

NEXTSTEP for Intel Processors

Title: DPT 2012/90 and DPT 2012/95 EISA SCSI Controllers

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Description:

The DPT 2012 SCSI Controller provides NEXTSTEP users with a high performance EISA bus to SCSI interface. Some of the notable features of this card are:

- Up to 16MB of RAM cache
- 33MB/sec EISA transfer
- EISA bus mastering

- SCSI-2 and CCS compliant
- 10MB/sec SCSI sync transfer
- CAM-compliant EATA interface
- Overlapped commands
- Scatter/gather
- Automatic request sense
- RAID support in hardware

Setup and Installation:

It is not necessary to change any jumpers on the DPT 2012/90 from the factory defaults. If you have a DPT 2012/95 with an integrated floppy controller be aware that the floppy is officially unsupported under NEXTSTEP Release 3.1. The floppy controller may be disabled either in hardware via jumper Y20 (short) or in software with the EISA Configuration Utility.

If you were previously using Pre-release 1 reconfigure your DPT 2012 to the settings below before installing Release 3.1 for Intel Processors.

Jumper Settings

Y20 (Floppy Disabled): on (optional, factory setting: off)
Y19 (Option ROM Size): off (factory setting)
Y4 (Factory Use Only): off (factory setting)
Y23 (Firmware ROM Size): on (factory setting)

If the DPT 2012 will not be at the end of the SCSI bus follow the instructions provided with the DPT 2012 to remove the terminating resistors from the card. For more information on SCSI setup refer to NeXTanswer document1109_SCSI_Setup.rtf

Use the EISA Configuration Utility (ECU) to set the following values.

ECU Settings

HARDWARE CONFIGURATION

Hardware Mapping

I/O Ports: Secondary/Disabled

Interrupt Number: 15 - Edge

Floppy Drive: Disabled

Option ROM: Enabled @ C8000h

HBA SCSI ID: 7

WD1003 EMULATION MAPPINGS

Drive 0

SCSI ID: Disabled

SCSI LUN: 0

Drive 1

SCSI ID: Disabled

SCSI LUN: 0

CONTROLLER PARAMETERS

SCSI Parameters

Maximum Transfer Rate: 5MB/s *

External Cable Detection: Yes - 5MB/s

Command Queuing: Enabled **

Command Timeout: Disabled

Cache Parameters

Cache: Enabled (Write-Through) ***

Max. Percentage Dirty: 80%

Max. Percentage Look-Ahead: 80%

Look-Ahead: Enabled (8 blocks)

Cache Threshold: 65535 blocks

Cache Parameters: Use Values Stored on Device

* *10MB/sec requires very good cabling and termination.*

** *Some SCSI devices do not correctly implement Command Queuing and require this feature to*

be Disabled.

*** See note in **Known Problems** regarding setting cache to "Enabled (Write-Back)."

(NeXT's Quality Assurance group tested using this EISA configuration file: !DPTA502.CFG Version: 005D)

Multiple versions of the ECU exist; other versions may present the configuration information in a different format. It should still be possible to match the settings detailed above. If problems are encountered refer to the documentation that came with the DPT 2012 or call DPT Technical Support for assistance.

Known Problems:

- The default IRQ setting of 14 will cause the following error.

```
EATA controller at IRQ 14
```

```
Registering sc0
```

The system will then hang. To recover, use the ECU to reconfigure the non-volatile memory on the DPT card to select the proper IRQ. Unless you are sure that the right answer is something else, set it to IRQ 15, edge triggered. If your ECU diskette doesn't already have the files necessary to set up a DPT card, when you run the ECU and try to configure the card you will be prompted to insert the proper diskette from DPT . Once the card has been set to IRQ 15, your system will probably just boot. If it does not, at the "boot:" prompt, enter "mach_kernel config=Default" and the system will come up, allowing you to run Configure.app and set the DPT configuration to IRQ 15, edge-triggered. If you really do want to run it at something other than IRQ 15, now that the system is up you can do so - first use Configure.app to change the configuration to the new IRQ value, then use ECU to reconfigure the card, and you should be able to reboot and come up using the new IRQ. Remember though that if you do this, you will not be able to boot config=Default again unless you re-run ECU and set the DPT card back to IRQ 15.

· Setting the Cache Parameters in the ECU to enable the cache in write-back mode may result in increased performance. However, any errors that prevent the cache from being written to disk before shutdown (power failure, system panic, etc.) could cause severe data loss.