldwide Freescale Technology Forum events for 2007.

The Wind River ICE and Wind River Probe support Freescale's PowerPC, ColdFire, ARM9 and ARM11 based SoC processors.

Real-Time Operating Systems and Tools

American Arium

Linux Debug Solution

Redefining Linux Debug

American Arium offers embedded Linux developers industry-leading hardware-assisted debug solutions for ARM-architecture processors. Designed to help ensure the successful completion of customers' projects, Arium's debug tools deliver first-of-their-kind features and functionality found nowhere else in the industry.

Key Arium Linux OS-aware debug features include:

- Full symbolic, source-level debugging of Linux kernel code
- Source-level debugging of Linux embedded applications
- Code debug on initial target bring-up immediately from board reset
- Launch of or attachment to processes with seamless transitions to and from the kernel and each process
- Dynamically loaded module debug (insmod)
- Linux shared libraries debug
- Threaded application debug support
- An intuitive Microsoft Windows-like debug environment
- Specialized breakpoints that stop the execution of a process without stopping the processor or causing it to enter debug mode
- Flash programming for kernel and file system download
- Linux console hosting devices from within SourcePoint, eliminating the need for a serial port or video device on the target
- Linux and Microsoft Windows hosting capability

Freescale and American Arium

Arium, a Freescale Alliance member, provides debug tools for Freescale's wireless and mobile technology solutions, including the i.MX21, i.MX31, i.MXL and i.MX1 applications processors. Freescale incorporates Linux into their processors because Linux offers the kind of high-level functionality often missing in many operating systems for the wireless and mobile market today.

In addition to delivering just the debug tools for ARM-based processors, Arium offers the LC-500MX21 development support kit for the Freescale M9328MX21ADS application development system board. The primary piece of the kit, Arium's JTAG emulator, provides reliable run control and intuitive stepping features. It is designed for speed, with fast file and image downloads and quick stepping through code. When coupled with SourcePoint™, Arium's flagship debugging software, this Linux OS-aware debug solution delivers non-intrusive debug, superb visibility and manipulation of code, real-time event management, multi-threading support and independent processor control.

The advantages to bringing up and debugging prototype code in this kind of environment include:

- Feature-rich, validated software and hardware for a positive initial out-of-box experience on a Linux platform
- Fast and simple installation and configuration for system bring-up
- A smooth, reliable evaluation experience
- Full, source-level, seamless Linux kernel, driver and application debug in a GUI environment, including Linux and POSIX thread support

For more information, visit **www.arium.com**.

Express Logic, Inc.

expresslogic

ThreadX® Real-Time Operating System (RTOS)

Express Logic's ThreadX RTOS gives device developers using i.MX, PowerPC, or ColdFire the ability to employ a small, fast RTOS to provide real-time multithreading services in consumer, industrial and networking devices. Working with the developer's compiler and debugger of choice, ThreadX makes software development fast and easy. ThreadX is provided in full source code, and may be evaluated free of charge.

ThreadX is a small-footprint, low-overhead, royalty-free real-time operating system (RTOS). It is ideally suited for high-volume resource constrained applications, including memory size and processor speed. ThreadX resides in under 10KB of ROM, and uses less than 2KB of RAM. Minimal configurations can be as small as 2KB ROM.

ThreadX provides basic preemptive scheduling for application threads, and runs all threads in a single linear address space for ease of programming and maximum performance. ThreadX has an intuitive and easy-to-use API, with 61 services for thread management, inter-thread communication, resource sharing, timer management, memory allocation and event synchronization. ThreadX handles interrupts with minimal latency, and performs rapid context switching. ThreadX offers a unique service called "preemption-threshold™" that enables establishment of a minimum priority level for preemption on a thread-by-thread basis.

ThreadX is complemented by Express Logic's NetX™ TCP/IP stack that supports IPv4.IPv6 dual mode operation, its FileX® FAT-compatible embedded file system, its USBX™ USB host/device stack, and its PEGX™ GUI development kit. All Express Logic products are licensed in full source code form and are completely royalty-free. Production licenses start at just $12,500.

Freescale and Express Logic

ThreadX runs on all i.MX, ColdFire and PowerPC processors. ThreadX is supported by Freescale CodeWarrior, ARM RealView, IAR Embedded Workbench, Wind River Workbench, and Green Hills Software MULTI development tools.

For more information about ThreadX or Express Logic, visit **www.rtos.com**.

Green Hills Software

Green Hills Family of RTOSes

Green Hills Software family of real-time operating systems is comprised of INTEGRITY®, velOSity and u-velOSity. The family represents a continuum of real-time operating systems featuring common communication protocols, common development tools and a 100% upward compatible programming interface (API).

For more information, **visit www.ghs.com**.

INTEGRITY® Real-Time Operating System

INTEGRITY is a secure, royalty-free real-time operating system intended for use in embedded systems that require maximum reliability. INTEGRITY represents the most advanced RTOS technology on the market today.

INTEGRITY uses hardware memory protection on the i.MX applications processor to isolate and protect itself and user tasks from incorrect operation caused by accidental errors or malicious tampering. Its object-oriented design allows strict access control and verification of the security and integrity of data, communications, individual components, and the system as a whole. Unlike other memory protected operating systems, INTEGRITY does not sacrifice real-time performance for security and protection. It is first and foremost a true hard real-time operating system.

INTEGRITY's special features include:

- Guaranteed resource (CPU and memory) availability
- Fast, deterministic real-time response
- Virtual device drivers
- Proven certification history for DO-178B Level A, IEC61508 SIL3, POSIX, FDA
- Unified platforms for aerospace and defense, automotive, industrial safety, medical, software-defined radio and wireless
- Real-time EventAnalyzer™
- Simulation environment
- Model driven design and UML tools integration
- Comprehensive communications protocols
- Powerful development tools
- Royalty-free licensing

velOSity Real-Time Operating System

The velOSity™ Real-Time Operating System (RTOS) is small, fast and royalty free, making it a perfect fit for cost-sensitive, high-volume and resource constrained embedded applications. velOSity offers developers a rich set of kernel services, device drivers, BSPs and middleware. In contrast to INTEGRITY, the velOSity RTOS is configured to run in flat memory models, optimizing both its footprint and execution speed. It can also be configured for use without a board support package for your target hardware, further reducing your memory footprint and implementation complexity.

u-velOSity Real-Time Microkernel

The μ-velOSity real-time microkernel is the smallest of Green Hills Software's family of royalty-free operating systems. It is implemented as a C library so it can be easily ported to a number of target architectures. Its simple design as well as integration with the best-in-class MULTI tools make μ-velOSity both easy to learn and simple to use.

Freescale and Green Hills Software

For 25 years, Green Hills Software has supplied software tools, real-time operating systems and networking stacks to Freescale customers on Power Architecture, 68K, ColdFire, StarCore, MCore and i.MX processors. Our diverse mutual customers produce the most technologically advanced products in the embedded industry and number in the hundreds, including HP, Ford, Lucent, GE Security and Boeing.

Micrium

Micrium
Empowering Embedded Systems

μC/OS-II, μC/TCP-IP, μC/FS and μC/GUI

Micrium offers a number of embedded components to support Freescale's i.MX family of applications processors.

For more information, visit **www.micrium.com**.

The μC/OS-II RTOS is a highly portable, ROMable, scalable, preemptive, real-time multitasking kernel. μC/OS-II is written in ANSI C. μC/OS-II meets the demanding requirements of the RTCA DO-178B standard for software used in avionics equipment. μC/OS-II can manage up to 255 tasks and provides the following services:

- Semaphores
- Mutual exclusion semaphores (to reduce priority inversions)
- Event flags
- Message mailboxes
- Message queues
- Task management (create, delete, change priority, suspend/resume etc.)
- Fixed sized memory block management
- Time management
- Timer management

μC/TCP-IP is a compact, reliable, high performance TCP/IP protocol stack. Built from the ground up to be both scalable and highly reliable, μC/TCP-IP enables the rapid configuration of required network options to minimize time-to-market. μC/TCP-IP was designed specifically for the demanding requirements of embedded systems. Critical sections were kept to a minimum and selected run-time validations can be disabled to enhance performance. μC/TCP-IP implements zero copy buffer management for highest efficiency. μC/TCP-IP allows the user to adjust the memory footprint based on design requirements. μC/TCP-IP can be configured to only include only those network modules absolutely required by the system. When a module is not used, it's not included in the build to save valuable memory space for resource limited embedded systems.

μC/FS is a file system for embedded applications offering a high performance library that can be used on any media for which you can provide basic hardware access functions. μC/FS is a high performance library that has been optimized for minimum memory consumption in RAM and ROM, high speed and versatility. It is written in ANSI C and can be used on any CPU.

μC/GUI is designed to provide an efficient processor and LCD controller-independent graphical user interface (GUI) for any application that operates with a graphical LCD. It is compatible with single-task and multitask environments, with a proprietary operating system or with any commercial RTOS. μC/GUI is shipped as C source code. It may be adapted to any size physical and virtual display with any LCD controller and CPU.

Freescale and Micrium

Micrium supports Freescale's i.MX family with its μC/OS-II real time operating system, μC/TCP-IP stack, μC/FS file system and μC/GUI graphical user interface. Micrium provides source code for all of its products, ensuring design engineers have full control over the code's implementation. Micrium's vision is to provide the highest-quality embedded software components in the industry, in the form of engineer-friendly source code with unsurpassed documentation and customer support. Micrium's products consistently deliver on that vision to shorten time-to-market throughout all product development cycles.
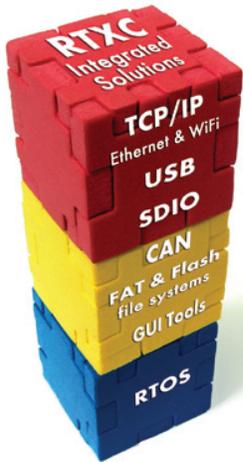
Quadros Systems, Inc.

Real-Time Operating System (RTOS), Communications Stacks and Middleware

RTXC Solutions from Quadros Systems

- Small: full size kernel footprint is 32 Kbytes (with ~300 services)
- Efficient: designed for embedded systems; ideal for low-power applications
- Integrated: RTOS, stacks and middleware, working together on your chosen processor
- Supported: the Quadros team stands behind every customer
- Trusted: deployed in millions of systems including the world's most popular mobile phones and media players

The RTXC Quadros RTOS family is comprised of four operating systems, with a common API, designed to address the distinct performance requirements of the major processing models: control processing, signal/data-intensive processing, convergent processing (unified RISC and DSP) and multi-processor/multi-core.

This unique RTOS family adapts to the needs of your application rather than forcing you to build your application to the constraints of the operating system. The dual mode kernel is ideal for multimedia architectures such as the Freescale i.MX family because it can efficiently support high interrupt data plane processing and event-synchronized control plane processing.

Kernel awareness for the RTXC Quadros RTOS is available for IAR EWARM, ARM RVDS and Lauterbach Trace32 development tools.

Complementing the RTOS is a family of integrated communications stacks and libraries including:

- TCP/IP v4/v6 along with higher layer protocols and encryption (also available for mobile and Wi-Fi)
- USB 2.0 host, device and OTG SDK
- SDIO stack for bus, host and cards
- Bluetooth stack supporting all popular profiles
- High performance, fail-safe file system for resident NAND/NOR flash devices
- FAT file system for hard drives and memory cards (including ATA, SD, MMC)
- Powerful embedded graphics solution to support GUI development

Freescale and Quadros Systems

Quadros Systems is a leading supplier of RTOS-based development and run-time software for embedded systems. Since 1978, RTXC products have been deployed worldwide in thousands of embedded systems, serving application areas such as communications, medical and industrial automation.

Quadros Systems has a long and successful history supporting Freescale processors with software that is powerful, flexible and reliable. Supported Freescale architectures include i.MX, MXC, ColdFire/68K, PowerPC, DSP5600 and MSC81xx/71xx.

For more information, visit **www.quadros.com**.
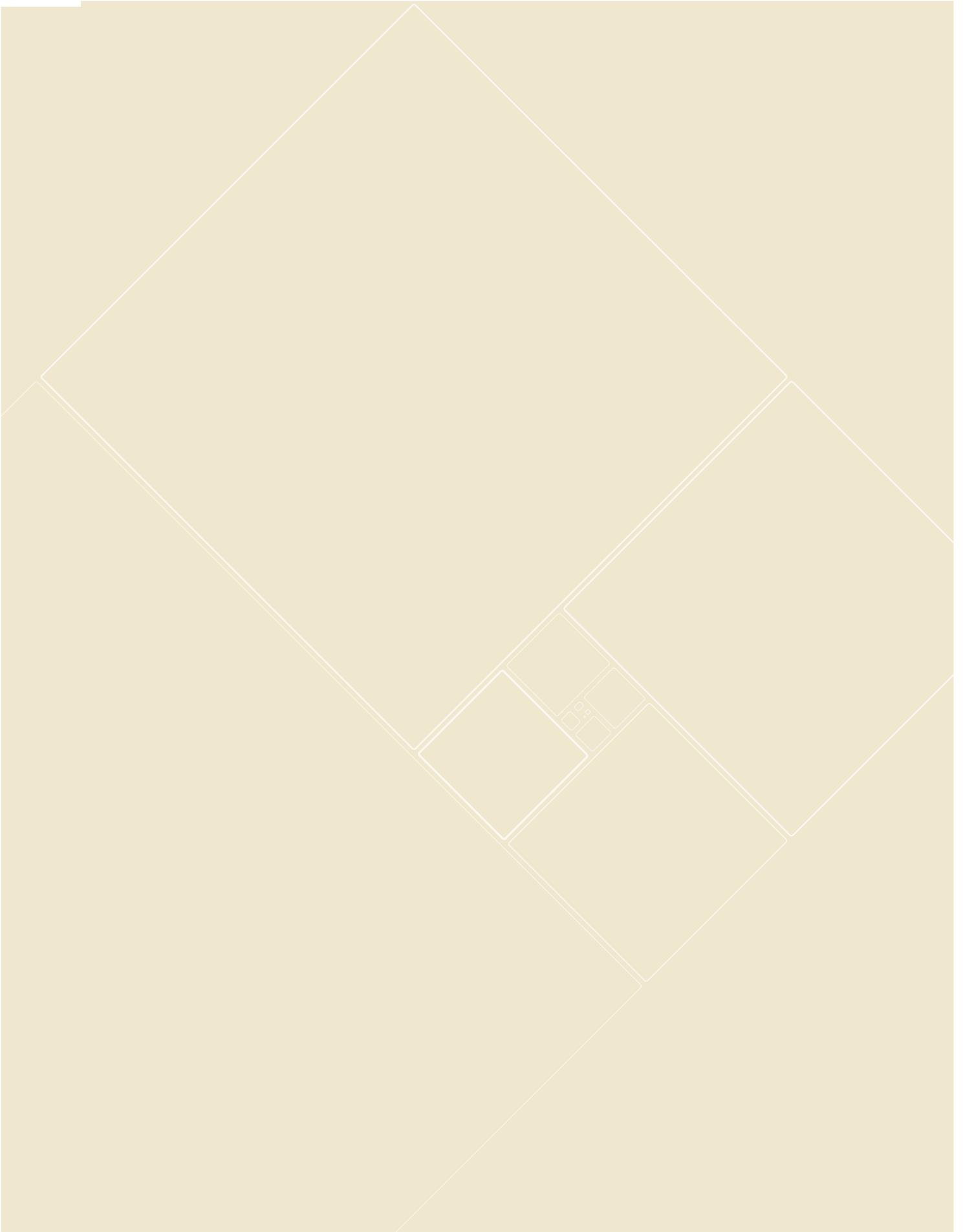
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please visit www.freescale.com

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freescale™
semiconductor