DP 6333
for
Density Series Systems

Quick
REFERENCE
GUIDE

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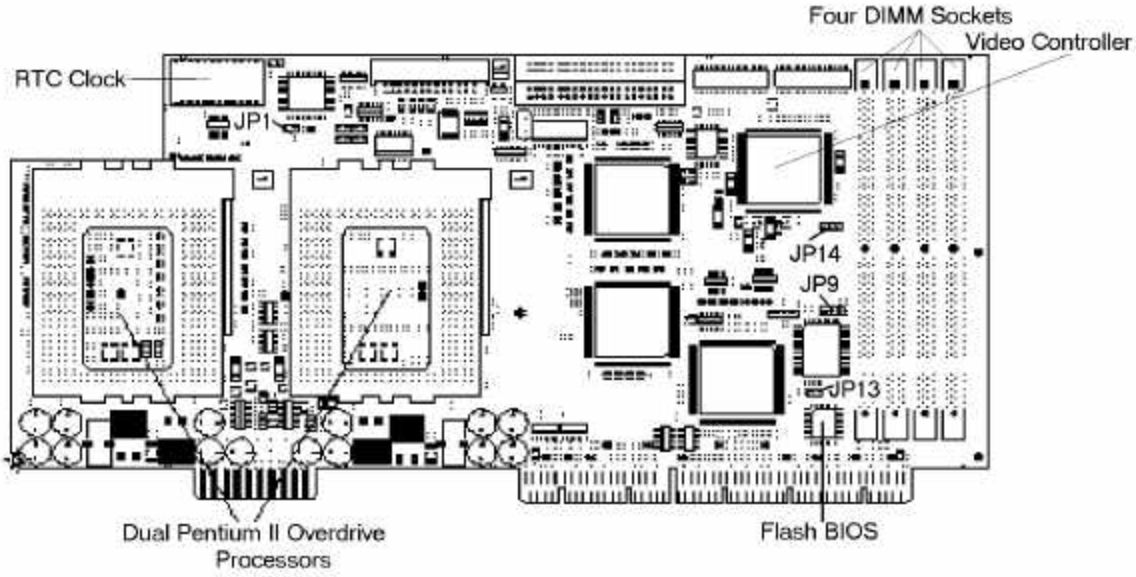
DP 6333 Quick Reference Guide

Overview

DP Series plug-in computers plug into Cubix passive backplanes that are divided into independent groups, allowing the installation of up to four DP Series boards in a single Cubix Density System.

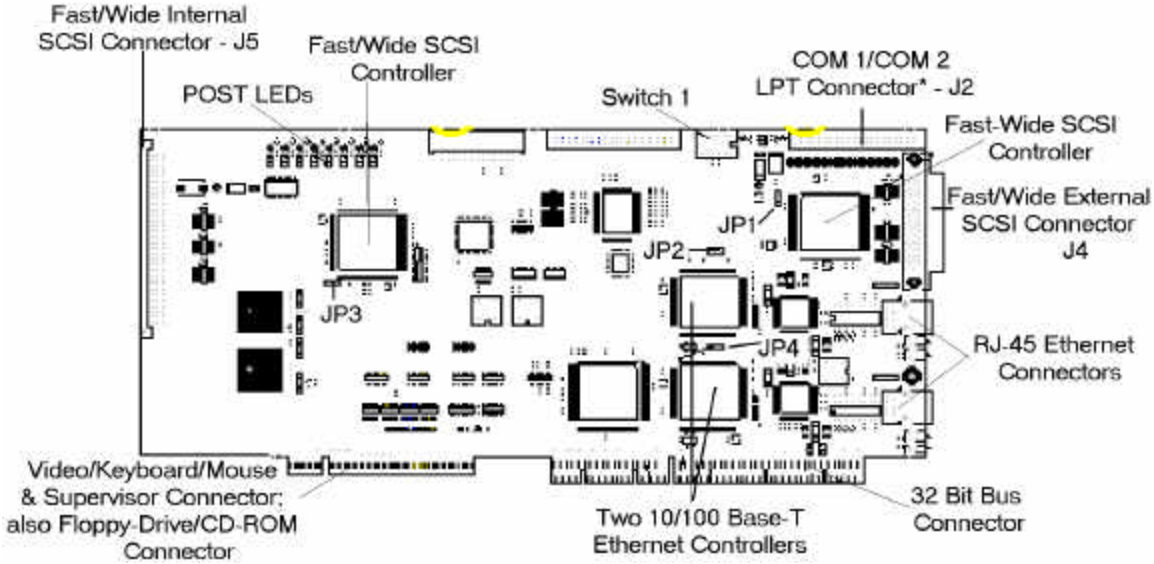
Each Cubix Dual-SMP server consists of a set of two plug-in boards—a processor board and an I/O board. The processor board (see Figure l) contains two Intel® Pentium® II Overdrive processors, memory, and EIDE controllers.

Figure 1 DP 6333 Dual Pentiumâ II Overdrive Processor Board



The I/O board (see Figure 2) is tightly coupled to the processor board across a 32-bit data bus. The I/O board provides two SCSI controllers and two 10/100Mbps Ethernet controllers.

Figure 2 DP 6333 Series I/O Board



*Breakout modules with 40-pin ribbon cables are available.

When installed in the passive backplane of a Cubix Density System, each DP board set is a fully featured dual-Pentium Pro SMP server. The System multiplexor allows multiple DP Series boards in a system (or multiple systems) to share a single floppy disk drive, monitor, keyboard and mouse.

DP Series board sets include on-board video, two serial ports, one parallel port, keyboard and mouse support, memory, floppy and IDE hard drive support. Also included is two integrated Ethernet controllers with a 10/100 Base-T connector, and two SCSI fast/wide adapters.

Chapter 1 - Jumpers & Switch Settings

I/O Board Switch Settings

S1, Positions 1 and 2 - Supervisory Interrupt

The IES module communicates with the DP processors in the subsystem via a hardware interrupt which is IRQ 10. The supervisory interrupt is set with S1 position 1 (for location of S1, see Figure 2). If the DP 6333 board is part of the GlobalVision network, supervisory interrupt is necessary and IRQ 10 must be enabled, i.e. position 1 should be in the “on” position. If this board is not part of’ the GlobalVision network, IRQ 10 is in the “off” position. (The “on” or “off” positions are designated by an arrow clearly marked on the switch.)

In a Cubix Density System, S1 position 2 which is IRQ 15, is not available. Therefore, S1 position 2 should always remain in the “off” position.

S1, Positions 3, 4, 5 and 6 - SCSI Termination

Termination for the SCSI cable is enabled or disabled with a hardware switch on the board. SCSI termination should always be enabled in the Density System, i.e. S1, positions 3, 4, 5 and 6 should always remain in the “off” position. Table 1 defines S1 settings on the DP 6333 Series I/O board.

Table 1 I/O Board - S1 Switch Settings

Function	1	2	3	4	5	6
Supervisory Interrupt IRQ 10 *	On	Off				
Supervisory Interrupt IRQ 15	Off	On				
No Supervisory Interrupt	Off	Off				
*Factory Default Settings	On	Off	Off	Off	Off	Off

I/O Board Jumper Settings

JP2 and JP4 - Ethernet #1 and #2 Controllers

DEC 21140 PCI Fast Ethernet (10/100 Mbps) controllers are integrated onto the DP series I/O card. One controller is provided as a default and two are optionally available for the model DP 6333 Series. The controllers can be disabled via shunts on the I/O card.

JP1 and JP3 - SCSI #1 (external) and #2 (internal) Controllers

The Symbios 875 SCSI controller(s) can be enabled or disabled with hardware jumpers JP1 and JP3. Table 2 defines the jumper settings for the DP 6333 series I/O board.

Table 2 I/O Board Jumpers

Jumper	Function	Jumper 1-2	Jumper 2-3
JP1	SCSI #1 (Symbios 875 Controller)	Enabled	Disabled
JP2	Ethernet #2 (DEC 21140 Chipset)	Enabled	Disabled
JP3	SCSI #2 (Symbios 875 Controller)	Enabled	Disabled
JP4	Ethernet #1 (DEC 21140 Chipset)	Enabled	Disabled

Processor Board Jumper Settings

JP 1 and JP 13 – Updating Flash Memory

When update of the system BIOS is necessary, JP 1 and JP13 must be enabled. Table 3 defines the jumper settings for the flash BIOS upgrade on the DP 6333 series processor board.

Table 3 Flash BIOS and Password Jumpers

Jumper	Function	Jumper ON	Jumper OFF
JP1	BIOS Password	Normal	Disabled
JP13	Flash Reprogram	Enabled	Disabled

Video

A hardware jumper JP14 can be set on the processor board to disable the on-board S3 Trio64V+(765) video controller. If this controller is disabled, an external video controller with a video BIOS at address C0000 hexadecimal must be installed. Table 4 defines the jumper settings for JP 14.

Table 4 Video Enable/Disable Jumper

Jumper	Function	Jumper Pins	Jumper Pins
JP14	S3 Video Enable	1-2	2-3

Other Processor Board Jumpers

Jumpers 3 to 11 are processor dependent, and should not be changed from the factory settings.

Chapter 2 - Memory Configuration & Management

All DP Series memory is provided in 168 pin, 72 bit standard 60ns buffered DIMMs. DIMMs do not need to be installed in pairs, and different sizes may be mixed on a DP. Table 5 shows the Memory map for the SP processor.

Table 5 Memory Map

Memory Range	Size	Use
00000-9FFFF	640KB	Conventional Memory
A0000-AFFFF	64KB	VGA Graphics Buffer
B0000-B7FFF	32KB	MDA Text Buffer
B8000-BFFFF	32KB	VGA/CGA Text Buffer
C0000-C7FFF	32KB	VGA Bios
C8000-DFFFF	96KB	Available
E0000-FFFFF	127KB	System & PCI BIOS

Table 6 defines the boards I/O configuration.

Table 6 I/O Map

ISA Ports	Description
0000-00FF	Various "AT" functions in ISP chip and keyboard controller
01F0-01F7	IDE hard drive interface
02F8-02FF	COM2
03A0	Cubix supervisory interface
03A8-03AF	IES serial port
03B4-03B5	VGA
03BC-03BF	LPT1
03C0-03CF	VGA
03D4-03D5	VGA
03F0-03F7	Floppy / IDE
03F8-03FF	COM1

System Interrupts

The 16 system hardware interrupts on the DP 6333 are represented in Table 7. Interrupts are managed by two standard 8259A Programmable Interrupt Controllers (PICs). Interrupts at IRQ 0 through 7 are located on the main PIC; IRQ 8 through 15 are on the SLAVE PIC.

Table 7 System Interrupts

IRQ	Description	IRQ	Description
0	Timer clock	**8**	Real Time Clock
1	Keyboard	**9**	Redirected IRQ 2
2	Second PIC controller	**10**	IES*
3	COM2	**11**	Set By PCI Plug & Play at boot time
4	COM1	**12**	Available (or PS/2 Mouse)
5	Set By PCI Plug & Play at boot time	**13**	Math Coprocessor
6	Floppy Disk Controller	**14**	Primary IDE Controller
7	LPT1	**15**	Secondary IDE Controller (or IES)

*Available if IES or GlobalVision is not used

DIMM Memory Configurations

Refer to Figure 2 for DIMM locations.

- **All memory is provided in 168 pin, 72 bit standard 60ns buffered DIMMs.**
- **DIMMs do not need to be installed in pairs, and different sizes may be mixed.**

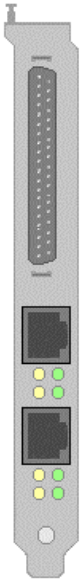
Chapter 3 – Information on Ethernet and SCSI Controllers

Ethernet Adapter

The board is equipped with an integral DEC 21140 PCI fast Ethernet controller with a RJ-45 10/100 BASE-T connector on the mounting bracket at the rear of the board.

The I/O addresses and interrupts are set by the PCI plug and play BIOS at boot time.

Ethernet Adapter LEDs



Near the RJ-45 connector and visible in the mounting bracket are two sets of 4 light emitting diodes (LED) each (see Figure 3).

On the upper LEDs

- The green LED indicates network activity.
- The amber LED indicates a data collision on the network. These LEDs can be useful indicators of network activity.

On the lower LEDs

- The green LED will light when the interface has a valid connection to an Ethernet hub.
- The amber LED will light when the interface is set to 100 Mbit/s.

Figure 3

On-Board SCSI Controller - SCSI Device Installation

The DP 6333 Series I/O board is equipped with **two** independent integrated fast/wide SCSI adapters. The adapters are enabled or disabled and via hardware jumper (see Chapter 1 - Jumper & Switch Settings) .

The SCSI adapters are bus master devices which gain control of the PCI bus to transfer data between the CPU memory and the SCSI devices. The I/0 base address and interrupts are set by the PCI plug and play BIOS at boot time.

A SCSI configuration utility is available on boot-up of the board. Shortly after the SCSI BIOS information displays, the configuration program can be accessed by pressing **Control C**. The configuration utility will allow you to scan the SCSI bus, change configuration options, and view a list of SCSI devices connected to the board.

Note: If the SCSI BIOS is inadvertently turned off in the SCSI configuration utility, turn it back on by holding <CTRL> A when the board is reset.

Chapter 4 - Technical Specifications

Standard Features

- 32-bit PCI bus extension
- 2 - PCI Fast/Wide SCSI controllers
- PCI VGA-compatible video adapter
- One parallel port
- Floppy drive
- Up to 1 GB of ECC RAM
- 2 - 10/100 Mbps PCI Ethernet adapters
- Two serial ports
- Keyboard and mouse support

Table 8 represents the technical specifications for the DP 6333 board.

Table 8 DP 6333 Specifications

Processor	Pentium® II Overdrive 333 MHz
Level 2 Cache	512 Kbytes
Flash BIOS	American Megatrends, Inc. (AMI) Year 2000 Compliant
Chipset	Natoma (Intel FX)
External Bus Interface	32 Bit PCI and ISA
Memory	16 MB to 1GB 168-pin, buffered, 60-nanosecond, ECC DIMMs.
Keyboard Support	PS/2 style keyboard (connected through Density System MUX)
Mouse Support	Logitech compatible PS/2 mouse (connected through Density System MUX)
Ethernet	10/100 Base-T Autosense (1 Standard, 2nd Optional) DEC 21140 Ethernet Driver Support for Win95, WIN NT, Win 3.1/DOS
Video	SVGA 1MB Video RAM S3 TRIO64+ Video Chip Driver Support for Win95, WIN NT, Win 3.1/DOS
SCSI Controller	Fast/Wide SCSI II Interface Max. Transfer Rate 20 Mbits / sec. Symbios 875 Chipset Driver Support for Win95, WIN NT, Win 3.1
Secondary IDE Controller	For CD-ROM Support (Connected through Density System MUX)
COM Ports	Super I/O Chip, SMC FDC37C669 16C550 Compatible Baud rates 300 to 230 KB
LPT1 Port	Centronics compatible interface (Super I/O Chip, SMC FDC37C669)
Power Requirements Total Power +5 VDC +12 VDC - 12 VDC	 59.2 Watts 11 Amps Max 0.3 Amps max .05 Amps max

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