

**TI6NL**  
**Pentium II 440LX ATX Motherboard**  
**User's Manual**  
Version 2.0A



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## Chapter 1 Introduction

This manual is designed to give you information on the TI6NL motherboard. It is divided into the following sections:

- **Introduction**
- **Specifications**
- **Hardware Description**
- **Configuring the Motherboard**
- **Installation**
- **BIOS Configuration**
- **LANDesk User's Guide**

### Checklist

Please check that your package is complete and contains the items below. If you discover damaged or missing items, please contact your dealer.

- The TI6NL Motherboard
- 1 IDE ribbon cable
- 1 floppy ribbon cable
- 1 CD containing Intel LANDesk or System Monitor software, PIIX4 Bus Master IDE driver and utilities, or 1 diskette containing PIIX4 Bus Master IDE driver and flash utility. ***Your package comes with Intel's LANDesk or System Monitor software if your motherboard supports the onboard hardware monitoring IC.***

## Chapter 2 Specifications

The TI6NL is a high-performance ATX 440LX motherboard with a Slot 1 connector for Pentium® II processors. It offers flexibility in terms of CPU frequency and main memory type and size. The main features of the motherboard consist of the following:

### CPU Socket

Slot 1

### Processor

Intel Pentium II 233/266/300/333MHz

### L2 Cache

CPU integrated L2 cache

### Main Memory

Four 168-pin DIMM sockets

Memory types: Extended Data Output (EDO) DRAM, SDRAM (Synchronous DRAM)

Memory size: 8MB, 16MB, 32MB, 64MB, 128MB

### Chipset

Intel 82440LX with built-in PCI-IDE

### Super I/O

Onboard super I/O is an Winbond W83977TF that provides:

- Two 16550 UART compatible serial ports
- One parallel port (ECP/EPP compatible)
- One floppy controller (2.88MB compatible)
- One IrDA port
- Keyboard Controller

### PCI Bus Master IDE Controller (Ultra DMA/33)

Onboard PCI Bus Master IDE (Ultra DMA/33) controller with two connectors for up to four IDE devices in two channels, supporting faster data transfer rates, enhanced IDE devices such as Tape Backup and CD-ROM drives, PIO Mode 3/4 and Bus Mastering Ultra DMA/33 (*You have to install the Bus Master IDE driver to enable this feature.*)

**BIOS**

Award BIOS with ISA Plug and Play (PnP) extension, DMI, bootable CD-ROM and power-management features

**Mouse Connector**

PS/2 type

**Keyboard Connector**

PS/2 type

**USB Connector**

2 ports onboard

**Win95-shut-off**

Allows shut-off control from within Windows 95

**Onboard AGP Slot**

The AGP (Accelerated Graphics Port) slot supports AGP compliant VGA cards to achieve rich 3D and video graphics display. AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping.

**Expansion Slots**

Five PCI 32-bit slots

Two ISA 16-bit slots

One AGP slot

**Form Factor**

ATX, 12" x 6.9" (30.5cm x 17.5cm)

## **Chapter 3 Hardware Description**

This chapter briefly describes each of the major features of the TI6NL motherboard. The layout of the board in Figure 1 shows the location of the key components. The topics covered in this chapter are as follows:

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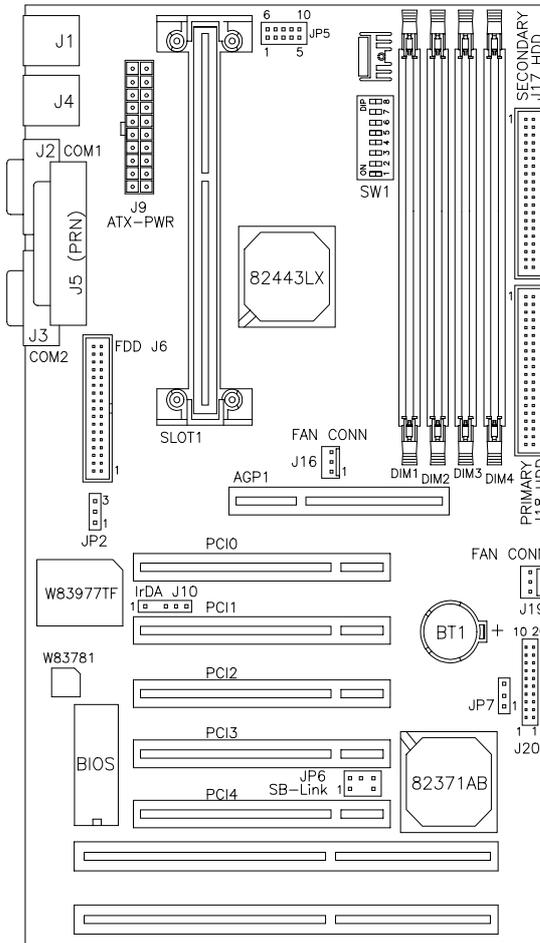


Figure 1: Layout of the TI6NL Motherboard

### 3.1 Processor

The TI6NL motherboard is designed to take a Pentium II processor running 233MHz/266MHz/300MHz/333MHz with its Slot 1 processor connector.

### 3.2 L2 Cache

The L2 cache is integrated in the Pentium II processor.

### 3.3 Main Memory

The TI6NL motherboard supports four 168-pin DIMM (Dual In-line Memory Module) sockets to form a memory configuration from 8MB to 512MB. DIMM modules can be 8MB, 16MB, 32MB, 64MB and 128MB in SDRAM or EDO DRAM. In populating the DIMM sockets, DIMM1, DIMM2, DIMM3 and DIMM4 bank can be populated first. Refer to the following table on how to configure the memory.

**168-pin DIMM (3.3V) : SDRAM or EDO DRAM**

Bank0 (DIMM4)	Bank1 (DIMM3)	Bank2 (DIMM2)	Bank3 (DIMM1)	Total Memory
8MB	----	----	----	8MB
16MB	----	----	----	16MB
32MB	----	----	----	32MB
64MB	----	----	----	64MB
128MB	----	----	----	128MB
8MB	8MB	----	----	16MB
16MB	8MB	----	----	24MB
32MB	8MB	----	----	40MB
64MB	8MB	----	----	72MB
128MB	8MB	----	----	136MB
8MB	8MB	8MB	----	24MB
8MB	8MB	8MB	----	24MB
16MB	8MB	8MB	----	32MB
32MB	8MB	8MB	----	48MB
64MB	8MB	8MB	----	80MB
128MB	8MB	8MB	----	144MB
8MB	8MB	8MB	8MB	32MB
16MB	8MB	8MB	8MB	40MB
32MB	8MB	8MB	8MB	56MB
64MB	8MB	8MB	8MB	88MB
128MB	8MB	8MB	8MB	152MB

## 168-pin DIMM (3.3V) SDRAM or EDO DRAM (continued)

Bank0 (DIMM4)	Bank1 (DIMM3)	Bank2 (DIMM2)	Bank3 (DIMM1)	Total Memory
16MB	16MB	-----	-----	32MB
32MB	16MB	-----	-----	48MB
64MB	16MB	-----	-----	80MB
128MB	16MB	-----	-----	144MB
16MB	16MB	8MB	-----	40MB
32MB	16MB	8MB	-----	56MB
64MB	16MB	8MB	-----	88MB
128MB	16MB	8MB	-----	152MB
16MB	16MB	8MB	8MB	48MB
32MB	16MB	8MB	8MB	64MB
64MB	16MB	8MB	8MB	96MB
128MB	16MB	8MB	8MB	160MB
16MB	16MB	16MB	-----	48MB
32MB	16MB	16MB	-----	64MB
64MB	16MB	16MB	-----	96MB
128MB	16MB	16MB	-----	160MB
16MB	16MB	16MB	8MB	56MB
32MB	16MB	16MB	8MB	72MB
64MB	16MB	16MB	8MB	104MB
128MB	16MB	16MB	8MB	168MB
16MB	16MB	16MB	16MB	64MB
32MB	16MB	16MB	16MB	80MB
64MB	16MB	16MB	16MB	112MB
128MB	16MB	16MB	16MB	176MB
32MB	32MB	-----	-----	64MB
64MB	32MB	-----	-----	96MB
64MB	32MB	-----	-----	96MB
128MB	32MB	-----	-----	160MB
32MB	32MB	8MB	-----	72MB
64MB	32MB	8MB	-----	104MB
128MB	32MB	8MB	-----	168MB
32MB	32MB	8MB	8MB	80MB
64MB	32MB	8MB	8MB	112MB
128MB	32MB	8MB	8MB	176MB
32MB	32MB	16MB	-----	80MB
64MB	32MB	16MB	-----	112MB
128MB	32MB	16MB	-----	176MB

168-pin DIMM (3.3V) SDRAM or EDO DRAM (continued)

Bank0 (DIMM4)	Bank1 (DIMM3)	Bank2 (DIMM2)	Bank3 (DIMM1)	Total Memory
32MB	32MB	16MB	16MB	96MB
64MB	32MB	16MB	16MB	128MB
128MB	32MB	16MB	16MB	192MB
32MB	32MB	32MB	-----	96MB
64MB	32MB	32MB	-----	128MB
128MB	32MB	32MB	-----	192MB
32MB	32MB	32MB	32MB	128MB
64MB	32MB	32MB	32MB	160MB
128MB	32MB	32MB	32MB	224MB
64MB	64MB	-----	-----	128MB
128MB	64MB	-----	-----	192MB
64MB	64MB	8MB	-----	136MB
128MB	64MB	8MB	-----	200MB
64MB	64MB	8MB	8MB	144MB
128MB	64MB	8MB	8MB	208MB
64MB	64MB	16MB	-----	144MB
128MB	64MB	16MB	-----	208MB
64MB	64MB	16MB	16MB	160MB
128MB	64MB	16MB	16MB	224MB
64MB	64MB	32MB	-----	160MB
128MB	64MB	32MB	-----	224MB
64MB	64MB	32MB	32MB	192MB
128MB	64MB	32MB	32MB	256MB
64MB	64MB	64MB	-----	192MB
128MB	64MB	64MB	-----	256MB
64MB	64MB	64MB	64MB	256MB
128MB	64MB	64MB	64MB	320MB
128MB	128MB	128MB	-----	384MB
128MB	128MB	128MB	128MB	512MB

### 3.4 BIOS

The BIOS on the TI6NL motherboard provides the standard BIOS functions plus the following additional features:

#### 1. ISA Plug and Play (PnP) Extension

Unlike PCI cards that are Plug and Play, ISA cards require setting jumpers to resolve hardware conflicts. To make a computer system PnP, an ISA PnP standard is established and supported by new operating systems, such as Windows 95. Under Windows 95, the motherboard BIOS must have an ISA PnP extension to support new ISA PnP cards.

#### 2. Power Management

The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor. The BIOS fully conforms to ACPI (Advanced Configuration and Power Interface) specification.

### 3.5 Onboard AGP Slot

The AGP (Accelerated Graphics Port) slot supports AGP compliant VGA cards to achieve rich 3D and video graphics display. AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping.

### 3.6 Optional Winbond W83781D Hardware Monitoring IC

The W83781D is a hardware status monitoring IC that is used to monitor several hardware parameters including power supply voltages, fan speeds, and temperatures, which are very important for a high-end computer system to work stable and properly. The 48-pin LQFP-package IC is fully software compatible with Intel LDCM.

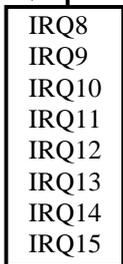
### 3.7 Onboard Multi-I/O

The onboard multi-I/O chip, W83977TF, supports a keyboard controller (AMI copyright), two serial ports, one parallel port, one floppy controller and one IrDA port. The serial ports are 16550 UART compatible. The parallel port features high-speed EPP/ECP mode. The floppy controller supports up to 2.88 MB format.

### 3.8 Interrupt Request (IRQ) Lines

There is a total of 15 IRQ lines available on the motherboard. Peripheral devices use an interrupt request to notify the CPU for the service required. The following table shows the IRQ lines used by the devices on the motherboard:

<u>Level</u>	<u>Function</u>
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
	Real Time Clock
	Software Redirected to Int 0Ah
	Reserved
	Reserved
	Reserved
	Co-Processor
	Primary IDE
	Secondary IDE
IRQ3	INTERRUPT
IRQ4	Serial Port #1
IRQ5	INTERRUPT
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1



### 3.9 Onboard PCI-IDE

The PCI-IDE controller is a part of the 82440LX PCIset. It supports PIO mode 3/4 and bus mastering Ultra DMA/33. The peak transfer rate of PIO mode 3/4 can be as high as 17MB/sec. Using HDDs that support Ultra DMA/33, the peak transfer rate can reach 33MB/sec. There are two IDE connectors - primary IDE and secondary IDE. With two devices per connector, up to four IDE devices can be supported.

### 3.10 DMA Channels

There are seven DMA channels available on the motherboard. Only DMA2 is used by the floppy controller. In the case that ECP mode on the parallel port is utilized, DMA1 or DMA3 will be used.

### 3.11 I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There is a total of 1K port address space available. The following table lists the I/O port addresses used on the motherboard.

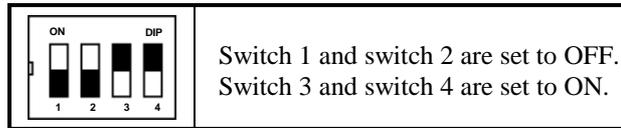
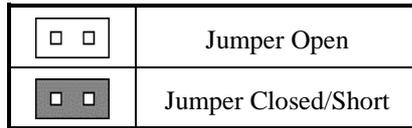
Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock,, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
2F8h - 2FFh	Serial Port #2(COM2)
378h - 3FFh	Parallel Port #1(LPT1)
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

## Chapter 4 Configuring the Motherboard

The following sections describe the necessary procedures and proper jumper settings to configure the TI6NL motherboard. For the locations of the jumpers, refer to Figure 2.

- 4.1 CPU Frequency Select: SW1(1-8)..... 14
- 4.2 Clear CMOS Select: JP7..... 14

The following examples show the conventions used in this chapter.



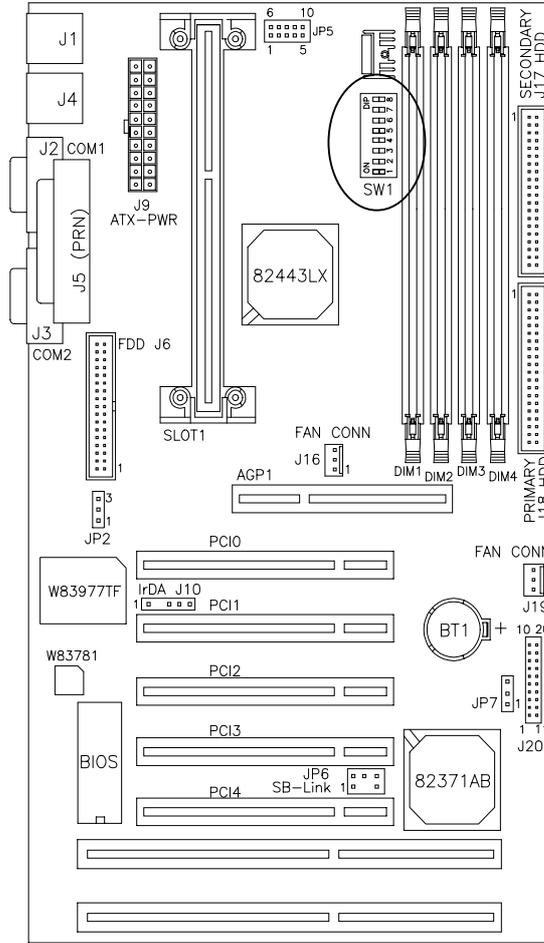


Figure 2: Jumper Location on the TI6NL

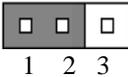
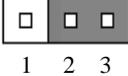
### 4.1 CPU Frequency Select: SW1(1-8)

Refer to the following table for the correct setting to match the CPU frequency.

Pentium II CPU FREQ.	SW1(1-8)	Switch Settings
Pentium II 233MHz		1 2 3 4 5 6 7 8 off off off off on off off on
Pentium II 266MHz		1 2 3 4 5 6 7 8 off off off off off on on on
Pentium II 300MHz		1 2 3 4 5 6 7 8 off off off off off on off on
Pentium II 333MHz		1 2 3 4 5 6 7 8 off off off off off off on on

### 4.2 Clear CMOS Select: JP7

Use JP7, a 3-pin header, to clear the contents of the CMOS RAM. Do not clear the CMOS RAM unless it is absolutely necessary. You will lose your password, etc.

JP7	Jumper Setting	Function
	pin 1-2: short	Normal
	pin 2-3: short	Clear CMOS

**NOTE:** To clear CMOS, the ATX-power connector should be disconnected from the motherboard.

## Chapter 5 Installation

This chapter describes the interface that the TI6NL provides for creating a working system. Refer to Figure 3 for the location of the connectors.

The following items are covered in this chapter:

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5.6 J6: Floppy Drive Connector .....	19
5.7 J9: ATX Power Supply Connector .....	20
5.8 J10: IrDA Connector .....	20
5.9 J16: CPU Fan Power Connector .....	20
5.10 J18, J17: EIDE Connectors .....	21
5.11 J19: Chassis Fan Power Connector.....	23
5.12 J20: Front Bezel Connectors .....	23
Speaker: Pins 1 - 4	
Power LED and Keylock: Pins 11 - 15	
ATX Power ON Switch: Pins 7 and 17	
Turbo LED Connector: Pins 8 and 18	
Reset Switch: Pins 9 and 19	
Hard Disk Drive LED Connector: Pins 10 and 20	
5.13 JP2: Wake on LAN Connector .....	25
5.14 JP5: CPU Voltage Testing Connector .....	25
5.15 JP6: SB-Link Connector.....	26

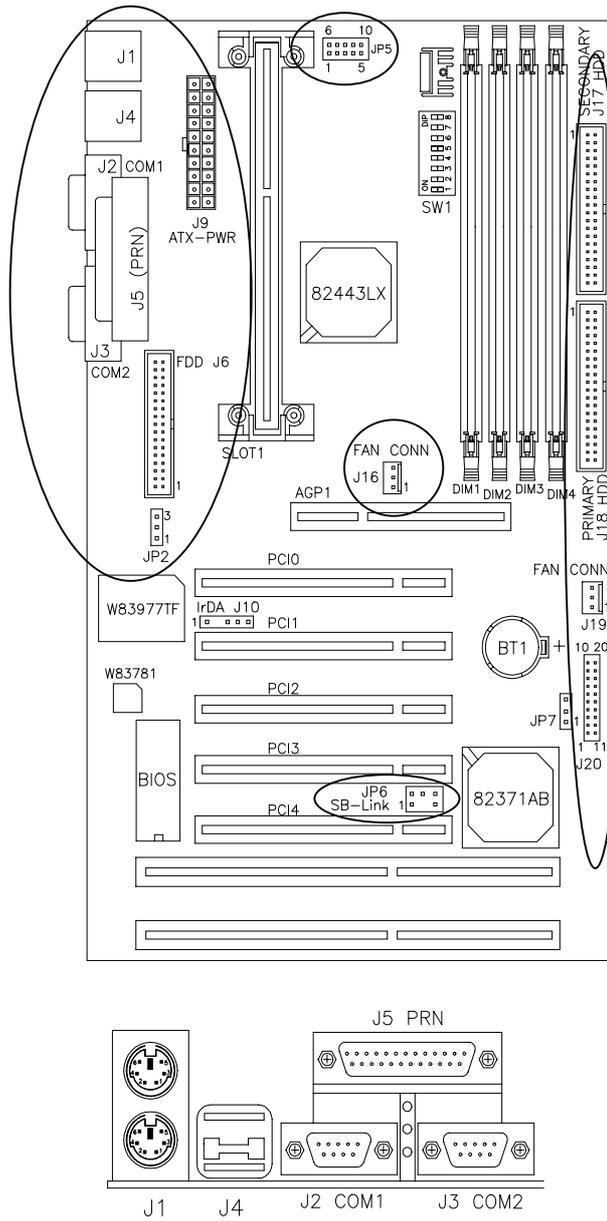


Figure 3: Connector Location on the TI6NL

## 5.1 I/O Connectors

The I/O connectors connect the TI6NL to the most common peripherals. To attach cables to these connectors, carefully align Pin 1 of the cables to that of the connectors. Refer to Figure 4 for the location and orientation of the connectors.

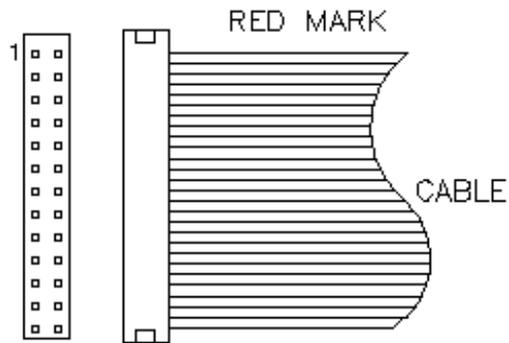
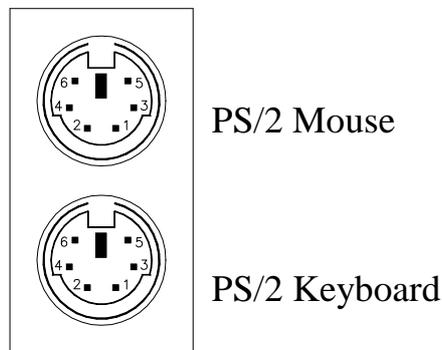


Figure 4: Orientation of the I/O Connector

## 5.2 J1: PS/2 Keyboard and PS/2 Mouse Connectors



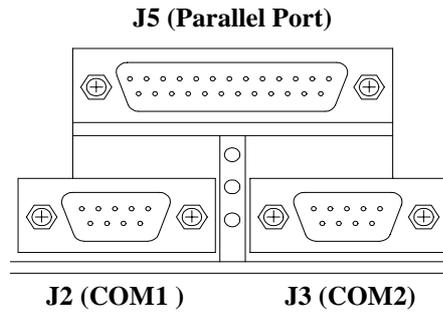
Below are the pin-out assignments of the connectors.

Signal Name	Keyboard	Mouse	Signal Name
Keyboard data	1	1	Mouse data
N.C.	2	2	N.C.
GND	3	3	N.C.
5V	4	4	5V
Keyboard clock	5	5	Mouse Clock
N.C.	6	6	N.C.

### 5.3 J2, J3: Serial Ports

The onboard serial ports of the TI6NL, J2 and J3, are two DB-9 external connectors. The following table shows the pin-out assignments of the these connectors.

Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	6	DSR, Data set ready
RXD, Receive data	2	7	RTS, Request to send
TXD, Transmit data	3	8	CTS, Clear to send
DTR, Data terminal ready	4	9	RI, Ring indicator
GND, ground	5	10	Not Used



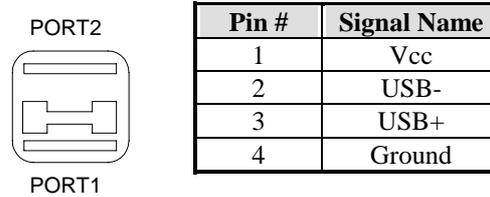
### 5.4 J5: Parallel Port Connector

J5 is a DB-25 external connector as seen in the above figure. The following table describes the pin- out assignments of this connector.

Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	N/A	N/A

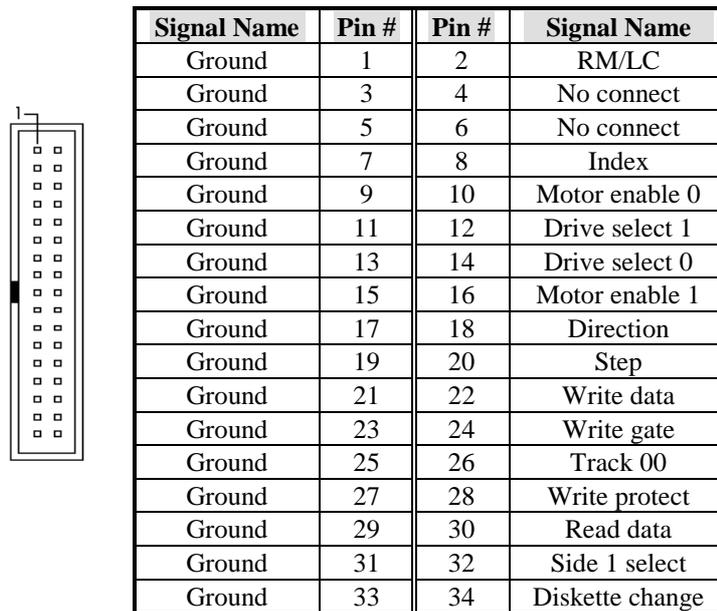
### 5.5 J4: USB Connector

J4 is the standard USB external connector consisting of two ports. USB support allows connections of up to 64 plug and play external peripherals per channel. The following table shows the pin outs of these ports.



### 5.6 J6: Floppy Drive Connector

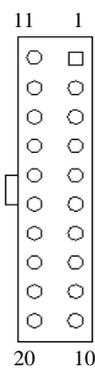
J6 of the TI6NL is a 34-pin header and will support up to 2.88MB floppy drives. The following table shows its pin-out assignments.



### 5.7 J9: ATX Power Supply Connector

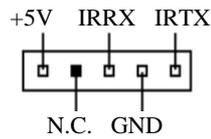
J9 is a 20-pin ATX power supply connector. Refer to the following table for the pin out assignments.

Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V



### 5.8 J10: IrDA Connector

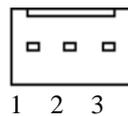
This connector is used for an IrDA connector that supports infrared wireless communication.



J10 Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

### 5.9 J16: CPU Fan Power Connector

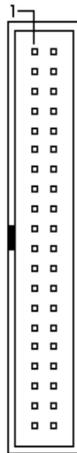
J16 is a 3-pin header for the CPU fan power connector. The fan must be a 12V fan.



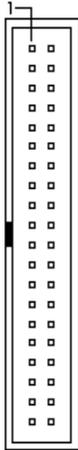
J16 Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

## 5.10 J18, J17: EIDE Connectors

J18: Primary IDE Connector



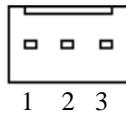
Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

**J17: Secondary IDE Connector**

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK1	29	30	Ground
MIRQ0	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

### 5.11 J19: Chassis Fan Power Connector

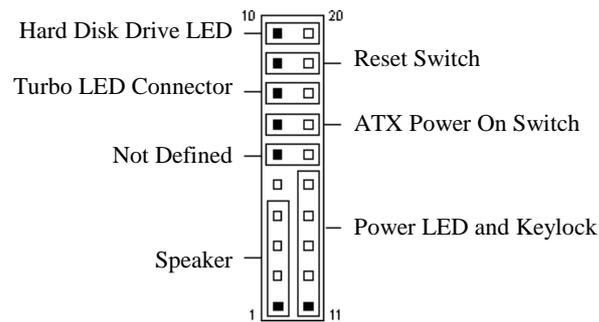
J19 is a 3-pin header for the CPU fan power connector. The fan must be a 12V fan.



J19 Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

### 5.12 J20: Front Bezel Connectors

The front bezel of the case has a control panel which provides light indication of the computer activities and switches to change the computer status. J20 is a 20-pin header that provides interfaces for the following functions.



#### Speaker: Pins 1 - 4

This connector provides an interface to a speaker for audio tone generation. An 8-ohm speaker is recommended.



J20 Pin #	Signal Name
1	Speaker out
2	No connect
3	Ground
4	+5V

**Power LED and Keylock: Pins 11 - 15**

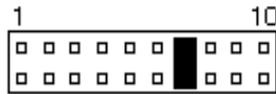
The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.



J20 Pin #	Signal Name
11	Power LED
12	No connect
13	Ground
14	Keylock
15	Ground

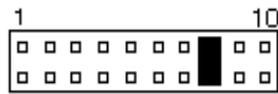
**ATX Power ON Switch: Pins 7 and 17**

This 2-pin connector is an “ATX Power Supply On/Off Switch” on the motherboard that connects to the power switch on the case. When pressed, the power switch will force the motherboard to power on. When pressed again, it will force the motherboard to power off.



**Turbo LED Connector: Pins 8 and 18**

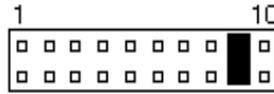
There is no turbo/deturbo function on the motherboard. The Turbo LED on the control panel will always be On when attached to this connector.



J20 Pin #	Signal Name
8	5V
18	Ground

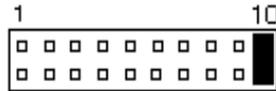
**Reset Switch: Pins 9 and 19**

The reset switch allows the user to reset the system without turning the main power switch Off and then On. Orientation is not required when making a connection to this header.



**Hard Disk Drive LED Connector: Pins 10 and 20**

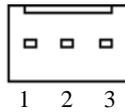
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



J20 Pin #	Signal Name
10	Ground
20	5V

**5.13 JP2: Wake on LAN Connector**

JP2 is a 3-pin header for the Wake on LAN function on the motherboard. The following table shows the pin out assignments of this connector. Wake on LAN will function properly only with an ATX power supply with 5VSB that has 200mA.



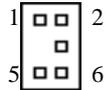
JP2 Pin #	Signal Name
1	+5VSB
2	Ground
3	Wake on LAN

**5.14 JP5: CPU Voltage Testing Connector**

JP5 is a 10-pin connector used for testing CPU voltages. *This connector should not be short/closed.*

### 5.15 JP6: SB-Link Connector

The following table shows the pin out assignments of this connector. This connector is used for the Creative Sound AWE64D PCI sound card.



A diagram of a 6-pin connector. The pins are arranged in a vertical column. The top two pins are labeled '1' on the left and '2' on the right. The bottom two pins are labeled '5' on the left and '6' on the right. The middle two pins are unlabeled.

JP6 Pin #	Signal Name
1	GNTA#
2	Ground
3	No Connect
4	REQA#
5	Ground
6	SERIRQ#

## Chapter 6 BIOS Configuration

This chapter describes the different settings available in the Award BIOS. The topics covered in this chapter are as follows:

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## **6.1 BIOS Introduction**

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel/Cyrix/AMD processors in a standard IBM-AT compatible I/O system. The BIOS provides critical low-level support for standard devices such as disk drives, serial and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

## **6.2 BIOS Setup**

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST(Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press <DEL> to Enter Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

ROM PCI/ISA BIOS  
 CMOS SETUP UTILITY  
 AWARD SOFTWARE, INC.

<b>STANDARD CMOS SETUP</b>	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time, Date, Hard Disk Type	

The section below the setup items of the Main Menu displays the control keys for this menu. Another section at the bottom of the Main Menu just below the control keys section displays information on the currently highlighted item in the list.

*NOTE:* After making and saving system changes with Setup, you find that your computer cannot boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default.

*We strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability.*

### 6.3 Standard CMOS Setup

“Standard CMOS Setup” choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

ROM PCI/ISA BIOS STANDARD CMOS SETUP AWARD SOFTWARE, INC.								
Date (mm:dd:yy) : <b>Mon</b> , Dec 1 1996								
Time (hh:mm:ss) : 00 : 00 : 00								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	Auto	0	0	0	0	0	0	Auto
Primary Slave	None	0	0	0	0	0	0	-----
Secondary Master	None	0	0	0	0	0	0	-----
Secondary Slave	None	0	0	0	0	0	0	-----
Drive A	: 1.44M, 3.5in				Base Memory		: 640K	
Drive B	: None				Extended Memory		: 15360K	
Floppy 3 Mode Support	: Disabled				Other Memory		: 384K	
Video	: EGA / VGA				Total Memory		: 16384K	
Halt On	: All Errors							
ESC : Quit			↑ ↓ → ← : Select			Item PU / PD / + / - : Modify		
F1 : Help			(Shift) F2 : Change Color					

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

#### Date

The date format is:

**Day :** Sun to Sat  
**Month :** 1 to 12  
**Date :** 1 to 31  
**Year :** 1994 to 2079

To set the date, highlight the “Date” field and use the PageUp/ PageDown or +/- keys to set the current time.

**Time**

The time format is: **Hour : 00 to 23**  
**Minute : 00 to 59**  
**Second : 00 to 59**

To set the time, highlight the “Time” field and use the <PgUp>/<PgDn> or +/- keys to set the current time.

**Primary HDDs / Secondary HDDs**

The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the “Master” and the second is the “Slave”.

To enter the specifications for a hard disk drive, you must select first a “Type”. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 45 are predefined. Type “User” is user-definable. For the Primary Master/Slave as well as Secondary Master/Slave, you can select “Auto” under the TYPE and MODE fields. This will enable auto detection of your IDE drives and CD-ROM drive during POST.

Press <PgUp>/<PgDn> to select a numbered hard disk type or type the number and press the <Enter> key. The hard disk will not work properly if you enter incorrect information for this field. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually. If you select Type User, related information is asked to be entered to the following items.

**CYLS :** Number of cylinders  
**HEAD :** Number of read/write heads  
**PRECOMP :** Write precompensation  
**LANDZ :** Landing zone  
**SECTOR :** Number of sectors  
**SIZE :** Automatically adjust according to the configuration  
**MODE (for IDE HDD only) :** Auto  
Normal (HD < 528MB)  
Large (for MS-DOS only)  
LBA (HD > 528MB and supports  
Logical Block Addressing)

*NOTE:* The specifications of your drive must match with the drive table. The hard disk will not work properly if you enter incorrect information in these fields. If your hard disk drive type is not matched or listed, you can use *Type User* to define your own drive type manually.

**Drive A / Drive B**

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB 1.2MB 720KB 1.44MB 2.88MB  
5.25 in. 5.25 in. 3.5 in. 3.5 in. 3.5 in.

**Floppy 3 Mode Support**

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5-inch diskette. You have four options to choose:

Disabled	No 3 mode floppy drive installed. (default)
Drive A	Installed 3 mode drive at drive A.
Drive B	Installed 3 mode drive at drive B.
Both	Installed 3 mode drive at drive A and B.

**Video**

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

**Halt On**

This field determines whether the system will halt if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All errors	The system boot will not be halted for any error that may be detected. (default)
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a keyboard or disk error; it will stop for all others.

## 6.4 BIOS Features Setup

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

ROM / PCI ISA BIOS BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Drive	: Enabled	DC000-DFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI /VGA Palette Snoop	: Disabled		
OS Select For DRAM>64MB	: Non-OS2		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### Virus Warning

This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

*NOTE: Many disk diagnostic programs which attempt to access the boot sector table can cause the virus warning. If you will run such a program, disable the Virus Warning feature.*

### CPU Internal Cache / External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are *Enabled*.

**Quick Power On Self Test**

This choice speeds up the Power On Self Test (POST) after you power up the system. If it is set to *Enabled*, BIOS will skip some items. By default, this choice is *Enabled*.

**Boot Sequence**

This field determines the drive that the system searches first for an operating system. The options are :

A, C, SCSI	D, A, SCSI	SCSI, C, A
C, A, SCSI	E, A, SCSI	C only
C, CDROM, A	F, A, SCSI	LS/ZIP, C
CDROM, C, A	SCSI, A, C	

The default value is *A, C, SCSI*.

**Swap Floppy Drive**

This item allows you to determine whether to enable Swap Floppy Drive or not. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to *Disabled*.

**Boot Up Floppy Seek**

When enabled, the BIOS will seek whether or not the floppy drive installed has 40 or 80 tracks. 360K type has 40 tracks while 760K, 1.2M and 1.44M all have 80 tracks. By default, this field is set to *Enabled*.

**Boot Up NumLock Status**

This allows you to activate the NumLock function after you power up the system. By default, the system boots up with *NumLock* On.

**Boot Up System Speed**

This has no function and selects the default system speed (*High*).

**Gate A20 Option**

This field allows you to select how Gate A20 is worked. The Gate A20 is a device used to address memory above 1 MB. By default, this field is set to *Fast*.

**Typematic Rate Setting**

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to *Disabled*.

**Typematic Rate (Chars/Sec)**

When the typematic rate is enabled, the system registers repeated keystrokes speeds. You can select speed range from 6 to 30 characters per second. By default, this item is set to **6**.

**Typematic Delay (Msec)**

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to **250msec**.

**Security Option**

This field allows you to limit access to the System and Setup. The default value is **Setup**. When you select **System**, the system prompts for the User Password every time you boot up. When you select **Setup**, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

**PCI/VGA Palette Snoop**

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When this field is enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

**OS Select for DRAM > 64MB**

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is **NON-OS/2**.

**Video BIOS Shadow**

This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

**C8000 - CBFFF Shadow/DC000 - DFFFF Shadow**

Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether optional ROM will be copied to RAM or not.

## 6.5 Chipset Features Setup

This Setup menu controls the configuration of the motherboard chipset.

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE INC.			
Auto Configuration	: Enabled	CPU Warning Temperature	: 66°C/151°F
DRAM Speed Selection	: 60ns	Current CPU Block Temp.	: 41°C/ 105°F
MA Wait State	: Slow	Current CPU/Chips Block Temp.	: 27°C/ 80°F
DRAM Integrity Mode	: Non-ECC	Current System Temp.	: 34°C/ 93°F
CPU To PCI IDE Posting	: Enabled	Current Chassis Fan Speed	: 2789 RPM
System BIOS Cacheable	: Enabled	Current CPU Fan Speed	: 2045 RPM
Video BIOS Cacheable	: Enabled	VCCP (V):	1.98 V VTT (V) : 1.50 V
Video RAM Cacheable	: Disabled	VCC3 (V):	3.45 V + 5 V : 4.99 V
8 Bit I/O Recovery Time	: 4	+12 V :	12.46 V -12 V : -12.54 V
16 Bit I/O Recovery Time	: 3	-5V :	- 5.21 V
Memory Hole At 15MB	: Disabled	ESC : Quit	↑ ↓ → ← : Select Item
Passive Release	: Enabled	F1 : Help	PU/PD/+/- : Modify
Delayed Transaction	: Disabled	F5 : Old Values	(Shift) F2 : Color
AGP Aperture Size (MB)	: 64	F6 : Load BIOS Defaults	
SDRAM RAS-to-CAS Delay	: Slow	F7 : Load Setup Defaults	
SDRAM RAS Precharge Time	: Slow		
SDRAM CAS Latency Time	: 3		

### Auto Configuration

This field predefined values for DRAM, cache timing according to CPU type and system clock. When this field is enabled, the predefined items will become read-only.

### DRAM Cycle Speed Selection

This field sets the DRAM cycle speed. The options are 60ns and 70ns. By default, this field is set to **60ns**.

### MA Wait State

This field sets the wait state of the memory address. The settings are *Fast* and *Slow*. By default, this field is set to **Slow**.

### CPU to PCI IDE Posting

When enabled, the CPU to PCI IDE posting cycles are treated as normal I/O write transactions. The default setting is **Enabled**.

### System BIOS Cacheable

When enabled, access to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is disabled.

**Video BIOS Cacheable**

When enabled, access to video BIOS addressed at C0000H to C7FFFH are cached, provided that the cache controller is disabled.

**Video RAM Cacheable**

Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

**8 Bit I/O Recovery Time**

This option specifies the length of the delay (in sysclks) inserted between consecutive 8-bit I/O operations. The settings are 1, 2, 3, 4, 5, 6, 7, or 8. The default setting is **4**.

**16 Bit I/O Recovery Time**

This option specifies the length of the delay (in sysclks) inserted between consecutive 16-bit I/O operations. The settings are 1, 2, 3, 4, 5, 6, 7, or 8. The default setting is **3**.

**Memory Hole at 15MB Addr.**

In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to *Disabled*.

**Passive Release**

When enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

**Delayed Transaction**

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. The default setting is *Disabled*.

**AGP Aperture Size (MB)**

The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The options available are 4M, 8M, 16M, 32M, 64M, 128M and 256M. The default setting is **64M**.

**SDRAM RAS-to-CAS Delay**

This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. The default setting is *Slow*.

**SDRAM RAS Precharge Time**

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. *Fast* gives faster performance; and *Slow* gives more stable performance. The default setting is *Slow*.

**SDRAM CAS Latency Time**

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

**CPU Warning Temperature**

This field sets the threshold temperature at which an alert is sounded through the system's speaker. The CPU temperature is monitored by the onboard thermal sensor to prevent the CPU from overheating.

**Current CPU/Chips Block Temp. / Current System Temp.**

These read-only fields reflect the functions of the optional hardware thermal sensor that monitors the chip blocks and system temperatures to ensure the system runs stable.

**Current Chassis / CPU Fan Speed**

These optional and read-only fields show the current speeds in RPM (revolution per minute) for the CPU fan and Chassis fan as monitored by the optional hardware monitoring IC.

**VCCP / VTT / VCC3**

These optional and read-only fields show the current voltages in the voltage regulators and power supply as monitored by the optional hardware monitoring IC.

### 6.6 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn off video display after a period of inactivity.

ROM PCI/ISA BIOS (2A59IM29)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

Power Management	: Disabled	** Reload Global Timer Events **
PM Control by APM	: Yes	IRQ3 (3-7, 9-15), NMI
Video Off Method	: V/H SYNC +Blank	Primary IDE 0
Video Off After	: Standby	Primary IDE 1
MODEM Use IRQ	: 3	Secondary IDE 0
Doze Mode	: Disabled	Secondary IDE 1
Standby Mode	: Disabled	Floppy Disk
Suspend Mode	: Disabled	Serial Port
HDD Power Down	: Disabled	Parallel Port
Throttle Duty Cycle	: 62.5%	
VGA Active Monitor	: Enabled	
IRQ 8 Break Suspend	: Disabled	
Soft-Off by PWR-BTTN	: Instant-Off	
Resume by Ring	: Disabled	
Resume by Alarm	: Disabled	
		ESC : Quit            ↑ ↓ → ← : Select Item
		F1 : Help            PU/PD/+/- : Modify
		F5 : Old Values      (Shift) F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

#### Power Management

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

- Disabled                                      No power management
- Min. Power Saving                          Minimum power management
- Max. Power Saving                          Maximum power management. Only available for SL CPU
- User Define                                   Each of the ranges are from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min. (Default)

*NOTE: In order to enable the CPU overheat protection feature, the Power Management field should not be set to Disabled.*

### **PM Control by APM**

This field allows you to use the Advanced Power Management device to enhance the Max. Power Saving mode and stop the CPU's internal clock. If the Max. Power Saving is not enabled, this will be preset to NO.

### **Video Off Method**

This field defines the Video Off features. There are three options.

V/H SYNC + Blank Default setting, blank the screen and turn off vertical and horizontal scanning.

DPMS Allows the BIOS to control the video display card if it supports the DPMS feature.

Blank Screen This option only writes blanks to the video buffer.

### **Video Off After**

As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank.

### **Modem Use IRQ**

This field names the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. By default, the IRQ is set to 3.

### **Doze Mode**

When enabled, and after the set time of system inactivity, the CPU clock will run at a slower speed while all other devices still operate at full speed.

### **Standby Mode**

After the selected period of system inactivity, the fixed disk drive and the video shut off while all other devices still operate at full speed.

### **Suspend Mode**

When enabled, and after the set time of system inactivity, all devices except the CPU will be shut off.

### **HDD Power Down**

When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

### **Throttle Duty Cycle**

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

**VGA Active Monitor**

When enabled, any video activity restarts the global timer for Standby mode. The default setting is *Enabled*.

**IRQ 8 Break Suspend**

You can enable or disable monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

**Soft-Off by PWR-BTTN**

This field defines the power-off mode when using an ATX power supply. The Instant-Off mode allows powering off immediately upon pressing the power button. In the Delay 4 Sec mode, the system powers off when the power button is pressed for more than four seconds or places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity (see next field) when pressed for less than 4 seconds. The default value is *Instant-Off*.

**Resume by Ring**

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

**Resume by Alarm**

This allows a computer to be turned on automatically through the timer set in the BIOS to make the system more scheduleable. By default, this field is set to *Disabled*.

**Reload Global Timer Events**

When enabled, an event occurring on each listed device restarts the global timer for Standby mode.

### 6.7 PNP/PCI Configuration

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

ROM PCI/ISA BIOS  
CHIPSET FEATURES SETUP  
AWARD SOFTWARE INC.

PNP OS Installed	: No	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled by	: Manual	Primary IDE INT#	: A
Reset Configuration Data	: Disabled	Secondary IDE INT#	: B
IRQ-3 assigned to	: Legacy ISA	Used MEM base addr	: N/A
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP	ESC : Quit	↑ ↓ ← : Select Item
DMA-3 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-5 assigned to	: PCI/ISA PnP	F5 : Old Values	(Shift) F2 : Color
DMA-6 assigned to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-7 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	

#### PNP OS Installed

This field allows you to specify if the operating system installed in your system is plug and play aware.

*NOTE: Operating systems such as DOS, OS/2, and Windows 3.x do not use PnP*

#### Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices automatically. However, this capability needs you to use a PnP operating system such as Windows 95. The default value is **Manual**.

#### Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not. The default value is **Disabled**.

#### IRQ3/4/5/7/9/10/11/12/14/15, DMA0/1/3/5/6/7 assigned to

These fields allow you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot.

**PCI IDE IRQ Map To**

This field lets you select PCI IDE IRQ mapping or PC AT (ISA) interrupts. If your system does not have one or two PCI IDE connectors on the system board, select values according to the type of IDE interface(s) installed in your system (PCI or ISA). Standard ISA interrupts for IDE channels are IRQ14 for primary and IRQ15 for secondary.

**Used MEM base addr**

Select a base address for the memory area used by any peripheral that requires high memory. The default setting is *N/A*.

### 6.8 Load BIOS Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGE	DETECTION
PNP/PCI CONF	FORMAT
<b>LOAD BIOS DEF</b>	<b>UP</b>
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

To load BIOS defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

### 6.9 Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGE	DETECTION
PNP/PCI CONF	FORMAT
LOAD BIOS DEF	UP
<b>LOAD SETUP DEFAULTS</b>	<b>EXIT WITHOUT SAVING</b>
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

To load SETUP defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

## 6.10 Integrated Peripherals

This option sets your hard disk configuration, mode and port.

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE INC.			
IDE HDD Block Mode	: Enabled	Onboard FDC Controller	: Enabled
IDE Primary Master PIO	: Auto	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Slave PIO	: Auto	Onboard Serial Port 2	: 2F8/IRQ3
IDE Secondary Master PIO	: Auto	UART Mode Select	: Normal
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Primary Slave UDMA	: Auto	Parallel Port Mode	: SPP
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
		ESC : Quit	↑ ↓ ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### IDE HDD Block Mode

This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

### IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

### IDE Primary/Secondary Master/Slave UDMA

These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

**On-Chip Primary/Secondary PCI IDE**

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

**USB Keyboard Support**

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

**Onboard FDC Controller**

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select *Disabled* in this field. This option allows you to select the onboard FDD port.

**Onboard Serial/Parallel Port**

These fields allow you to select the onboard serial and parallel ports and their addresses. The default value for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Parallel Port	378H/IRQ7

**UART Mode Select**

This field determines the UART mode in your computer. The settings are *Normal*, *IrDA* and *ASKIR*. The default value is *Normal*.

**Parallel Port Mode**

This field allows you to determine parallel port mode function.

SPP	Normal Printer Port
EPP	Enhanced Parallel Port
ECP	Extended Capabilities Port

## 6.11 Supervisor / User Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	<b>SUPERVISOR PASSWORD</b>
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGE	DETECTION
PNP/PCI CONF	FORMAT
LOAD BIOS DEF	UP
LOAD SETUP D	AVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Change / Set / Disable Password	

### 6.12 IDE HDD Auto Detection

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

ROM PCI/ISA BIOS  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master:								
Select Primary Master Option (N=SKIP) : N								
OPTIONS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1 (Y)	0	0	0	0	0	0	0	NORMAL
NOTE: Some OSes (like SCO-UNIX) must use "NORMAL" for installation								

Up to four IDE drives can be detected, with parameters for each appearing in sequence inside a box. To accept the displayed entries, press the "Y" key; to skip to the next drive, press the "N" key. If you accept the values, the parameters will appear listed beside the drive letter on the screen.

### 6.13 HDD Low Level Format

This option should only be used by a professional. Low-level formatting can cause irreparable damage to your hard disk. The procedures include selecting the drive you want to low-level format, determining the bad tracks, and proceeding with pre-formatting.

### 6.14 Save & Exit Setup

This option allows you to determine whether to accept the modifications or not. If you type “Y”, you will quit the setup utility and save all changes into the CMOS memory. If you type “N”, you will return to Setup utility.

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGE	DETECTION
PNP/PCI CONF	FORMAT
LOAD BIOS DEF	UP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Save Data to CMOS & Exit Setup	

### 6.15 Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing “Y” will quit the Setup utility without saving the modifications. Typing “N” will return you to Setup utility.

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGE	DETECTION
PNP/PCI CONF	FORMAT
LOAD BIOS DEF	UP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Abandon all Data & Exit Setup	

## **Chapter 7 LANDesk User's Guide**

This chapter gives a brief introduction to the optional LANDesk® Client Manager (LDCM) utility, as well as the installation procedures.

The following items are covered in this chapter:

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7.2 Installation .....	54
7.2.1 Installing the Local Version of LDCM .....	55
7.2.2 Installing the Administrative Version of LDCM.....	57

LANDesk is a registered trademark of Intel Corporation.

## 7.1 Introduction

LANdesk Client Manager (LDCM 3.1 ) provides the capability for managing components (network interface cards, memory, printers, software applications, etc.) within a PC system. It uses the Desktop Management Interface (DMI) standard established by the Desktop Management Task Force (DMTF). Manageable components can be viewed, monitored, and administrated across multiple platforms, either locally or remotely on a network.

The LDCM package has been implemented in two different ways: a user (client/local) version and an administrative version (Remote Companion). The user version provides the ability to only manage the local PC. The administrative version allows a network administrator to manage the local PC and other PC nodes on the network. This means that the administrative version has the ability to gather information about remote PCs, as well as remotely controlling the PCs. The remote access is based upon granted rights by the managed client.

LDCM provides the user with self-help diagnostics, including a PC health meter, local alerting of potential problems, and hardware and software inventory. Automatic polling and alerting of memory and hardware conditions and predictive failure mechanisms minimize downtime and increase effective troubleshooting. LDCM can take periodic "snapshots" of critical configuration files for easy change management and restoration when needed.

To use LDCM, your computer must meet the following requirements:

- Operating System: Windows 95, Windows NT 3.51, or Windows NT4.0
- Memory: about 200KB
- Disk Storage Space: 3-5MB
- Hardware System: a DMI BIOS is required for full LDCM functionality

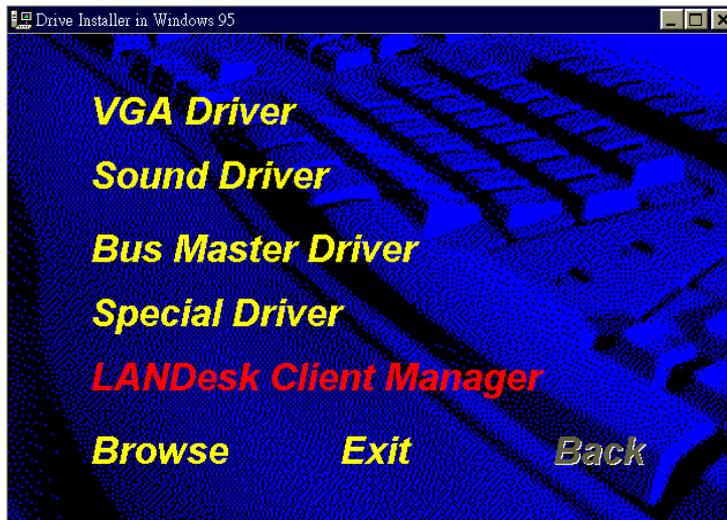
For network computers, the following requirements also apply:

- Protocols: IPX or IP (WinSock-enabled) communication protocol loaded on the client
- Hardware Interfaces: a network card for communication on the network

## 7.2 Installation

The optional LANDesk utility that comes with the CPU card runs in Windows NT or Windows 95 operating system.

Upon entering the Windows NT 4.0 or Windows 95 environment, insert the CD. Windows will autorun the installation program and show the following screen.



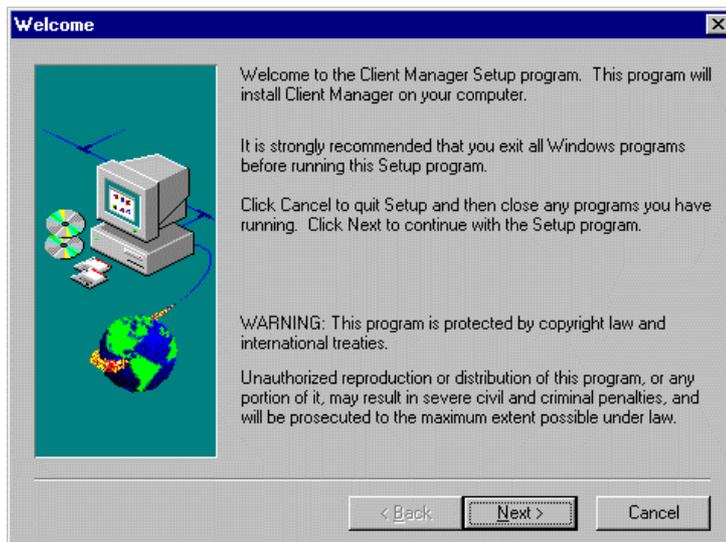
*NOTE: During Setup, you will be asked to install Internet Explorer 3.02 in order to continue, or else Setup will be aborted. LDCM supports various languages and will default to English if it is unable to load 'language.dll'.*

### 7.2.1 Installing the Local Version of LDCM

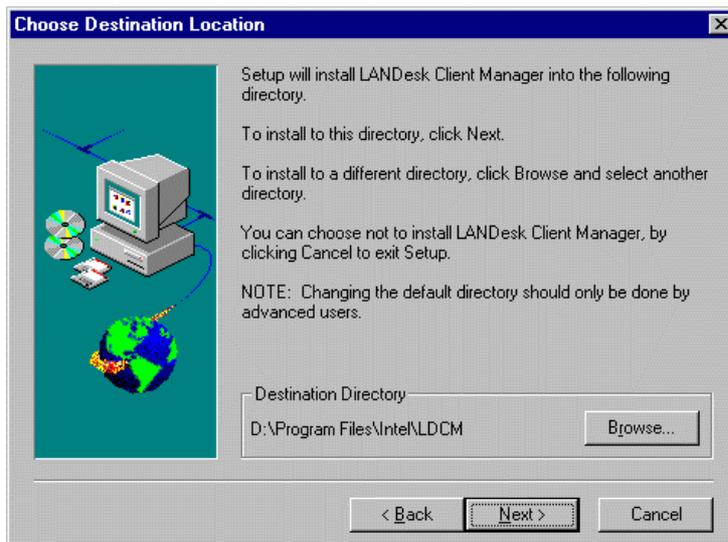
Double Click on 'LANdesk Client Manager' in the initial screen and the following screen will appear. Double click on the local version of LANdesk Client Manager.



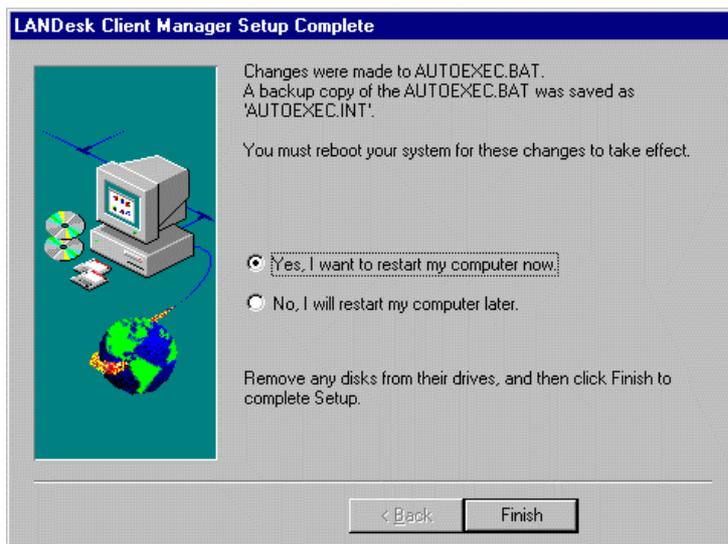
When the Welcome screen appears, click on "Next" to continue with Setup.



Choose the directory location where Setup will install LANdesk Client Manager. Click "Browse" if you want to change the directory suggested. Otherwise, click "Next" to start installing LDCM.



When Setup is finished, changes will have been made to the file AUTOEXEC.BAT. Restart your computer for the changes to take effect.

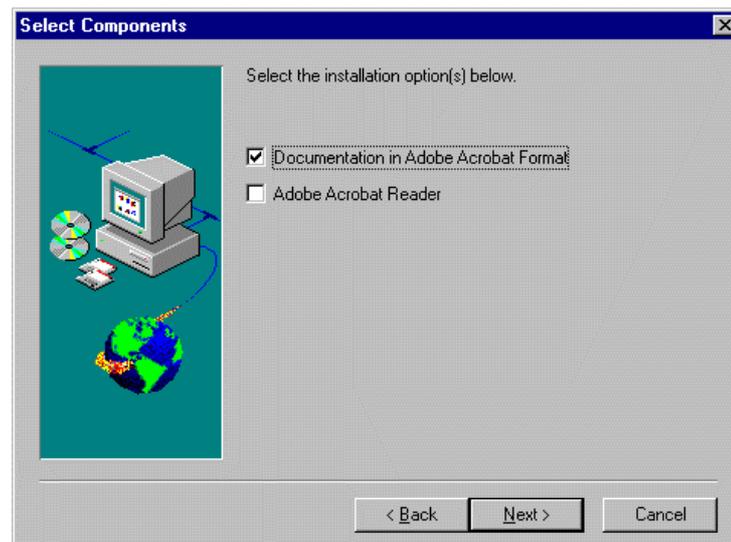


### 7.2.2 Installing the Administrative Version of LDCM

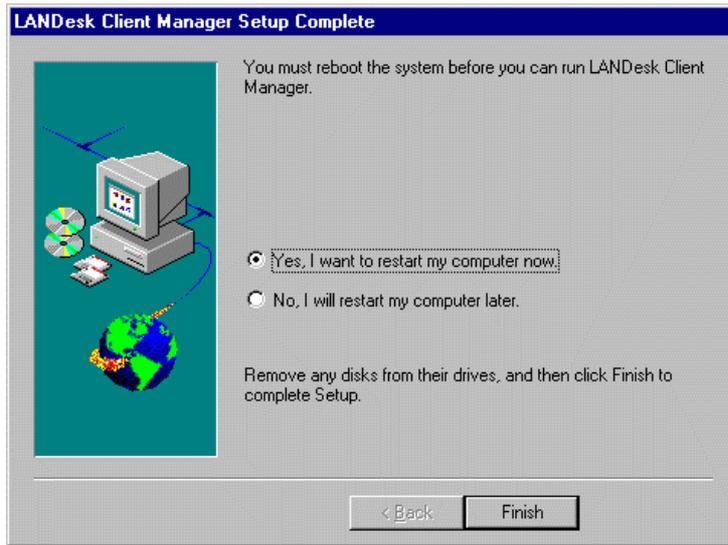
After double clicking on 'LANDesk Client Manager' in the initial screen, select the administrative version of the LDCM and the Welcome screen below will appear. Click on "Next" to continue.



The screen below allows you to install the documentation in Adobe Acrobat format and the Adobe Acrobat Reader software. Select the options you need and click on "Next" to start the installation.



After LANdesk Client Manager Setup is complete, restart your computer to be able to use the LANdesk Client Manager.



## Appendix

### A. Slot 1 Retention Mechanism

1. To install the Slot 1 mechanism, fasten it with the four screws from underneath the motherboard. Refer to the drawing below.
2. To release the CPU module from the retention mechanism, press the two sides of the module. Refer to the drawing below.

