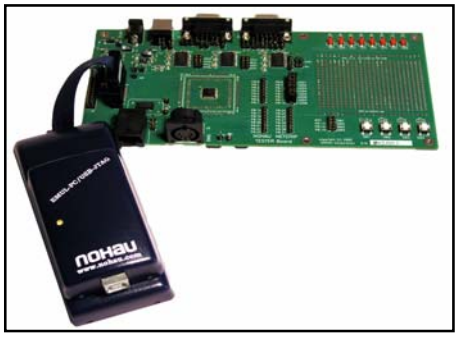
nohau

Cut Development Time

EMUL-ARM Parts

PH: 650.375.0409 **PH:** 800.686.6428 **Fax:** 650.375.8666 **Email:**sales@icetech.com **Web**: www.icetech.com

Development Tools for the ARM™ Architecture



Nohau offers a broad range of development solutions for the ARM architecture, including our EMUL-ARM debugger with choice of compiler and µC/OS-II RTOS (Real Time Operating System). We also provide a number of popular evaluation boards, many with BSPs (Board Support Packages).
EMUL-ARM is a JTAG debugger for the ARM Core, which includes both a hardware interface and debugging software. All recent ARM7 and ARM9-based cores are supported, including ARM7TDMI, ARM710, ARM720T, ARM790T, ARM9TDMI, ARM920T, ARM922T, ARM940T and ARM9x6.

EMUL-ARM-STD offers pre-configured flash programming for the following targets:

- Atmel evaluation boards: EB40, EB40A, EB55
- Atmel AT91x408xx series, programming internal flash
- Philips LPC2000 series, programming internal flash
- OKI ML67Q4001 series and ML67Q5001 series, programming internal flash

The optional CTM (Compact Trace Module) adds trace support to EMUL-ARM, supporting both ARM ETM (Embedded Trace Macrocell) and Motorola Nexus. Please note that these trace technologies require on-chip support, which is not available on all ARM based MCUs.

Our Seehau debugger software provides source code level debugging. The code can be viewed as C/C++, assembly, or a mix of the two. The executable source code lines are marked to indicate where breakpoints can be set. Variables, structures and arrays can be examined in different views. Seehau also includes kernel awareness for µC/OS-II.

Our BSPs include project files, µC/OS-II board-specific files and ready to compile examples. BSPs are included in the price of EMUL-ARM, and are currently available for boards from Atmel, OKI and Philips.

The following compilers are supported: ARM (ADS, SDT, RealView), Ashling (AsIDE), GNU (2.95, 3.2, 3.3), HI-TECH, IAR, Keil, Metrowerks, and MicroCross.

For more information, please email: sales@icetech.com.

Minimum System Requirements

- Pentium 200 MHz or higher for optimum performance
- 2x or better CD ROM
- 40 MB Free Hard Disk Space
- Windows 98, 2000, XP, XPPro or ME (with USB port)
- RAM for Windows 98/ME: 64MB
- RAM for Windows 2000/XP: 128MB

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Debuggers and Development Suites

20-pin emulator pod and software	The EMUL-ARM-STD emulator consists of the Seehau Debugger user interface, the USB1-JTAG hardware with 20-pin connector. This package offers basic run control, pre-configured FLASH programming, CTM standard support and a Getting Started Manual.	**EMUL-ARM-STD**

Note : For a 14-pin version, append -14-PIN to the above part numbers.

Trace Options

ETM Trace Board	Nohau trace board supporting the 4, 8, or 16-bit embedded trace macrocell (ETM). Provides 2 - 8 trigger levels dependent upon the ETM configuration on the ARM based chip.	**EMUL-CTM-STD**
Nexus Trace Board	Nohau trace board that with Nexus Level II and III trace support.	**EMUL-CTM-Nexus**

Adapters

Mictor to JTAG adapter	The ADP-Mictor2JTAG adapter allows the CTM to connect to a plain 14-pin or 20-pin.	**ADP-MICTOR2JTAG**

Cables

20-pin cable	Alternate cable assembly for connecting to a 20-pin target connector.	**EMUL-ARM/ADP-20PIN**
14-pin cable	Alternate cable assembly for connecting to a 14-pin target connector.	**EMUL-ARM/ADP-14PIN**

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Evaluation Boards

Atmel Evaluation Board

OKI Evaluation Board

Philips/Nohau Evaluation Boards

Atmel EB40A	CPU AT91R40008 with 2Mbyte of Flash and 256Kbytes of SRAM (internal to the CPU), Boot and Angel Debug Monitors, Extension Slots, JTAG connector for EMUL-ARM, AT91-CDROM including manuals and related documentation.	**Atmel/AT91EB40A**
Atmel EB55	CPU AT91M55800A with 2Mbyte of Flash and 256Kbytes of SRAM (internal to the CPU), Boot and Angel Debug Monitors, Extension Slots, JTAG connector for EMUL-ARM, AT91-CDROM including manuals and related documentation.	**Atmel/AT91EB55**
Atmel AT91RM9200	The OEM module for the AT91RM9200 with 4Mbyte of Flash and 32Mbytes of R SDRAM, Extension Slots, JTAG connector for EMUL-ARM, AT91-CDROM including manuals and related documentation. Includes a Cogent CSB300 motherboard.	**Cogent/CSB337**
OKI ML674000	OKI ML674000 32-bit MCU, 8KB of data memory, 1M of emulation memory, 2MB external chip flash memory and 7-segment LED indicator.	**OKI/ML674000**
OKI ML67Q4003	OKI ML67Q4003 MCU features ARM7TDMI 32-bit RISC CPU ARM mode and 16-bit THUMB mode, 512KB built in Flash ROM, 32-Kbytes built in zero-wait-state SRAM.	**OKI/ML67Q4003**
OKI ML67Q5003	OKI ML67Q5003 MCU, 512KB internal Flash, 32KB internal RAM, 8MB external SDRAM, 2MB external Flash, 512KB external RAM.	**Cogent/CSB431**
Philips LPC2106	Philips LPC2106 MCU, easy access to most I/O pins, prototyping area, eight LEDs, three push buttons, two RS232 connectors and a Mictor connector for the trace.	**EVAL/LPC2106**
Philips LPC2124	Philips LPC2124 MCU, two CAN and two serial interfaces are available plus small prototyping area.	**KEIL/MCB2100**
Philips LPC3000	Philips LPC3000 MCU, easy access to most I/O pins, prototyping area, 32Mb of SDRAM, 32Mb of NAND FLASH, LCD Module with Philips PCF8558, SD Card connector, 3-USB connectors, 3-UART connectors, 4-User Pushbuttons, 2-User LEDs and a prototyping area.	**EVAL/LPC3000**
Philips LPC2800	Philips LPC2888 MCU, easy access to most I/O pins, prototyping area, 16Mb of SDRAM, 8Mb of FLASH expandable to 16Mb, LCD Module (Epson S1D15605), SDCARD interface, 1-UART, 1-USB, 1-Headphone Jack, 1-User LED and 3-Power status LEDs, plus small prototyping area.	**EVAL/LPC2800**

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Compilers

IAR Systems Software, Inc.

C Compiler, Assembler, Linker

This package contains an ANSI optimized C compiler, relocatable macro assembler, linker, librarian, complete ANSI runtime libraries, and a fully integrated development environment under Win98/ME/NT4/2000/XP. **IAR/EWARM- LE**

This package contains an ANSI optimized C compiler, C-SPY simulator, relocatable macro assembler, linker, librarian, complete ANSI runtime libraries, and a fully integrated development environment under Win98/ME/NT4/2000/XP. The add-ons include additional C-SPY debugger engines interfacing to a variety of hardware evaluation boards or emulators. **IAR/EWARM**

This package adds the visual STATE graphical design tool to the IAR/EWARM package listed above. **IAR/EWARM-PRO**

MicroCross, Inc.

C/C++ Compiler, Assembler, Linker, IDE

GNU X-Tools™ v3.40 on Windows host ARM/Thumb Tool Suite per seat (this is without the compiler GUI) **MCGXT340DW-ARM**

Visual X-Tools ARM Tool Suite on Windows host per seat (This is WITH the compiler GUI) **MCVXT340DW-ARM**

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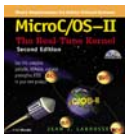
RTOS

Micrium, Inc.

MicroC/OS-II RTOS 600-page book by Jean Labrosse, including the latest version of the RTOS (v2.76 with some minor improvements by Nohau). This is essentially a "development license." For use in commercial projects, the license cost is listed in the following item. ISBN 1-57820-103-9. **MicroC/OS-II**



*MicroC/OS-II RTOS lifetime deployment license for one product. **MicroC/OS-II-License**

TCP/IP

InterNiche Technologies, Inc.

All prices listed are for the single product license. Product line and site product line licenses are available for each of the listed products.

Communications protocol: full featured TCP/IP stack, written completely in C, that is under 12KB. It is designed to be highly portable and compliant implementations of the TCP/IP protocol suite. It includes ANSI C sources for the TCP/IP family of protocols, a "Mini" Sockets API, and full technical documentation. **InterNiche/NicheLite**

Communications protocol: implementation of InterNiche's TCP/IP, designed for use in embedded applications requiring both IPv4 and IPv6 protocol support. Enables developers to take advantage of this next generation Internet Protocol, and supports IPv6 over IPv4 tunneling to allow routing through traditional networks. **InterNiche/NicheStack IPv4**

Operating system component: multitasking, portable, ROMable, scalable, preemptive, real-time operating system that is highly scalable and flexible. This is a uC/OS-II distribution slightly modified by InterNiche to work with InterNiche's other products. **InterNiche/uC/OS-II(ChronOS)**

Portable FTP Server: complete drop-in software module for developers to add file server functionality to their embedded systems. FTP allows the embedded systems developer to add sophisticated file service capabilities. **InterNiche/FTP Server+**

The optional HTML compiler is a valuable timesaving tool that produces ready to use C code for linking variables to forms and dynamic HTML. The HTML compiler compresses standard HTML and graphics (GIF) files, averaging about a 2:1 compression, and converts them into C language data arrays and structures that are compatible with the Virtual File System. The WebPort server will automatically decompress these files before downloading. The HTML compiler also produces C Language sources for stub routines and structures to implement SSI and CGI routines. **InterNiche/HTML Compiler**

Auto IP is a portion of the Universal Plug & Play" (UPnP) specification that allows an embedded Internet device to acquire an IP address without manual configuration or a DHCP server. **InterNiche/IP Auto Discovery**

Multilink PPP is a standard (RFC1990) for splitting the traffic of a logical PPP connection over two or more physical links. This works by dividing each packet into multiple smaller fragments, one per physical link, and transmitting the fragments over the links in parallel. This means each IPCP session must be associated with multiple LCP sessions, significantly complicating the internal logic of the PPP code. **InterNiche/MultiLink PPP**

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TCP/IP (Continued)

Specialized routing software: Internet protocol technology designed to overcome problems businesses experience with IPv4 networking. By utilizing private IP addresses, NATRouter saves money and ensures ease of future network growth by allowing up to 64,000 devices to access the Internet with a single IPv4 address.	**InterNiche/NATRouter**
Complete SDK: portable PPP stack is for developers of embedded systems to add point to point protocol functionality to their InterNiche TCP/IP stack. It includes ANSI C sources for all standard PPP authentication protocols and DHCP over PPP.	**InterNiche/PPP**
PPPoE (Point-to-Point Protocol over Ethernet) is a specification for connecting multiple computer users on an Ethernet local area network to a remote site through common customer premise equipment, the telephone company's term for a modem and similar devices. PPPoE can be used to have an office or building full of users share a common Digital Subscriber Line (DSL), cable modem, or wireless connection to the Internet. PPPoE combines the Point-to-Point Protocol (PPP), commonly used in dialup connections, with the Ethernet protocol which supports multiple users in a local area network. The PPP protocol information is encapsulated within an Ethernet frame.	**InterNiche/PPPoE**
Software development kit: provides an exchange of information among network components. This complete software development kit is designed for embedded system developers and is memory-efficient and highly portable.	**InterNiche/SNMP v1**
Portable Telnet Server: complete drop-in software module for developers of embedded systems to add Telnet Server functionality to their embedded product.	**InterNiche/Telnet+**
WWW Micro-Browser and Server: allows an embedded device to be configured and monitored by end users with any World Wide Web browser, eliminating the need for the manufacturer to provide a variety of GUIs for Windows, UNIX, etc. All the GUI graphics, controls and text are self contained in the device's firmware. InterNiche's server starts with the standard Web server features and enhances them to address common embedded system issues, such as lack of a native file system, limited ROM/RAM, and limitations of the shell which would normally execute CGI requests.	**InterNiche/WebPort**
Basic server bundle: includes both the NicheStack and the WebPort listed above.	**InterNiche/NicheStack and WebPort**
Basic server bundle: includes both the NicheLite and the WebPort listed above.	**InterNiche/NicheLite and WebPort**

Included with NicheStack, Rel. 2.0. Support after first year priced separately.

InterNiche, NicheStack and WebPort are trademarks of InterNiche Technologies, Inc.

Replacement Parts

USB/JTAG Interface

Compact Trace Module (CTM)

To purchase these replacement parts, the original parts must be returned.

ICE Technolody reserves the right to change specifications and availability without notice. Depending on stock availability, orders placed before 12 noon Pacific Time according to ICE Technology terms and conditions are shipped the same day. Orders placed after noon are shipped the following business day. EMUL-ARM is sold with a one year warranty starting from the date of purchase. The Seehau emulation software is sold with no warranty, but upgrades will be distributed to all customers up to one year from the date of purchase. ICE Technology makes no warranties, express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. In no event will Nohau Corporation be liable for consequential damages. Third-party software sold by ICE Technology carries the manufacturer's warranty.