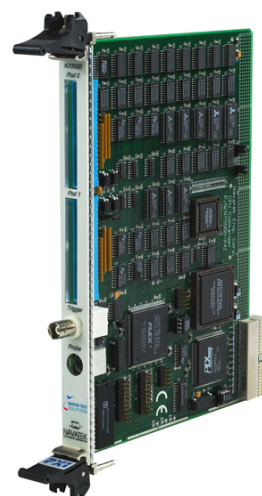# NX5000 SERIES

## ROM EMULATOR PXI CARD

- Supports full speed operation of the UUT with no modifications
- No special fixturing required
- Requires only one generic pod
- Supports 8/16/32 bit ROMs
- New processors can be added with just a software update

## ARCHITECTURE

ROM emulation is a powerful and versatile method of microprocessor testing. ROM emulation has emerged as the technique of choice for microprocessor test and diagnostic applications. A microprocessor-based board is tested by replacing the boot ROMs on the Unit Under Test (UUT) with memory emulation pods. Each pod handles eight bits of the data bus. Processors from 8 to 32 bits can be controlled with one to four pods (even the most advanced CPUs such as the Intel Pentium generally use only an eight-bit boot path). The emulator takes control of the UUT by resetting the processor and, under the test program's control (monitor program), exercises all functions on the board. Synchronization with the UUT is automatic and requires no additional hardware or connections.

ROM emulation uses a high level language that enables the user to focus on development of the test procedure (rather than on learning new opcodes of the tested CPU) allowing rapid transition from one test program development to another with minimum learning time. The controlling link is transparent to the user. No assembly language is required to support the basic functions of the ROM emulation card which include Read, Write, RAM test, ROM CHECKSUM, Fill, Copy, and Move functions. Additionally, basic diagnostics are included to aid in troubleshooting a dead kernel.

## LOGIC PROBE

The logic probe is available to probe UUT nodes beyond the kernel. A powerful node test system allows known good responses from a reference UUT to be stored in a library for immediate comparison against the board under test. Selecting a node test automatically invokes the correct stimulus, captures the results and compares them against the reference library. A PASS or FAIL message can be displayed or further instructions to the operator can be issued, pending the result of each node test.

## FRONT PANEL WINDOW

A Windows GUI is included with built-in functions such as Memory Read/Write, I/O Read/Write, Memory Test, etc. Higher-level functions can also be executed with a single command. A built-in macro language supports easy development of the complex test procedures without the need to learn a programming language.

## PROGRAMMING AND SOFTWARE

The board is supplied with a 32-bit DLL driver. Various interface files provide access to the DLL from programming tools and languages such as ATEasy, LabVIEW, C/C++, Microsoft Visual Basic®, Delphi, and more. The available virtual panel can be used to interactively monitor and control the instrument from a window that displays the instrument's current settings and measurements.
An On-Line help file and PDF User's Guide provides documentation that includes instructions for installing, using and programming the board.

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# NX5000 SERIES

## APPLICATIONS

- Automated Test Equipment (ATE)
- Workstation Service and Repair
- Engineering Evaluation
- Microprocessor Board Emulation

## SPECIFICATIONS

| | |
|---|---|
| **Boot ROM Path** | 8 and 16 bits (NX5000)<br>8, 16, and 32 bits (NX5100) |
| **TRIGGER BUS** | |
| **Output** | Breakpoint, User defined trigger<br>R/W Trigger<br>UUT Trigger<br>Reset Trigger |
| **Input** | GP-In1, GP-In2 status |
| **SUPPORTED ROM TYPES** | |
| **Size** | 64 Kb to 8 Mb |
| **Package** | 28 or 32 pin DIP or PLCC.<br>Other styles available by special request |
| **Access Time** | 55 ns or less |
| **STIMULI OUTPUT** | |
| **Software Controlled Signals** | Sourcing or sinking 60 mA |
| **Reset Overdrive line** | Drive Current 64 mA |
| **Level** | Software selectable high and low pulse |
| **Pulse Width** | 1 ms to 10 s |
| **Microprocesor Emulation Speed** | Maximum rated execution speed with no wait status |
| **Pod Cable Loading** | 100 ohm |
| **Pod Cable Lengths** | NX5000 to Pod: 5 feet<br>Pod to ROM socket: 8" |
| **Number of General Purpose I/O Pins** | 16 bits of general-purpose I/O lines; each line can be configured as input or output. |
| **Logic Probe Specifications** | The optional NT5700- Probe is capable of measuring frequencies, logic levels, edge counts and CRC's. Max sample rate is 100 MS/sec and input impedance is 100 K ohm |
| **Size** | Available in 3U and 6U |
| **Temperature Range** | 0 °C to +85 °C |

Note: Specifications are subject to change without notice

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# NX5000 SERIES

## ORDERING INFORMATION

| | |
|---|---|
| NX5000 | ROM Emulator 8/16 Bits. Requires One Each: NT5200, NT53x0 & NT5900-xxx |
| NX5000-3U | ROM Emulator 8 Bits. Requires One Each: NT5200, NT53x0 & NT5900-xxx (3U PXI) |
| NX5002 | 3U ROM Emulator 8/16-Bit (Requires Two 3U Slots) |
| NX5100 | ROM Emulator 8/16/32 Bits. Requires One Each: NT5200, NT53x0 & NT5900-xxx |
| **ACCESSORY** | |
| NX5104 | 3U Expansion Kit for 32-Bit Support |
| NT5200 | 8-Bit Bench Pod |
| NT5210 | 8-Bit Testhead Fixture Pod |
| NT5220 | 16-Bit Bench Pod |
| NT5230 | 16-Bit Testhead Fixture Pod |
| NT5300 | 28 Pin DIP Cable |
| NT5300R | 28 Pin DIP cable with Reverse Pins |
| NT5310 | 32 Pin DIP Cable |
| NT5310R | 32 Pin DIP Cable with Reverse Pins |
| NT5320 | 40 Pin DIP Cable (16-Bit) |
| NT5320R | 40 Pin DIP Cable (16-Bit) with Reverse Pins |
| NT5320-CLIP | 40 Pin DIP Clip-Over Adapter |
| NT5330 | 32 Pin PLCC Cable <1Mbit |
| NT5330R | 32 Pin PLCC Cable <1Mbit with Reverse Pins |
| NT5340 | 32 Pin PLCC Cable >1Mbit |
| NT5340R | 32 Pin PLCC Cable (16-Bit) >1Mbit with Reverse Pins |
| NT5350 | 44 Pin PLCC Cable (16-Bit) |
| NT5350R | 44 Pin PLCC Cable (16-Bit) with Reverse Pins |
| NT5300-SCKT | ZIF Socket for 28 Pin DIP ROM |
| NT5310-SCKT | ZIF Socket for 32 Pin DIP ROM |
| NT5330-SCKT | ZIF Socket for 32 Pin PLCC ROM <1Mbit |
| NT5340-SCKT | ZIF Socket for 32 Pin PLCC ROM <1Mbit |
| NT5410 | 170 Pin Testhead Wiring Cable Kit |
| NT5420 | Cable Kit for I/O Ports, JTAG & Cross Trigger Bus |
| NT5430 | 80 Pin High Density Cable |
| NT5900-xx | CPU Support Package |
| NT5400 | 170 Pin Receiver Wiring Cable |
| NT5510 | USER RAM upgrade from 32K to 256Kbyte |
| NT5520 | USER RAM upgrade from 32K to 512Kbyte |
| NT5530 | USER RAM upgrade from 32K to 1024Kbyte |
| NX5100-EX | Expansion Kit, Upgrades NX5000 to NX5100 |

| | |
|---|---|
| NX5000-3U-16 | Expansion for NX5000-3U (8 Bit to 16 Bit) |
| NX5000-3U-IO | Expansion for NX5000-3U (I/O Ports) |
| **TRAINING** | |
| NT5000-DS | 2 Days NT5000 Training at Marvin Test Solutions for 1-3 Persons |

Note: The NX5000 Series is supplied by a 3rd party and resold by Marvin Test Solutions.

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# NX5000 SERIES

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