

# noHau

## 2003 Parts List

### Nohau In-Circuit Emulators

*For ST Microelectronics*

**EMUL51-PC**  
For the uPSD3200 Family



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2003 Parts List

## Nohau Supports the ST Microelectronics uPSD3200 Architecture

### Introduction

**What this document is and about pricing** This price list is designed to be used by engineers, buyers and purchasing agents. It is widely quoted and used as an information source by Nohau representatives. The latest version is available from the Nohau website or from your local Nohau representative. You can find the name of your rep by contacting Nohau as listed on this document. Any US dollar prices shown are valid in the USA only.

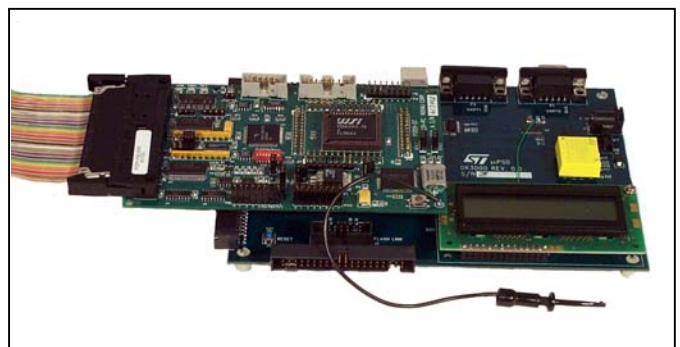
**What an emulator is and what it does** An emulator is a scientific device used by engineers to design their computers faster and more accurately. The emulator temporarily replaces the microcontroller in the customer target system. The emulator behaves exactly like the processor with the added benefit of allowing you to view data and code inside the processor and control the operation of the CPU. You can load user code, view it in machine code or C source, set breakpoints on addresses and preset variables and registers. You can view data changes in real-time with the Shadow RAM feature. The emulator can be operated in stand-alone mode so development work can begin before the target system is available or complete.

**The emulator configuration** The ST uPSD3200 emulator system is made up of up to three ISA boards that can either be installed inside your PC or in the HSP box according to your requirements. One board is the emulator itself and comes in two memory sizes. Another is the communications interface and is needed only if the emulator and trace boards are installed in the HSP Box. The HSP Box then communicates with the PC via an LPT: or USB port. The third is the optional trace board which provides the trace memory, triggers and Shadow RAM. The emulator in the HSP box is depicted on the front cover of this price list.

**What the trace does and why people order one** You can set triggers on specified addresses and data which will stop the emulation and/or trace memory when this action occurs. This alerts you that the specified event has occurred and you may now use the information stored by the emulator to find any hardware or software errors. The trace memory records the microcontroller cycles including data reads and writes for user specified conditions. You can view the trace memory to find out what your code was actually doing at a particular time. Most people purchase the optional trace card due to its unique ability to save many hours of engineering time looking for elusive bugs. It is useful for finding data operations and instruction executes that "should not be there".

**Seehau - the Nohau debugger for the emulator** The emulator and its software is designed to be relatively intuitive to use. The Nohau debugging software is called "Seehau" and updates are available free on the website or directly from any Nohau office or representatives anywhere in the world. Seehau is macro based enabling automatic operation. Seehau operates under Windows 95, 98, NT, ME, XP, XPPro and 2000Pro. For more information about the benefits of Seehau, see [www.nohau.com](http://www.nohau.com) for the latest data sheets or call your Nohau representative.

**More info is available** For more information on the entire embedded tool chain, get your copy of "The Embedded Software Engineer's Guide to In-Circuit Emulation" from your Nohau rep or from [www.nohau.com](http://www.nohau.com). Nohau has other informative documents available from the same sources. Any questions can be directed to your Nohau rep or [sales@nohau.com](mailto:sales@nohau.com).



## General Features

**The emulator parts** The basic Nohau ST uPSD3200 emulator consists of an emulator motherboard, a pod board, power supply, debugger software (Seehau) and a communications interface. You can run this system stand-alone without any target hardware. Add a target adapter and you can run in your target board. Add an optional trace card and you can trigger and record CPU instructions and their bus operations.

**Connecting to the PC and the software Seehau** The Nohau emulator is an ISA card that can plug into a PC or be plugged into the HSP box or USB box that connects to a Windows based PC through a parallel port or USB port. The photo here depicts the HSP box interface. The Seehau debugger software that is installed on the PC controls the emulator and provides the graphical user interface (GUI). The trace card is optional and can be added later according to your needs and budget.



## Minimum System Requirements

- Pentium 200 or higher for optimum performance
- 2x or better CD ROM
- 40 MB Free Hard Disk Space
- Windows 95, 98, 2000Pro, Me, XP, XPPro or NT
- RAM for Windows 95/98/Me: 64MB
- RAM for Windows NT/2000Pro/XP/XPPro: 128MB

It is possible to run Seehau on slower and smaller machines such as laptops. Nohau technical support reports that Seehau, as any large Windows based program, runs more reliably on larger and faster machines.

## Application Notes on our website

The following is a list of information that can be found on Nohau's website. Go to [www.nohau.com/documents](http://www.nohau.com/documents) and then select either the Technical Publications link, the Technical Application Notes link or the Nohau Manual link. There are also data sheets available on our website for the emulator and the Seehau software.

### Materials listed under the Technical Publications Link:

Product Focus: Nohau gives RTOS users easy access to the Seehau Interface

### Materials listed under the Technical Application Notes Link:

Case Studies -connecting to Targets

ST uPSD3200 Preliminary Notes

### Materials listed under Nohau Manuals / EMUL51-PC:

Seehau 51 Getting Started

EMUL51 Users Guide

## Complete System Pricing

EMUL51PSD EA256 low- cost package	This complete system consists of the following: the emulator board (EMUL51-PC/EA256-uPSD-BSW-50), the pod board (Pod-51uPSD3000), the manuals, the HSP box, and the Seehau Debugger.	EMUL51-PC/ EA256-uPSD3000 LCPKG
EMUL51PSD EA256 package	This complete system consists of the following: the emulator board (EMUL51-PC/EA256-uPSD-BSW-50), the pod board (Pod-51uPSD3000), the trace board (EMUL51-PC/ETR64-50), the manuals, the HSP box, and the Seehau Debugger.	EMUL51-PC/ EA256-uPSD3000 PKG
EMUL51PSD 768 package	This complete system consists of the following: the emulator board (EMUL51-PC/EA768-uPSD-BSW-50), the pod board (Pod-51uPSD3000), the trace board (EMUL51-PC/ETR256-50), the manuals, the HSP box, and the Seehau Debugger.	EMUL51-PC/ EA768-uPSD3000 PKG

\* **Note:** For 3V support specify pod POD-51-uPSD3000-3V with above system orders.

**Note:** If you would like to substitute the USB for the HSP box then when ordering, add the following : -USB to the part #.

## Individual Component Descriptions

### Advanced Emulator Boards (EA) for uPSD3000 Pods

Emulator board with 256K memory	A 50-MHz advanced emulator board with 256K emulation memory. ISA card.	EMUL51-PC/ EA256-uPSD-BSW- 50
Emulator board with 768K memory	A 50-MHz advanced emulator board with 768K emulation memory. ISA card.	EMUL51-PC/ EA768-uPSD-BSW- 50

**Note:** To use these emulator boards with other 8051 pods (except 8051MX) you will need to purchase an EPROM-COM1.4-EA51

### EPROMS for Converting Among EA Emulator Types

Convert to an EA-BSW-50	To convert to an EA-BSW-50 from an EA-uPSD-BSW-50.	EPROM-COM1.4- EA51
Convert to an EA-uPSD- BSW-50	To convert to an EA-uPSD-BSW-50 from an EA-BSW-50.	EPROM-COM1.51- EA51-uPSD

## Individual Component Descriptions (continued)

### Enhanced Trace Options

The optional trace board provides the trace memory, triggers and Shadow RAM. This board plugs into your PC or the HSP Box. The trace is easily added at any time and its software is include inside Seehau. The trace board provides 1 M of code coverage memory and a 32 bit timestamp. The executed instructions and data actions can be viewed in the assembly code mixed with the source code.

64K frame trace Board	50-MHz 64-kiloframe Enhanced Trace Memory Board. The 50 MHz speed corresponds to 25 MHz at 6 clocks.	<b>EMUL51-PC/ ETR64-50</b>
256K frame trace Board	50-MHz 256-kiloframe Enhanced Trace Memory Board. The 50 MHz speed corresponds to 25 MHz at 6 clocks.	<b>EMUL51-PC/ ETR256-50</b>

### uPSD3000 Pod Boards

Pod Board 5V	The 40-MHz pod uses a bondout to support the uPSD3200 architecture. The pod contains a bondout chip, a socketed PSD device that can be changed to your target device and a JTAG programming connector. The pod terminates to four male headers. The headers mate with the ST Microelectronics DK3000 evaluation board, or the 52- or 80-pin target adapter sets.	<b>POD-51-uPSD3000</b>
* Pod Board 3V	3V version of the POD-51-uPSD3000 listed above.	<b>POD-51-uPSD3000- 3V</b>

**Note:** To use either of these pods with an existing EA emulator board (except 8051MX) you will need to purchase a new COM PROM part number EPROM-COM1.51-EA51-uPSD.

\* **Note:** If you purchase POD-51-uPSD3000 and want to buy the 3V chip, please see page 5 of this price list for ordering information.

## Target Adapters

### Target Adapter Sets

52-pin NQ adapter set	An 52-pin adapter set for the uPSD3000 emulator. This set consists of a Tokyo Eletech 52-pin NQ adapter base part # ES/000-2085, an emulator cover (YQ) part # ES/000-2087, a microcontroller cover (HQ) part # ES/000-2086, a spacer part # ES/000-3588 and the EMUL-51/ADP-uPSD3000-52 adapter mezzanine board.	<b>EMUL51-PSD/ADP-52-NQ-Set</b>
52-pin TQ adapter set	An 52-pin adapter set for the uPSD3000 emulator. This set consists of a Tokyo Eletech 52-pin TQ adapter base part # ES-000-4472, a spacer part # ES/000-2755 and the EMUL-51/ADP-uPSD3000-52 adapter mezzanine board.	<b>EMUL51-PSD/ADP-52-TQ-Set</b>
80-pin NQ adapter set	An 80-pin adapter set for the uPSD3000 emulator. This set consists of a Tokyo Eletech 80-pin NQ adapter base part # ES/000-2174, an emulator cover (YQ) part # ES/000-2176, a microcontroller cover (HQ) part # ES/000-2175, a spacer part # ES/000-3658 and the EMUL-51/ADP-uPSD3000-80-NQ adapter mezzanine board.	<b>EMUL51-PSD/ADP-80-NQ-Set</b>
80-pin TQ adapter set	An 80-pin adapter set for the uPSD3000 emulator. This set consists of a Tokyo Eletech 80-pin TQ adapter base part # ES-000-4532, a spacer part # ES/000-2865 and the EMUL-51/ADP-uPSD3000-80 adapter mezzanine board.	<b>EMUL51-PSD/ADP-80-TQ-Set</b>

**Note:** The emulator will connect directly to the ST uPSD3200 evaluation board. No target adapter is needed. The uPSD3000 chip needs to be removed from the target to use the emulator.

## Individual Target Adapters

### 52-pin replacement adapter components

52-pin NQ adapter base	A replacement 52-pin solder-down adapter NQ base.	<b>ES/000-2085</b>
52-pin HQ microcontroller cover	A replacement 52-pin NQ microcontroller cover (HQ).	<b>ES/000-2086</b>
52-pin YQ emulator cover	A replacement 52-pin NQ emulator cover (YQ).	<b>ES/000-2087</b>
52-pin NQ spacer	A replacement 52-pin NQ spacer between the solder-down base and the adapter.	<b>ES/000-3588</b>
52-pin TQ adapter base	A replacement 52-pin TQ solder-down adapter base.	<b>ES/000-4472</b>
52-pin TQ spacer	A replacement 52-pin TQ spacer between the solder-down base and the adapter.	<b>ES/000-2755</b>

## Target Adapters (continued)

### 80-pin replacement adapter components

80-pin NQ adapter base	A replacement 52-pin solder-down adapter NQ base.	ES/000-2174
80-pin HQ microcontroller cover	A replacement 52-pin NQ microcontroller cover (HQ).	ES/000-2175
80-pin YQ emulator cover	A replacement 52-pin NQ emulator cover (YQ).	ES/000-2176
80-pin NQ spacer	A replacement 52-pin NQ spacer between the solder-down base and the adapter.	ES/000-3658
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80-pin TQ adapter base	A replacement 52-pin TQ solder-down adapter base.	ES/000-4532
80-pin TQ spacer	A replacement 52-pin TQ spacer between the solder-down base and the adapter.	ES/000-2865

### Chip

* 3V chip	3V version of the chip for POD-51-uPSD3000.	ST/PSD834F2V-70
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## Communication Interfaces

The High Speed Parallel Box connects to the PC's parallel printer port and lets you use the in-circuit emulator and optional trace board where no ISA slots are available.

**HSP Box** The high speed parallel box (HSP) chassis, the communications interface which consists of: the HSP ISA card (CARD-HSP) and the cable (CBL-HSP), connect to the PC LPT port.

**EMUL-PC/BOX-HSP**



**HSP ISA card and cable** The communications interface [HSP ISA card (CARD-HSP) and cable (CBL-HSP)] for an existing ISA chassis.

**EMUL-PC/SET-HSP**

**HSP with USB card** High speed parallel box (HSP) chassis, USB card (CARD-USB) and cable (CBL-USB). This cable will work with all Windows versions that support USB such as Windows 2000Pro, 98 and 95 OSR2. Includes EMUL-PC/USB-HSP.

**EMUL-PC/BOX-USB**



**USB card with cable** The communications interface [USB card (CARD-USB) and cable (CBL-USB)] for an existing ISA chassis. This cable will work with all Windows versions that support USB such as Windows 2000Pro, 98 and 95 OSR2.

**EMUL-PC/SET-USB**



## Software Support Packages

### Compiler Packages

#### Keil Software, Inc.

*C-Compiler, Assembler, Development Kits*

- \* C-Compiler C51, Assembler A51, Banking Linker BL51, libraries, library manager,  $\mu$ Vision/51 environment, and editor for Windows. KEIL/ CA51
- Macro Assembler A51, Banking Linker BL51, libraries, library manager,  $\mu$ Vision/51 environment, editor, and make for Windows. KEIL/ A51
- \* Developer's Kit. All items in CA51, plus dScope-51 simulator with target monitor for Windows. KEIL/ DK51
- \* Professional Kit for Windows. All items in DK51, plus tiny real-time executive RTX-51-Tiny and Windows versions of  $\mu$ Vision/51 and dScope-51. KEIL/ PK51

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## Extended Hardware Warranties

Purchase of each major EMUL51-PC item is covered by a one-year warranty as described elsewhere in this list. At the end of the first year, an additional year of hardware service coverage is available. Coverage must be continuous and is not available if coverage has lapsed. An additional year of coverage can also be purchased each year at the time an additional paid year's coverage ends.

*No warranty expiration reminder notices will be sent to customers by Nohau.*

**Emulator extended warranty coverage, 1 yr.** For a Standard, Advanced, or Special Emulator Unit.

**Trace extended warranty coverage, 1 yr.** For a Standard, Advanced or Enhanced Trace Option.

**Pod extended warranty coverage, 1 yr.** For a pod. Special emulation (bondout) pods are warranted for 1 replacement if Nohau determines that the failure wasn't due to damage caused by the user's action.

**HSP extended warranty coverage, 1 yr.** For a HSP Chassis unit, box board card and cable.

## Non-Warranty Repairs

Repair service for units beyond an applicable initial one-year warranty period, repairs not covered by that warranty, or for customers who have elected to not carry an extended hardware warranty. The hourly rate includes the parts, with the exception of bondouts and some adapters.

#### Hourly rate

#### Minimum charge

#### Maximum charge

One half the purchase price.

Prices are subject to change without notice. Depending on stock availability, orders placed before 12 noon Pacific Time according to Nohau's terms and conditions are shipped the same day. Orders placed after noon are shipped the following business day. Unless otherwise noted, the EMUL51-PC emulator, trace, pod, emulator cable, and Nohau HSP box hardware are sold with a one-year warranty, except for special emulation pods. Special emulation pods are warranted for one replacement if Nohau determines that the failure was not due to damage caused by the user's action. Optional adapters, cables, and extenders are sold with a 90-day warranty, except that such parts might be subject to a repair charge if damage was caused by the user's actions. Nohau Corporation 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 be liable for consequential damages. Third-party software and programmers sold by Nohau carry manufacturers' warranties.

Technical support to be provided by local Nohau representative, where applicable. EMUL51-PC is a trademark of Nohau Corporation. Windows is a registered trademark of Microsoft Corp.