

# NEXTSTEP for Intel Processors

**Title:** NEC Express/II P60ST

**Entry Number:** 1467

**Expiration of Certification:** June 12 1995

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## **Product Vendor:**

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**Keywords:** EISA, PCI, Pentium, NEC, Tower

## **Explanation of Certification**

To ensure a high level of compatibility and support for PC-compatible system configurations, NeXT has developed a process for comprehensively testing specific configurations for compatibility with NEXTSTEP for Intel Processors.

In this process, the NeXT Quality Assurance group subjects each specific system configuration to a suite of compatibility tests. If a system configuration passes the test suite, it is considered *certified*. Only the manufacturing revisions of a system unit and its add-on cards listed in the NeXTAnswers are considered certified. Once a configuration is certified, NeXT creates a detailed NeXTAnswers document (like this one) that lists the specific configuration tested, plus any setup information required to configure the system for NEXTSTEP.

Because of the detailed information that's available on certified configurations, NeXT delivers the best technical support on them. Keep in mind that a system platform might be loosely referred to as "certified" if it has one or more certified configurations, but all the benefits of certification are available only to users of the specific certified configurations.

**Note:** NeXT certification does not necessarily mean a configuration is error-free. Certified systems may contain detected or undetected compatibility problems.

## Overview:

The NEC Express II/P60ST is a high-performance, Pentium $\delta$  based PC with EISA and PCI expansion busses.

## Certified Components:

NeXT has certified the following components(\*):

**System CPU Board(s)**

NEC Express/II P60ST

**CPU Type(s) & Speed(s)**

60 MHz Intel Pentium<sup>tm</sup>

**System RAM**

32MB

**IDE Controller(s)**

none

**SCSI Controller(s)**

Onboard DPT 2022/ax

**SCSI CD-ROM Drive(s)**

NEC 3Xi CD-ROM drive

**Hard Drive(s)**

545MB Conner CP30540

**Floppy Drive(s)**

Integrated 1.44MB 3.5"

**Graphics Adapter(s)**

Diamond Viper PCI with 2MB VRAM

**Serial Port(s)**

Integrated, COM1,COM2

**Parallel Port(s)**

Integrated, LPT1

**Keyboard(s)**

NEC, PS/2 interface

**Mice and Other Pointing Devices**

NEC, PS/2 interface

**LAN Adapter(s)**

Intel EtherExpress 16

**Sound Card(s)**

ProAudio Spectrum 16

**Monitor(s)**

NEC 5fg

(\*) Note that only the firmware and hardware revision numbers specified in the "Technical Specification" section below are certified. Occasionally vendors may modify firmware or hardware characteristics without changing model numbers. Only systems with the specified firmware and hardware revision(s) have been certified.

## Setup and Installation:

### Switch Settings:

Switch block SW3:

- 1: ON Built-in video controller disabled
- 2: OFF Built-in diskette controller enabled
- 3: OFF Password security enabled
- 4: OFF BIOS reprogram allowed
- 5: OFF BIOS reprogram over network allowed
- 6: OFF CMOS settings not cleared

### EISA settings:

Use the EISA Configuration Utility to configure the computer to the following settings:

System - NEC Express/II P60ST System Board

Drive Configurations

Drive A: Type 1.44MB

Drive B: Type None

Primary Controller Drive Types

Hard Drive 1 Type None

Hard Drive 2 Type None

Secondary Controller Drive Types

Hard Drive 3 Type                   None  
Hard Drive 4 Type                   None

Custom Defined Hard Drive 1

Auto Detect Drive Parameters    YES  
Number of Cylinders            0  
Number of Heads                 0  
Number of Sectors per Track    0  
Write Precomp                   0  
Landing Zone                    0

Custom Defined Hard Drive 2

Auto Detect Drive Parameters    NO  
Number of Cylinders            0  
Number of Heads                 0  
Number of Sectors per Track    0  
Write Precomp                   0  
Landing Zone                    0

Custom Defined Hard Drive 3

Auto Detect Drive Parameters    NO  
Number of Cylinders            0  
Number of Heads                 0  
Number of Sectors per Track    0  
Write Precomp                   0  
Landing Zone                    0

Custom Defined Hard Drive 4

Auto Detect Drive Parameters    NO  
Number of Cylinders            0  
Number of Heads                 0  
Number of Sectors per Track    0  
Write Precomp                   0  
Landing Zone                    0

IDE Disk Drive Features

Built-in IDE Controller         Disabled  
IDE DMA Channel Select         DO NOT assign any DMA  
Primary IDE Transfer Mode HD1 Standard PIO  
Primary IDE Transfer Mode HD2 Standard PIO  
Primary IDE Transfer Mode HD3 Standard PIO

Primary IDE Transfer Mode HD4 Standard PIO

#### SCSI Disk Drive Features

Built-in SCSI Smart ROM      Enable ROM addr C8000  
Built-in SCSI Termination      Internal

#### Floppy Diskette Drive Features

Floppy Boot      Enable  
Floppy Write      Enable

#### Port Configurations

Built-in Parallel Setup      I/O 378 (LPT1), IRQ7  
Built-in Parallel Mode      Bi-directional (PS/2 type)  
Built-in Serial 1 Setup      I/O 3F8 (COM1), IRQ4  
Built-in Serial 2 Setup      I/O 2F8 (COM2), IRQ3

#### Misc Configurations

Built-in Mouse Port      Enable  
Built-in Modem      I/O 3E8 (COM3), IRQ4

Typematic Rate      Maximum  
Boot Up Error Messages      Display  
Numlock State at boot      On at boot  
Auto Setup Software      Disable  
Global Caching      Enable  
ISA Video Shadow      Enable  
Memory Gap at 15Meg      Disable  
Extended Memory (KB)      15360  
Monitor Scan Rate      Type1: 640x480@60,800x600@50,1024x768@82 {!}  
Built-in Video      VGA or EGA

#### SCSI - DPT SCSI Host Bus Adapter (PM2x22a/9x)

##### CONTROLLER PARAMETERS

##### Hardware Mapping

ISA I/O Ports      Secondary  
Interrupt Number      15 Edge  
HBA SCSI ID      7

WD1003 Emulation, Drive 0  
SCSI ID                   Disable  
SCSI LUN                   0  
WD1003 Emulation, Drive 1  
SCSI ID                   Disable  
SCSI LUN                   0

SCSI PARAMETERS  
Maximum Transfer Rate     5MB/s\*  
Command Queuing           Enabled\*  
Command Timeout           Enabled

CACHE PARAMETERS  
Cache                      Enabled (Write-Through)  
Maximum Percent Dirty     50%  
Maximum Percent Read-Ahead 30%  
Read-Ahead                Enabled (8 blocks)  
Caching Threshold         16 blocks  
Caching Parameters         EISA Config override

IDPTA410.CFG Version      005d5

\* transfer rates greater than 5 MB/s require good cables and termination. Some SCSI devices do not support command queuing.  
note: these settings are different from those suggested for the DPT 2022 card.

## Technical Specification of Certified System

The following information technically defines the specific configuration NeXT certifies.

**Tested under NEXTSTEP for Intel Processors Release 3.2**  
**Hardware Configuration Information**

**NEC Express/II P60ST**  
Type(s) :     Tower  
Model Number(s) :   ST-3100-2733-CV

**System CPU Board(s)**

NEC Express/II P60ST

BIOS Version: PhoenixBIOS 1.01

BIOS Revision Number: 1.00.17

**CPU Type(s) & Speed(s)**

60 MHz Intel Pentium

**System RAM**

32MB

**IDE Controller(s)**

none\*

\*the NEC Express II/P60ST includes an IDE controller, but this system was certified without an IDE drive.

**SCSI Controller(s)**

DPT 2122/A9x

Interface: EISA (integrated)

BIOS Revision Number: v002.C

Firmware Revision Number(s): v05c.6

**SCSI CD-ROM Drive(s)**

NEC 3Xi CD-ROM (internal)

Model Number: CDR-500

Firmware Rev. 2.5

**Hard Drive(s)**

545MB - Conner CP30540 (SCSI)

**Floppy Drive(s)**

Integrated 1.44MB 3.5"

**Graphics Adapter(s)**

Diamond Viper PCI

Interface: PCI

BIOS Revision Number: 3.10

Chipset: Weitek Power9000

RAMDAC: Brooktree Bt485KPJ135  
VRAM: 2MB

**Serial Port(s)**

Integrated, COM1,COM2

**Parallel Port(s)**

Integrated, LPT1

**Keyboard(s)**

NEC, PS/2 interface  
Model Number:

**Mice and Other Pointing Devices**

NEC, PS/2 interface  
Model Number:

**LAN Adapter(s)**

Intel EtherExpress 16 (\*)  
Interface: ISA adapter  
Connectors: BNC, AUI

**Sound Card(s)**

ProAudio Spectrum 16 (\*)

**Monitor(s)**

NEC 17" color  
Model Number: 5fg (\*)

(\*) NeXT added this item to the configuration to complete certification.

## Known Problems:

### Release 3.2:

- 7 This system uses the Diamond Viper PCI video board. SoftPC is not supported in full screen mode with the Diamond Viper. See NextAnswers document #1573\_Diamond\_Viper.rtf for details.
- 7 NeXTstep requires firmware revision 2.5 for the NEC 3Xi CD-ROM drive.
- 7 This system will sometimes fail to format a floppy for NeXT or Macintosh filesystems.

**Release 3.3:**

7 Upgrading to 3.3 incorrectly upgrades the DPT SCSI driver to the EISA version. The on-board SCSI is not a true EISA device, so the machine will fail to reboot. You must use the ISA version of the driver.

## See Also:

1573\_Diamond\_Viper.rtf

1206\_Intel\_Ether\_Express\_Ethernet\_Adapter.rtf

1457\_DPT\_2022\_EISA SCSI\_Adapter.rtf

1158\_Pro\_Audio\_Spectrum\_16\_Sound\_Adapter.rtf