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## In-Circuit Emulators for the 196 Architecture

8XC194, 8XC196JQ, JR, JT, KB, KC, KD, KQ, KR, KS, KT, NP, NT, NU, 8XC198

### Examples of How to Order EMUL196 Systems

Listed below are three examples of what parts to order for your EMUL196 system. Use the examples as a guide to help you in your ordering of a Nohau emulator system. To order a system for a different 196 derivative, select the same component type for that derivative. The following 196 price list contains all the components you will need to order your complete system. There are photos of systems and adapters to help you in your ordering. If you need assistance please contact your local rep, [www.nohau.com/reps](http://www.nohau.com/reps), or Nohau technical support: [support@nohau.com](mailto:support@nohau.com) or [sales@nohau.com](mailto:sales@nohau.com).

#### NU System (Without Trace Card)

Emulator motherboard	EMUL196-PC/E64-40
Pod Board	POD-196-256-NU-40
Target adapter	EMUL196-PC/NP-ADP100-QFP/EDI

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#### KC System (With Optional HSP Box and Trace Card)

Emulator motherboard	EMUL196-PC/E64-16
Pod Board	POD-196-64KC/KD-16
Trace Card	EMUL196-PC/DTR128-16
**Communications Interface	EMUL-PC/BOX-HSP
Target adapter	EMUL196-PC/KC-ADP-68/PLCC/EDI

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\*\* This communications interface is only needed if your computer does not have an ISA slot. The HSP or USB box can be purchased for all the emulators if needed.

#### KR System (With Trace Card)

Emulator motherboard	EMUL196-PC/E64-16
Pod Board	POD-196-1M-KR/NT-16
Trace Card	EMUL196-PC/DTR128-16
Target adapter	EMUL196-PC/KR-ADP-68/PLCC/EDI

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The systems will also include the power supply, a BNC trace trigger cable, trace probe set, the Hardware Manual, the Getting Started Manual and the Seehau Debugger software.

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## 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. If this document contains no prices then it is called the parts list and is designed for distribution outside of the USA. In this case, contact your local Nohau rep for the price list for your country. Your rep may distribute this document with local prices listed. 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.

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 trace 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.

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 rep anywhere in the world. Seehau is macro based enabling automatic operation. Seehau operates under Windows 95, 98, NT, ME, XP 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 rep.

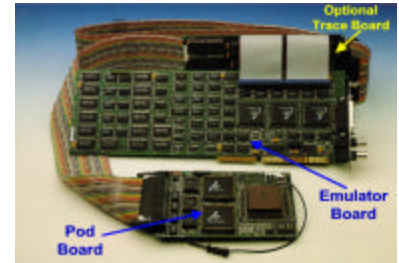
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## General Features

### What parts do I need to order?

What parts do I need to order? A 196 emulator system consists of the emulator PC plug-in ISA card, the optional PC plug-in ISA trace card and a pod board. An optional High Speed Parallel Box (HSP) or USB Box is also available. A target adapter will normally be needed to connect the emulator to the target system. The emulator includes the 50-pin five-foot cable EMUL-PC/CBL5 that connects to a standard 50-pin pod board. Higher frequency ratings cover all lower frequencies. There are various flavors of these components that you will select to configure your desired system. Your local Nohau representative or the Nohau technical support team are able to assist you with selecting the appropriate components. The Seehau debugging software, technical support, warranty, accessories and manuals are automatically included and need not be specified in your order.



## Minimum System Requirements

- Pentium 200 or higher
- 2x or better CD ROM
- 40 MB Free Hard Disk Space
- Windows 95, 98, 2000Pro, ME, XP or NT
- RAM for Windows 95/98/ME: 64MB
- RAM for Windows NT:/2000Pro/XP 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 in 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 the Technical Application Notes link, the Technical Publications 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 Application Notes Link:

- \* Getting Started with your EPC interfaced Emulator System
- \* Case Studies - Connecting to Targets

### \* Materials listed under the Technical Publications Link:

List of MCUs supported by Nohau Corporation

### Materials listed under Nohau Manuals / EMUL196-PC:

Seehau/196/296

EMUL196-PC User Guide

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## Standard Emulator Boards

All the emulator boards are PC plug-in ISA cards.

### 64K Shadow RAM Emulators

16-MHz emulator	A 16-MHz emulator with 64K Shadow RAM.	EMUL196-PC/E64-16
20-MHz emulator	A 20-MHz emulator with 64K Shadow RAM.	EMUL196-PC/E64-20
25-MHz emulator	A 25-MHz emulator with 64K Shadow RAM.	EMUL196-PC/E64-25
40-MHz emulator	A 40-MHz emulator with 64K Shadow RAM.	EMUL196-PC/E64-40
50-MHz emulator	A 50-MHz emulator with 64K Shadow RAM.	EMUL196-PC/E64-50

### 256K Shadow RAM Emulators

16-MHz emulator	A 16-MHz emulator with 256K Shadow RAM.	EMUL196-PC/E256-16
20-MHz emulator	A 20-MHz emulator with 256K Shadow RAM.	EMUL196-PC/E256-20
25-MHz emulator	A 25-MHz emulator with 256K Shadow RAM.	EMUL196-PC/E256-25
40-MHz emulator	A 40-MHz emulator with 256K Shadow RAM.	EMUL196-PC/E256-40
50-MHz emulator	A 50-MHz emulator with 256K Shadow RAM.	EMUL196-PC/E256-50

### 1 MB Shadow RAM Emulators

16-MHz emulator	A 16-MHz emulator with 1 MB Shadow RAM.	EMUL196-PC/E1M-16
20-MHz emulator	A 20-MHz emulator with 1 MB Shadow RAM.	EMUL196-PC/E1M-20
25-MHz emulator	A 25-MHz emulator with 1 MB Shadow RAM.	EMUL196-PC/E1M-25
40-MHz emulator	A 40-MHz emulator with 1 MB Shadow RAM.	EMUL196-PC/E1M-40
50-MHz emulator	A 50-MHz emulator with 1 MB Shadow RAM.	EMUL196-PC/E1M-50

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### Pod Boards

The emulator board connects to the pod board through the cable supplied with the emulator. The pod board has emulation memory and an on-board crystal or oscillator. Jumpers select pod crystal or user target crystal or oscillator. The pod and emulator can run stand-alone without being connected to any user target board.

#### Pods for 8XC194, 8XC196KB, KC, KD, and 8XC198

16-MHz pod board with 64K RAM	A 16-MHz pod board for 8XC194, 8XC196KB, KC, KD, and 8XC198 with 64K emulation RAM. Requires a separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.)The adapter type is determined by emulated chip type. This pod emulates external and single chip modes. No PRU is needed for single chip emulation.	<b>POD-196-64-KC/KD-16</b>
20-MHz pod board with 64K RAM	A 20-MHz version of POD-196-64-KC/KD-16.	<b>POD-196-64-KC/KD-20</b>

#### Pods for 196JQ, JR, JT, KQ, KR, KS, KT, and NT

16-MHz pod board with 256K emulation RAM	A 16-MHz pod board for 8XC196JQ, JR, JT, KQ, KR, KS, KT, and NT. Contact Nohau for availability. There is 64K emulation RAM for all parts except NT; 256K emulation RAM for NT. Supports only four pages for NT if any memory is mapped to emulator. Requires separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.) Adapter type is determined by emulated chip type. This pod emulates external mode only. (See the "Port Replacement Units (PRU)" section for single chip mode emulation or use of Port 3, 4, or 5 as low-speed I/O.)	<b>POD-196-256-KR/NT-16</b>
20-MHz pod with 256K RAM	A 20-MHz version of POD-196-256-KR/NT-16. Contact Nohau for availability.	<b>POD-196-256-KR/NT-20</b>
16-MHz pod board with 1 MB emulation RAM	A 16-MHz pod board for 8XC196NT. Contact Nohau for availability. There is 1 MB emulation RAM (64K emulation RAM for 8XC196JQ, JR, JT, KQ, KR, KS, and KT). Requires separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.) The adapter type is determined by emulated chip type. This pod emulates external mode only. (See the "Port Replacement Units (PRU)" section for single chip mode emulation or use of Port 3, 4, or 5 as low-speed I/O.)	<b>POD-196-1M-KR/NT-16</b>
20-MHz pod with 1 MB emulation RAM	A 20-MHz version of POD-196-1M-KR/NT-16. Contact Nohau for availability.	<b>POD-196-1M-KR/NT-20</b>



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### Pod Boards (Continued)

#### Pods for 196NP

25-MHz pod board with 256K emulation RAM	A 25-MHz pod board for 8XC196NP. There is 256K emulation RAM. Supports only four pages if any memory is mapped to the emulator. Requires a separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.) No PRU is needed for single chip emulation.	<b>POD-196-256-NP-25</b>
25-MHz pod board with 1 MB emulation RAM	A 1 MB version of POD-196-256-NP-25.	<b>POD-196-1M-NP-25</b>

#### Pods for 196NU

40-MHz pod board with 256K emulation RAM	A 40-MHz pod board for 8XC196NU. There is 256K emulation RAM. Supports only four pages if any memory is mapped to the emulator. Requires a separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.) No PRU is needed for single chip emulation.	<b>POD-196-256-NU-40</b>
50-MHz pod board with 256K emulation RAM	A 50-MHz version of POD-196-256-NU-40.	<b>POD-196-256-NU-50</b>
40-MHz pod board with 1 MB emulation RAM	A 40-MHz pod board for 8XC196NU. There is 1-MB emulation RAM. Requires a separate adapter to connect to the target. (See the "Emulator to Target Adapters" section.) No PRU is needed for single chip emulation.	<b>POD-196-1M-NU-40</b>

### Port Replacement Units (PRU)

This is a board that you install between the pod and the adapter and is required to provide port signals.

16-MHz PRU	A 16-MHz PRU for POD-196-xxx-KR/NT-16, to provide Ports 3, 4, and 5 for 8XC196JQ, JR, JT, KQ, KR, KS, KT, and NT.	<b>EMUL196-PC/PRU/KR/NT-16</b>
20-MHz PRU	A 20-MHz version of EMUL196-PC/PRU/KR/NT-16. For 16 MHz or 20 MHz.	<b>EMUL196-PC/PRU/KR/NT-20</b>

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### Trace Options

Optional PC plug-in ISA board that adds trace (execution history) capabilities to the emulator and pod. The 104-bit wide trace records include address, data external to the chip, timestamp, processor status and user-defined external data. Includes external probes and cable.

#### Standard Trace Options

16-MHz trace board with 32K deep buffer	A 16-MHz trace board with 32K deep buffer. This trace can trigger and filter on fetch, read and write addresses, not data values.	<b>EMUL196-PC/TR32-16</b>
20-MHz trace board with 32K deep buffer	A 20-MHz version of EMUL196-PC/TR32-16.	<b>EMUL196-PC/TR32-20</b>
25-MHz trace board with 32K deep buffer	A 25-MHz version of EMUL196-PC/TR32-16.	<b>EMUL196-PC/TR32-25</b>
40-MHz trace board with 32K deep buffer	A 40-MHz version of EMUL196-PC/TR32-16.	<b>EMUL196-PC/TR32-40</b>
50-MHz trace board with 32K deep buffer	A 50-MHz version of EMUL196-PC/TR32-16.	<b>EMUL196-PC/TR32-50</b>

#### 128K Data Trace Options

16-MHz trace board with 128K deep buffer	A 16-MHz data trace with 128K deep buffer. This trace can trigger and filter on fetch, read and write addresses and on data values.	<b>EMUL196-PC/DTR128-16</b>
20-MHz trace board with 128K deep buffer	A 20-MHz version of EMUL196-PC/DTR128-16.	<b>EMUL196-PC/DTR128-20</b>
25-MHz trace board with 128K deep buffer	A 25-MHz version of EMUL196-PC/DTR128-16.	<b>EMUL196-PC/DTR128-25</b>
40-MHz trace board with 128K deep buffer	A 40-MHz version of EMUL196-PC/DTR128-16.	<b>EMUL196-PC/DTR128-40</b>
50-MHz trace board with 128K deep buffer	A 50-MHz version of EMUL196-PC/DTR128-16.	<b>EMUL196-PC/DTR128-50</b>

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**Trace Options (Continued)****512K Data Trace Options**

The price of a special order unit depends on memory cost at time of order.

16-MHz trace board with 512K deep buffer	A 16-MHz data trace board with 512K deep buffer. This trace can trigger and filter on fetch, read and write addresses and on data values.	<b>EMUL196-PC/DTR512-16</b>
20-MHz trace board	A 20-MHz version of EMUL196-PC/DTR512-16.	<b>EMUL196-PC/DTR512-20</b>
25-MHz trace board	A 25-MHz version of EMUL196-PC/DTR512-16.	<b>EMUL196-PC/DTR512-25</b>
40-MHz trace board	A 40-MHz version of EMUL196-PC/DTR512-16.	<b>EMUL196-PC/DTR512-40</b>
50-MHz trace board	A 50-MHz version of EMUL196-PC/DTR512-16.	<b>EMUL196-PC/DTR512-50</b>

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### Communication Interfaces



The High Speed Parallel Box lets you use the in-circuit emulator and optional trace board where no ISA slots are available. This option runs through a standard PC parallel port while keeping the port available for regular printing use.

HSP Box Set	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.	<b>EMUL-PC/BOX-HSP</b>
HSP ISA card and cable	The communications interface [HSP ISA card (CARD-HSP) and cable (CBL-HSP)] for an existing ISA chassis.	<b>EMUL-PC/SET-HSP</b>
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/SET-USB.	<b>EMUL-PC/BOX-USB</b>
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.	<b>EMUL-PC/SET-USB</b>

### Replacement Cable

5 foot replacement cable	A replacement five-foot pod cable to connect standard emulator to standard 50-pin pod. This cable is included with a standard emulator. Augat part number SF250-062A0-162.	<b>EMUL-PC/CBL5-A</b>
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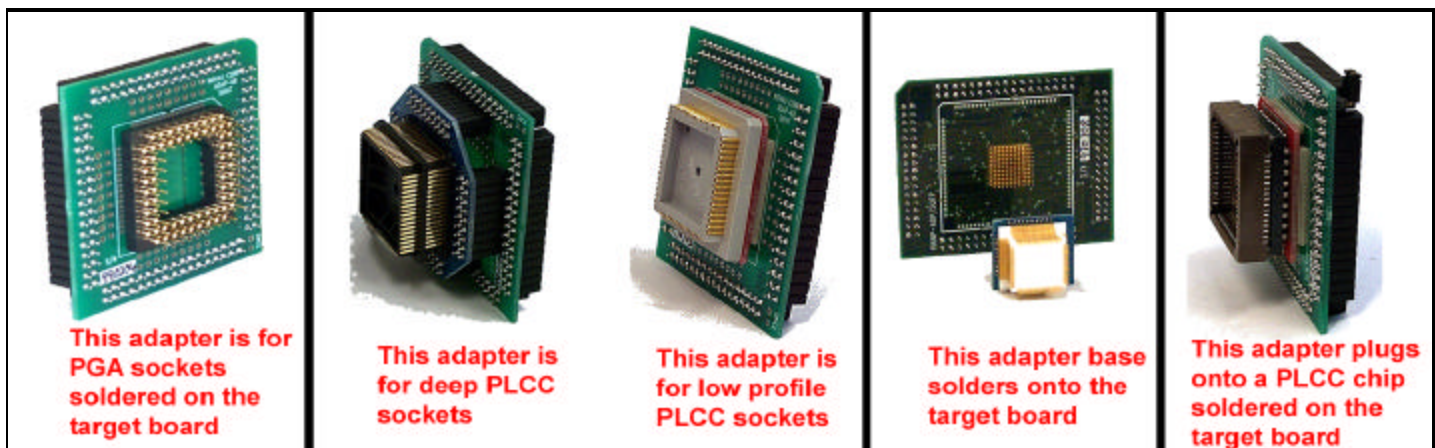
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### Emulator to Target Adapters and Accessories

#### Adapter Summary - Use this chart to select the correct adapter

Target Footprint	PGA Socket	PLCC Socket	QFP Footprint Solder-Down Adapter	PLCC Chip
8XC196JQ, JR, and JT	JR -ADP-52/PGA 52 Pin PGA Package	JR -ADP-52/PGA/EDI 52 Pin PLCC Package		JR -ADP-52/CLIP 52 Pin clip-over
		JR -ADP-52/PLCC/ET 52 Pin PLCC Package		
Replacement Socket		EDI/52PG/PL-L 52 pin		
8XC194 and 8XC198 Adapters		198-ADP-52/PLCC/EDI 52 Pin	198KC-ADP-80QFP/EDI 80 Pin QFP	
			ET/EPP-080-QF08-LG 80 Pin QFP	
Replacement Socket			ET/EPP-080-QF08-SM 80 Pin QFP	
			EDI/80QF-R-31-SD 80 Pin QFP	

\* These are representative pictures.



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### Adapter Summary - Use this chart to select the correct adapter (continued)

Target Footprint	PGA Socket	PLCC Socket	QFP Footprint Solder-Down Adapter	PLCC Chip
<b>8XC196KB, KC and KD Adapters</b>	196-KC-ADP-68/PGA 68 Pin PGA Package	KC-ADP-68/PLCC/EDI 68 Pin Low Profile	196-KC-80QFP/EDI 80 Pin QFP Package	KC-ADP-68/CLIP/EDI 68 Pin clip-over
	196-KC-ADP-68/PGA/FLIP 68 Pin PGA Package	KC-ADP-68/PLCC/ET 68 Pin Deep Socket	ET/EPP-080-QF08-LG 80 Pin QFP Package	KB-ADP-68/CLIP/EDI 68 Pin clip-over
<b>Replacement Sockets</b>			196-KC-68/CQFP/EDI 68 pin	
			EDI/80QF-R-31-SD 80 Pin QFP ET/EPP-080-QF08-SM 80 Pin QFP EDI/168QF50-1-SD 68 Pin	
<b>8XC196KQ, KR, KS and KT Adapters</b>	196-KR-ADP-68/PGA 68 Pin PGA Package	KR-ADP-68/PLCC/EDI 68Pin Low Profile		KR-ADP-68/CLIP/EDI 68 Pin clip-over
		KR-ADP-68-PLCC/ET 68 Pin Deep Socket		
<b>8XC196NT</b>	196-NT -ADP-68/PGA 52 Pin PGA Package	NT -ADP-68/PLCC/ET 68 Pin Deep Socket		NT -ADP-68/CLIP/EDI 68 Pin clip-over
		NT -ADP-68/PLCC/EDI 68 Pin Low Profile		
<b>8XC196 NP and NU Adapters</b>			196NP-ADP-100 Pin QFP	
			196NP-ADP-100 Pin QFP	
			196NP-ADP-100 pin SQFP	
			196NP-ADP-100 pin SQFP	
<b>Replacement Sockets</b>			EDI/100QFR26-SD 100 pin	
			ET/EPP-100-QF06-SM 100 pin	
			EDI/100QF520-SD 100 pin	
			ET/EPP-100-QF49-SM 100 pin	

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### Emulator to Target Adapters and Accessories

#### 8XC196JQ, JR and JT - 52-pin PLCC

52-pin PGA socket	This adapter has a PGA socket on the bottom and the emulator connectors on the top. The 0.1-inch grid pattern is standard for through-hole PLCC sockets with pin 1 at the center of one side. This can be plugged into a PGA socket on the target which makes a solid connection to a target socket. This adapter is also used for PLCC plug type adapters.	<b>EMUL196-PC/JR-ADP-52/PGA</b>
52-pin PLCC socket	Includes EMUL196-PC/JR-ADP-52/PGA and EDI/ 51PG/PL-L. This combination performs the same function as EMUL196/JR-ADP-52/ET. Extra bottom subassemblies (EDI/ 52PG/PL-L) are available separately.	<b>EMUL196-PC/JR-ADP-52/PGA/ EDI</b>
52-pin replacement PLCC socket	A replacement 52-pin adapter, PGA socket to PLCC, for the EMUL196-PC/JR-ADP-52/PGA/ED, listed above.	<b>EDI/ 52PG/PL-L</b>
52-pin PLCC socket	A 52-pin adapter for the JQ, JR and JT.	<b>EMUL196-PC/JR-ADP-52/PLCC/ET</b>
52-pin clip-over	An adapter that clips over the user's soldered-in 52-pin PLCC 196JQ, JR and JT. This option supports ONCE mode, which disables the target controller.	<b>EMUL196-PC/JR-ADP-52/CLIP</b>

#### 8XC194 and 8XC198 - 52-pin PLCC

52-pin PLCC socket	A 52-pin adapter for emulating the 8XC194 or 8XC198 with the KC/KD pod. Recommended for low profile sockets. The bottom subassembly portion solders to user's board.	<b>EMUL196-PC/198-ADP-52/PLCC/EDI</b>
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### 8XC194 and 8XC198 - 80-pin QFP

80-pin QFP adapter	Contact Nohau for availability. An 80-pin QFP rectangular adapter for the 194 or 198 if “no connect” pins are floating. The bottom subassembly portion solders to user’s board. An additional solder-down base is available; part number EDI/80QF-R-31-SD.	<b>EMUL196-PC/ KC-ADP- 80QFP/EDI</b>
80-pin replacement QFP adapter	A replacement 80-pin QFP solder-down adapter for the EMUL196-PC/ KC-ADP-80QFP/EDI, listed above.	<b>EDI/80QF-R-31-SD</b>
80-pin QFP adapter	An 80-pin QFP rectangular for the 194 or 198 if “no connect” pins are floating. The bottom subassembly portion solders to user’s board. An additional solder-down base is available; part number EPP-080-QF08-SM.	<b>ET/ EPP-080- QF08-LG</b>
80-pin replacement QFP adapter	A replacement 80-pin QFP solder-down adapter for the ET/ EPP-080-QF08-LG, listed above.	<b>ET/EPP-080- QF08-SM</b>

### 8XC196KB, KC and KD - 68-pin PLCC

68-pin PGA socket	This adapter has a PGA socket on the bottom and the emulator connectors on the top. The 0.1-inch grid pattern is standard for through-hole PLCC sockets with pin 1 at the center of one side. This can be plugged into a PGA socket on the target which makes a solid connection to a target socket. This adapter is also used for PLCC plug type adapters.	<b>EMUL196- PC/KC-ADP- 68/PGA</b>
*	Discontinued part.	EMUL196- PC/KC-ADP- 68/PGA/ MCK
*	Discontinued part.	MCK/ ADP- 68PGA/PLCC
68-pin low profile PLCC socket	A 68-pin adapter recommended for low profile PLCC sockets.	<b>EMUL196- PC/KC-ADP- 68/PLCC/EDI</b>
68-pin deep PLCC socket	A 68-pin adapter recommended for deep PLCC sockets.	<b>EMUL196- PC/KC-ADP- 68/PLCC/ET</b>
68-pin clip-over adapter for KC and KD	An adapter that clips over user’s soldered-in 68-pin PLCC 196KC, KD. This option supports ONCE mode, which disables the target controller.	<b>EMUL196- PC/KC-ADP- 68/CLIP/EDI</b>
68-pin clip-over adapter for KB	An adapter that clips over the user’s soldered-in 68-pin PLCC 196KB. This option supports ONCE mode, which disables the target controller.	<b>EMUL196- PC/KB-ADP- 68/CLIP/EDI</b>



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**8XC196KB, KC and KD - 80-pin QFP**

80-pin QFP footprint	Contact Nohau for availability. An 80-pin QFP rectangular adapter for the 196KB, KC and KD. The bottom subassembly portion solders to user's board. An additional solder-down base is available: part number EDI/80QF-R-31-SD.	<b>EMUL196-PC/ KC-ADP- 80QFP/EDI</b>
80-pin replacement QFP footprint	A replacement 80-pin QFP solder-down adapter for the EMUL196-PC/ KC-ADP-80QFP/EDI, listed above.	<b>EDI/80QF-R-31-SD</b>
80-pin QFP footprint	An adapter for rectangular 80-pin QFP 196KB, KC and KD. The bottom subassembly portion solders to user's board. Extra bottom subassemblies (EPP-080-QF08-SM) are available separately.	<b>ET/ EPP-080- QF08-LG</b>
80-pin replacement QFP footprint	A replacement 80-pin QFP solder-down adapter for the ET/ EPP-080-QF08-LG, listed above.	<b>ET/EPP-080- QF08-SM</b>

**8XC196KB, KC and KD - 68-pin CQFP**

68-pin CQFP footprint	Contact Nohau for availability. A 68-pin CQFP square adapter for the 196KC and KD. An additional solder-down base is available: part number EDI/68QF50-1-SD.	<b>EMUL196-PC/ KC-ADP- 68/CQFP/EDI</b>
68-pin replacement CQFP footprint	A replacement 68-pin CQFP solder-down adapter for use with the EMUL196-PC/ KC-ADP-68/CQFP/EDI, listed above.	<b>EDI/68QF50-1-SD</b>

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### 8XC196KB, KC and KD - 68-pin PGA

68-pin PGA Flip socket	This adapter for the 196KB, KC, and KD has a PGA socket on the bottom and the emulator connectors on the top. The 0.1-inch grid pattern is for through-hole PLCC sockets with pin 1 at the corner. This can be plugged into a PGA socket on the target which makes a solid connection to a target socket. This adapter is also used for PLCC plug type adapters.	<b>EMUL196-PC/ KC-ADP- 68/PGA/FLIP</b>
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### 8XC196KQ, KR, KS and KT - 68-pin PLCC

68-pin PLCC with PGA socket	This adapter has a PGA socket on the bottom and the emulator connectors on the top. The 0.1-inch grid pattern is standard for through-hole PLCC sockets with pin 1 at the center of one side. This can be plugged into a PGA socket on the target which makes a solid connection to a target socket. This adapter is also used for PLCC plug type adapters.	<b>EMUL196- PC/KR-ADP- 68/PGA</b>
*	Discontinued part.	EMUL196- PC/KR-ADP- 68/PGA/MCK
*	Discontinued part.	MCK/ ADP- 68PGA/PLCC
68-pin low profile PLCC socket	This is a PLCC plug adapter suitable for low profile PLCC sockets mounted on the target board.	<b>EMUL196- PC/KR-ADP- 68/PLCC/EDI</b>
68-pin deep PLCC socket	This is a PLCC plug adapter suitable for deep PLCC sockets mounted on the target board.	<b>EMUL196- PC/KR-ADP- 68/PLCC/ET</b>
68-pin clip- over adapter	An adapter that clips over the user's soldered-in 68-pin PLCC 196KQ, KR, KS and KT. This option supports ONCE mode, which disables the target controller.	<b>EMUL196- PC/KR-ADP- 68/CLIP/EDI</b>

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### 8XC196NT - 68-pin PLCC

68-pin PGA socket	This adapter has a PGA socket on the bottom and the emulator connectors on the top. The 0.1-inch grid pattern is standard for through-hole PLCC sockets with pin 1 at the center of one side. This can be plugged into a PGA socket on the target which makes a solid connection to a target socket. This adapter is also used for PLCC plug type adapters.	<b>EMUL196-PC/NT-ADP-68/PGA</b>
*	Discontinued part.	EMUL196-PC/NT-ADP-68/PGA/MCK
*	Discontinued part.	MCK/ ADP-68PGA/PLCC
68-pin low profile PLCC socket	This is a PLCC plug adapter suitable for low profile PLCC sockets mounted on the target board.	<b>EMUL196-PC/NT-ADP-68/PLCC/EDI</b>
68-pin deep PLCC socket	This is a PLCC plug adapter suitable for deep PLCC sockets mounted on the target board.	<b>EMUL196-PC/NT-ADP-68/PLCC/ET</b>
68-pin clip-over adapter	An adapter that clips over the user's soldered-in 68-pin PLCC 196NT. This option supports ONCE mode, which disables the target controller.	<b>EMUL196-PC/NT-ADP-68/CLIP/EDI</b>

### 8XC196NP and NU - 100-pin QFP

100-pin QFP footprint	A 100-pin QFP rectangular adapter for the NP or NU. The bottom subassembly portion solders to user's board. An additional solder-down base is available: part number EDI/ 100QFR26-SD.	<b>EMUL196-PC/NP-ADP100-QFP/EDI</b>
100-pin replacement QFP footprint	A replacement 100-pin QFP solder-down adapter for the EMUL196-PC/ NP-ADP100-QFP/EDI, listed above.	<b>EDI/ 100QFR26-SD</b>
100-pin QFP footprint	A 100-pin QFP rectangular adapter for the NP or NU. An additional solder-down base is available: part number ET/ EPP-100-QF06-SM.	<b>EMUL196-PC/NP-ADP100-QFP/ET</b>
100-pin replacement QFP footprint	A replacement 100-pin QFP solder-down adapter for the EMUL196-PC/ NP-ADP100-QFP/ET, listed above.	<b>ET/ EPP-100-QF06-SM</b>

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### 8XC196NP and NU - 100-pin SQFP

100-pin SQFP footprint	A 100-pin SQFP square adapter for the NP or NU. An additional solder-down base is available: part number EDI/ 100QF520-SD.	<b>EMUL196-PC/ NP-ADP100- SQFP/EDI</b>
100-pin replacement SQFP footprint	A replacement 100-pin QFP solder-down adapter for the EMUL196-PC/ NP-ADP100-SQFP/EDI, listed above.	<b>EDI/ 100QF520- SD</b>
100-pin SQFP footprint	A 100-pin SQFP square adapter for the NP or NU. An additional solder-down base is available : part number ET/ EPP-100-QF49-SM.	<b>EMUL196-PC/ NP-ADP100- SQFP/ET</b>
100-pin replacement SQFP footprint	A replacement 100-pin QFP solder-down base for the EMUL196-PC/ NP-ADP100-SQFP/ET, listed above.	<b>ET/ EPP-100- QF49-SM</b>

### Isolator Adapters

Set of four isolator strips	A set of four isolator strips that can be inserted between the pod and the adapter with individual DIP switches for each pin. This is useful for diagnosing signal conflicts between the pod and the target.	<b>EMUL-PC/ISO- 160</b>
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### Extender

Header/pin extender	The SSQ-117-03-GD is a header/pin combination that when used in sets of four, raises the pod above the target board. This is especially useful when debugging targets installed in boxes or in places where there is not enough free space around the target for the pod. This accessory only has enough pins to support the 132-pin pods. Contact Nohau if you need support for chips with more than 132 pins.	<b>SAMTEC/SSQ- 117-03-GD</b>
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## Software Support Packages

### Compiler Packages

#### ChipTools, Inc.

*Debugger Interface, Simulators*

ChipView-196 is a Windows-based Instruction Set Simulator, keypress-compatible with Borland's Turbo Debugger. ChipView-196 supports C and PL/M compilers and assemblers from IAR, Intel, and TASKING (BSO/Tasking). (This product simulates instruction set execution, but does not simulate peripherals.)

ChipView-x96 Instruction Set—Single-user license	<b>CVX96W-ISS</b>
ChipView-x96 for EMUL196 Debugger—Single-user license	<b>CVX96W-NOH</b>
ChipView-x96 ROM Monitor Debugger—Single-user license	<b>CVX96W-M</b>
ChipView-x96 Combo of M and SS—Single-user license	<b>CVX96W-C</b>
ChipView-x96 Combo of M, NOH, and ISS—Single-user license	<b>CVX96W-CN</b>
Single product Subscription Service (includes updates and technical support for 12 months). When ordering a subscription, please include the original part number and serial number.	<b>Subscription-1</b>
CV196-ISS (DOS) to CVX96W-ISS Product upgrade.	<b>CVX96W-ISS-UPG</b>
CV196-M (DOS) to CVX96W-M Product upgrade.	<b>CVX96W-M-UPG</b>
CV196-C (DOS) to CVX96W-C Product upgrade.	<b>CVX96W-C-UPG</b>

ChipView and ChipTools are registered trademarks of ChipTools, Inc.

#### IAR Systems Software, Inc.

*C-Compilers, Assembler*

C compiler kit includes: C compiler, assembler, linker, and librarian.

**IAR/ EWX96**

\* Multiple licenses available. Minimum of four (individual price times four and take a 20% discount).

**IAR/EWX96-4**

IAR is a registered trademark of IAR Systems.

#### TASKING/Intermetrics Microsystems Software, Inc

*C-Compiler, Assembler*

80C196 C-compiler, assembler, linker, EDE package for Windows 3.1x/95/NT. PC-TK0622.

**TASKING/C196  
PKG**

TASKING is a registered trademark of TASKING Software Inc.

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### Hardware Upgrades

This service is available only if the unit to be upgraded is a working unit in good condition, as judged by Nohau Corporation. Standard emulator upgrades available: Shadow RAM size, speed. Standard trace upgrades available: speed, conversion to data trace. Data trace upgrades available: memory size, speed. Pod upgrades available: speed, emulation RAM size. There is no upgrade available to change between pod types (such as a change from a KC/KD pod to a KR/NT pod). Upgrade warranty period is three months or until the expiration of the original warranty period, whichever is longer.

#### Standard emulator board upgrades:

**Example:** Upgrade to E256-20 from E64-16.

#### Trace board upgrades:

**Example:** Upgrade to DTR128-25 from TR32-16.

#### Pod board upgrades:

**Example:** Upgrade to KR/NT-20 from KR/NT-16.

### Shared Board Cross-Certification

EMUL196-PC standard emulator boards and EMUL196-PC trace boards can be cross-certified to operate with the EMUL16/300 (EMUL16 and EMUL300) family. Pods and software for operating the emulator in a different family must be purchased separately. (See the price list for the particular emulator family). Warranty period is three months or until the expiration of the original warranty period, whichever is longer.

Frequencies for other EMUL-PC emulator families may not correspond directly to frequency ratings in EMUL196-PC. For new purchases, you might need to purchase a higher frequency rating than you require for the EMUL196. For cross-certifying a customer's existing board, an additional hardware upgrade might be required to operate up to desired frequency in both families. Boards can be certified to operate in multiple families. A separate charge applies for certification into each family.

**Emulator board** Cross-certification to another family for Standard Emulator.  
cross-certification

**Trace board** Cross-certification to another family for Trace.  
cross-certification

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### Extended Hardware Warranties

Purchase of each major EMUL196-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 been allowed to lapse. An additional year of coverage may also be purchased each year at the time an additional paid year's coverage ends.

It is the customer's responsibility to renew hardware warranties. No warranty expiration reminder notices will be sent to customers by Nohau.

#### Extended Hardware Warranties

Coverage must be continuous and can not be reinstated after the lapse of coverage.

**Emulator extended warranty coverage, 1 yr** For a Shadow RAM emulator.

**Trace extended warranty coverage, 1 yr** For a standard or data trace option.

**Pod extended warranty coverage, 1 yr.** For a pod. 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.

### Repairs

#### Special Emulation Chip Replacement Charge

Special emulation chip replacements are only available as part of repairs performed by Nohau Corporation. No special emulation chip is available to be separately shipped, but must always be shipped as part of a pod.

Special emulation chip replacement charge

#### Non-Warranty Repairs

The following is for repair service for units beyond an applicable initial one-year warranty period, repairs not covered by that warranty, or for customers who have elected not to carry an extended hardware warranty.

**Hourly rate**

**Minimum charge**

**Maximum charge**

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**Discontinued Parts**

Some parts are still available for order even though they are officially discontinued. Please contact Nohau in California for part availability at 1-888-886-6428 or sales@nohau.com.

WS/W12021	WS/W12032	ET/ EPP-160-QF07-LG	POD-196-256-CA/CB-16
WS/W12019	WS/W12033	ET/ EPP-160-QF07-SM	POD-196-256-CA/CB-20
WS/W12020	WS/W12034	POD-196-256-EA-32	POD-196-1M-CA/CB-16
WS/W12014	WS/W12035	POD-196-1M-EA-32	POD-196-1M-CA/CB-20
WS/W12016	WS/W9865M	POD-196-2M-EA-32	EMUL196-PC/PRU/EA-32
WS/W12001	WS/W2347	POD-196LC-64-KR/NT-16	EMUL196-PC/CA-ADP-68/PGA
WS/W12002	WS/W12018	POD-196LC-64-KR/NT-20	EMUL196-PC/CA-ADP-68/PGA-MCK
WS/W12015	WS/W12029	EMUL196/LC-B	MCK/ADP-68PGA/PLCC
WS/W12031	WS/W9869M	EMUL196/EPC	EMUL196-PC/CA-ADP-68/PLCC/EDI
WS/W12022	WS/W12025	CBL-B-LC25/25	EMUL196-PC/CA-ADP-68/PLCC/ET
WS/W12023	WS/W12027	CBL-E-50/25	EMUL196-PC/CA-ADP-68/CLIP/EDI
WS/W12024	WS/W12028		EMUL196-PC/CB-ADP-84/PGA
WS/W12030	WS/W9876M		EMUL196-PC/CB-ADP-84/PLCC/EDI
WS/W12017			EMUL196-PC/CB-ADP-84/PLCC/ET
			EMUL196-PC/CB-ADP-84/CLIP/EDI
			ES/180-1605-00
			ES/000-4574
			EMUL196-PC/SPRU/KR/NT-20
			EMUL196-/LC-A
			CBL-A-LC25/50



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### DELL COMPUTER OPTION

#### Fully Configured Dell Computer for Your Emulator

In cooperation with Dell Computer Corporation, Nohau offers a complete emulator system. This system will be shipped with the software and hardware (as applicable) installed and tested. Two-week lead-time. Available in the U.S.A. only. No trials or rentals. Subject to Dell Computer Corporation return policy and warranty terms.

See [www.dell.com](http://www.dell.com) for pricing according to configuration specifications.

**EMUL-PC /**

**DELL**

**EMUL-PC /**

**DELL-SETUP**

Setup of Nohau emulator system in Dell computer, including installation and testing.

#### How to Order

1. Call Nohau Corporation Technical Support (1-888-886-6428 or 1-408-866-1820) to confirm proper PC configuration needed.
2. Go to: <http://www.dell.com>. a. Click on "Small Business". b. Click on "My Account Login" and enter: Email: sales@nohau.com Password: nohau. c. Click on the "Systems" tab and choose "Desktops" or "Notebooks". d. Pick a style of system desired. e. Click on "Customize it" or "View Popular Systems". f. When satisfied with your selections, click on the "Printable Summary" tab and print a copy for your records. g. Click on "add to cart". h. Click on "Save cart". i. Exit the Dell website.
3. Choose your Nohau emulator, pod and trace (optional) boards, together with any other hardware or software needed. Issue a purchase order for all pertinent part numbers, including one line item for each Dell system (Part Number: EMUL-PC / DELL) ordered with the corresponding purchase price as shown on your Dell cart sheet.
4. Call Nohau Corporation (1-888-886-6428 or 1-408-866-1820) and ask for the Order Desk.
5. Give the Order Desk attendant your Purchase Order information, together with the Dell cart number for your chosen configuration. Please also fax the printed cart sheet to our Order Department at 1-408-378-8492.

Nohau will place the order with Dell Computer Corporation per your specifications. The system will be shipped to Nohau Corporation for installation and testing of Nohau's hardware and software. When testing is complete, the entire system with emulator installed will be shipped to you. A "Transfer of Ownership" certificate will be mailed to you upon receipt of full payment of your order. Technical support for your Dell system will be provided by Dell Computer Corporation. Technical support for your emulator system will be provided by Nohau Corporation.

### Where to get help

For help in configuring your system, choosing an emulator, a pod board, adapters, a trace card or any other items please contact Nohau or your local representative.

**Telephone:** (888) 886-6428 or (408) 866-1820

**Email:** sales@nohau.com

**Main Fax:** (408) 378-7869

**Website:** www.nohau.com

**Order Department Fax:** (408) 378-8492

Please use this fax number to fax purchase orders

Prices, specifications and availability 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 EMUL196-PC emulator board, trace board, emulator cable, HSP and pod (excluding the special emulator processor) are sold with a one-year warranty, starting from the date of purchase. The special emulation processor on the pod is 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 Corporation be liable for consequential damages.

Third-party software sold by Nohau carry manufacturers' warranties. Technical support to be provided by local Nohau representative, where applicable.

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