

**TI5TT**  
**Pentium ATX Motherboard**  
**User's Manual**  
Version 1.2B



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## **Chapter 1 Introduction**

This manual is designed to give you information on the TI5TT Motherboard. It is divided into the following seven sections:

- **Introduction**
- **Specifications**
- **Hardware Description**
- **Configuring the TI5TT**
- **Installation**
- **BIOS Configuration**
- **LANDesk User 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 TI5TT Motherboard**

**This User's Manual**

**1 IDE Ribbon Cable**

**1 Floppy Ribbon Cable**

**1 Diskette Containing Intel PCI IDE Driver and Flash  
Memory Utility**

**1 Optional CD containing LANDesk Client Manager  
(LDCM) Utility**

## Chapter 2 Specifications

The TI5TT is a high-performance, Pentium-powered PCI motherboard with a ATX form factor. It is highly flexible in CPU frequency, L2 cache type and size, and main memory type and size. The TI5TT allows easy access to main memory sockets and expansion by using full length add-in cards. The board supports Modem ring-on function that allows powering on from remote via an external modem connected to COM1 or COM2.

The main features are listed as follows:

### Main Processor

Intel Pentium/Pentium MMX\* 90/100/120/133/150/166/200/233

Cyrix 6x86/6x86L/6x86MX P150+/P166+

AMD K5 PR100/PR133/PR166

AMD K6/166/200/233/266/300

\*Pentium MMX = P55C

### Processor Upgrade

Intel P6 based Over Drive

### L2 Cache

Size: 512K

Type: Pipeline Burst Synchronous SRAM onboard

### Main Memory

Up to 256MB of main memory

### Memory Type

**SIMMs:** FPM (Fast Page Mode) or EDO (Extended Data Out)

**SIMM Size:** 4M, 8M, 16M, 32M, 64M

**DIMMs:** SDRAM (Synchronous DRAM)

**DIMM Size:** 8M, 16M, 32M, 64M

### Chipset

Intel 430TX PCIset with built-in PCI EIDE

### **Onboard I/O**

WINBOND W83977TF for two serial, one parallel, and one floppy drive interface, support IrDA device.

### **Onboard Bus Mastering EIDE**

Two EIDE interfaces for up to four devices, support PIO Mode 3/4 or Ultra DMA/33 IDE Hard Disk and ATAPI CD-ROM.

### **BIOS**

Licensed BIOS with additional features:

- FLASH EEPROM (128KB) for BIOS update
- ISA Plug and Play (PnP) extension
- Power management

### **Auto Fan Off**

The system fan will power off automatically, even in suspend mode. This function reduces both energy consumption and system noise.

### **Modem Ring-On**

This allows the PC to be turned on remotely through a modem via COM1 or COM2.

### **Windows 95 Shut-Down**

This allows the PC to power off via Windows 95 operating system.

### **PC 97 Compliance**

The BIOS and hardware levels of TI5TT meet PC 97 compliance. The new PC 97 requirements for systems and components are based on the following high-level goals: Support for Plug and Play compatibility and power management for configuring and managing all system components, and 32-bit device drivers and installation procedures for both Windows 95 and Windows NT.

### **Temperature Monitoring & Alert**

An optional heat sensor, under the CPU, monitors the CPU temperature to ensure the system is operating at a safe heat level to avoid any failure resulting from extremely high temperature. An alert is sounded through the speaker when the temperature exceeds the threshold value set by the user in the BIOS. The temperature can be viewed in the BIOS under Chipset Features Setup.

### **Voltage Monitoring**

To ensure stable currents are applied to critical motherboard components, the optional System Hardware Monitor Device monitors the system voltage levels. The voltage figures can be viewed in the BIOS under Chipset Features Setup.

### **Fan Status Monitoring**

The optional System Hardware Monitor Device monitors the RPM status of the chassis fan and CPU fan. The RPM figures can be viewed in the BIOS under Chipset Features Setup.

### **Expansion Slots**

Four 32-bit PCI slots  
Four 16-bit ISA slots

### **Form Factor**

ATX (12" x 8.6")

## Chapter 3 Hardware Description

This chapter briefly describes each of the major features of the TI5TT motherboard. The layout of the board is shown in Figure 1 which shows the locations of the key components. The topics covered in this chapter are as follows:

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3.9 Onboard Multi-I/O .....	11
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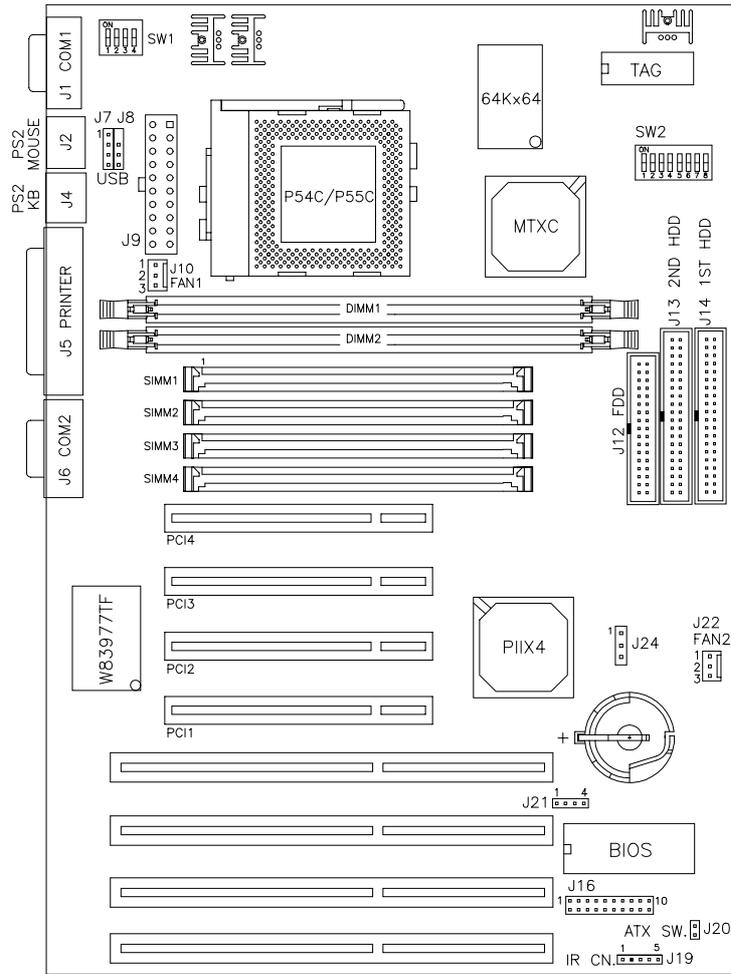


Figure 1: Layout of the TI5TT Motherboard

### 3.1 Processor and CPU Voltage

The TI5TT is designed to take a Pentium Processor with a bus speed of 60 and 66MHz. Since the internal clock of the CPU can be multiples of 1.5, 2, 2.5, 3 and 3.5 of the bus clock, the CPU frequency can be 90, 100, 120, 133, 150, 166, 200 and 233MHz.

The onboard CPU Voltage provides support for CPUs Vcore which require voltages from 2.0V to 3.5V for a total of 16 different voltages.

### 3.2 L2 Cache

The TI5TT supports P.B. (Pipelined Burst) Synchronous Cache. The P.B. Synchronous Cache boosts the system's performance, 10% higher than regular Asynchronous Cache.

### 3.3 Main Memory

The TI5TT motherboard supports four 72-pin SIMM and two 168-pin DIMM (Dual In-line Memory Module) sockets for a maximum total memory of 256MB. The DRAMs for the SIMM sockets can be 4MB, 8MB, 16MB, 32MB, and 64MB in EDO and FPM types. DIMM modules can be 8MB, 16MB, 32MB, and 64MB.

The following should be noted when populating the SIMM/DIMM sockets:

1. SIMM1/SIMM2, SIMM3/SIMM4, DIMM1 and DIMM2 bank can be populated first.
2. Each bank\*\* should consist of the same size SIMMs.
3. Each bank should consist of the same type SIMMs. For example, *SIMM1 and SIMM2 are both be EDO or Page Mode.*

\*\* *Each bank consists of two SIMM slots or one DIMM slot. For example, SIMM 1 and SIMM 2 are considered as one bank and DIMM 1 as another one.*

(1) 72-pin SIMM (5V)

Fast Page Mode/EDO DRAM

Bank0 (SIMM1, SIMM2)	Bank1 (SIMM3, SIMM4)	Total Memory
4MB×2	-----	8MB
8MB×2	-----	16MB
16MB×2	-----	32MB
32MB×2	-----	64MB
4MB×2	4MB×2	16MB
8MB×2	4MB×2	24MB
16MB×2	4MB×2	40MB
32MB×2	4MB×2	72MB
8MB×2	8MB×2	32MB
16MB×2	8MB×2	48MB
32MB×2	8MB×2	80MB
16MB×2	16MB×2	64MB
32MB×2	16MB×2	96MB
32MB×2	32MB×2	128MB
64MB×2	64MB×2	256MB

(2) 168-pin DIMM (3.3V)

SDRAM or EDO DRAM

Bank0 (DIMM1)	Bank1 (DIMM2)	Total Memory
8MB	-----	8MB
16MB	-----	16MB
32MB	-----	32MB
64MB	-----	64MB
8MB	8MB	16MB
16MB	8MB	24MB
32MB	8MB	40MB
64MB	8MB	72MB
16MB	16MB	32MB
32MB	16MB	48MB
64MB	16MB	80MB
32MB	32MB	64MB
64MB	32MB	96MB
64MB	64MB	128MB

### 3.4 BIOS

The BIOS on the T15TT motherboard provides the standard BIOS functions plus the following additional features:

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

Unlike PCI cards which 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 OSes, such as Windows 95. Under Windows 95, the motherboard BIOS must have ISA PnP extension to support the 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.

### 3.5 Interrupt Request Lines (IRQ)

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

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Parallel Port #2
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	Reserved
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

### 3.6 DMA Channels

There are seven DMA Channels available on the motherboard. Only DRQ2 is used by the floppy controller. In the case that ECP mode on the parallel port is used, DRQ1 or DRQ3 will be used.

### 3.7 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
278 - 27F	Parallel Port #2 (LPT2)
2F8h - 2FFh	Serial Port #2 (COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

### **3.8 Onboard PCI EIDE**

The PCI EIDE controller is part of the 430TX PCIset. It supports PIO mode 3/4 and bus mastering. The peak transfer rate of PIO mode 3/4 can be as high as 17MB/sec. Using HDDs that support bus mastering, the peak transfer rate can reach 22MB/sec. There are two IDE connectors, primary IDE and secondary IDE. With two devices per connector, up to four IDE drives are supported.

The controller also supports Ultra DMA/33, a new “synchronous DMA” protocol featured in PIIX4. It is built on Intel’s existing 16MB/s Bus Master interface to improve disk I/O throughput to 33MB/s. It uses both edges of data strobe to obtain 2X speed across the cable and is backward compatible with today’s drives. It also has 16-bit CRC error detection across the cable for improved integrity.

### **3.9 Onboard Multi-I/O**

The onboard multi-I/O chip, Winbond W83977, supports two 16550 UART-compatible serial ports, one high speed EPP/ECP parallel port and one floppy controller. The floppy controller supports 2.88MB format. The I/O port addresses of the serial and parallel ports are programmable via BIOS set-up.

### **3.10 System Hardware Monitor Device (optional)**

The System Hardware Monitor Device (from National Semiconductor) allows the system to track the PC health through hardware monitoring of the system and CPU temperature, voltage levels, and CPU and chassis fans to ensure the system’s normal operation.

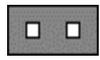
## Chapter 4 Configuring the TI5TT

The following sections describe the necessary procedures and proper jumper settings to configure the TI5TT motherboard.

4.1 SW2(1-8): CPU Frequency Selector.....	14
4.2 SW1 (1-4): CPU Voltage Selector.....	17
4.3 J24: Clear CMOS Content .....	19
4.4 J21: External Battery Connector .....	19
4.5 J20: ATX Power On Switch .....	19

For the locations of the jumpers, refer to Figure 2 on the following page.

The following shows the conventions used in this chapter.

	Jumper Open
	Jumper Closed/Short

	Switch 1 and switch 2 are set to OFF. Switch 3 and switch 4 are set to ON.
off off on on	

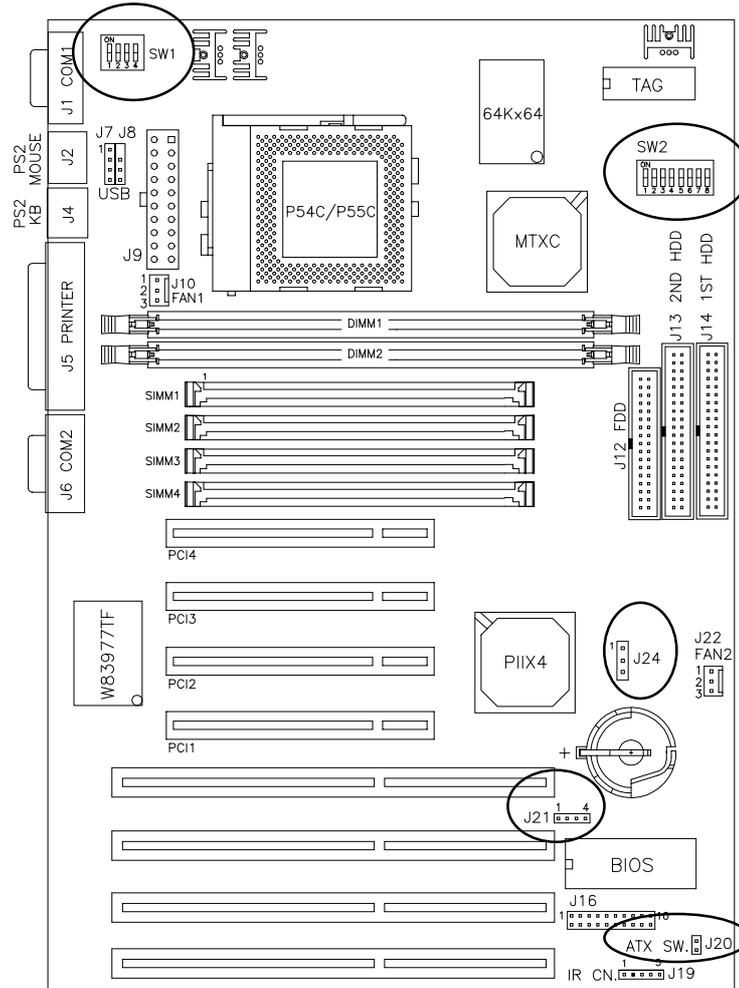


Figure 2: Jumper Location of the TI5TT

4.1 SW2(1-8): CPU Frequency Selector

For Intel Pentium CPU

SW2 (1-8)	Setting	Bus Clock Multiplier	CPU FREQ.
	1 2 3 4 5 6 7 8 on off off off off off off off	60MHz 1.5x	P54C-90
	1 2 3 4 5 6 7 8 off off off off off off off off	66MHz 1.5x	P54C-100
	1 2 3 4 5 6 7 8 on on on off off off off off	60MHz 2x	P54C-120
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 2x	P54C-133
	1 2 3 4 5 6 7 8 on on on off off off off off	60MHz 2.5x	P54C-150
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 2.5x	P54C/P55C-166
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 3x	P54C/P55C-200
	1 2 3 4 5 6 7 8 off off off off off off off off	66MHz 3.5x	P55C-233

For AMD K5/K6 and Future CPU

SW2 (1-8)	Setting	Bus Clock Multiplier	CPU FREQ.
	1 2 3 4 5 6 7 8 off off off off off off off off	66MHz 1.5x	K5-PR100 (100MHz)
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 2x	K5-PR133 (133MHz)
	1 2 3 4 5 6 7 8 off off on on off off off off	66MHz 1.75x	K5-PR166 (116.7MHz) (117.K6/166)
	1 2 3 4 5 6 7 8 off off on on off off off off	66MHz 3x	K6/200
	1 2 3 4 5 6 7 8 off off off off off off off off	66MHz 3.5x	K6/233
	1 2 3 4 5 6 7 8 off off on on on off off off	66MHz 4x	K6/266 K6-2/266
	1 2 3 4 5 6 7 8 off off on on on off off off	66MHz 4.5x	K6/300 K6-2/300

For Cyrix 6x86 and IDT WinChip C6/WinChip2 CPU

SW2 (1-8)	Setting	Bus Clock Multiplier	CPU FREQ.
	1 2 3 4 5 6 7 8 on on on off off off off off	60MHz 2x	6x86(L)-P150+ (120MHz)
	1 2 3 4 5 6 7 8 off on on off off off off off	66MHz 2x	6x86(L)-P166+ (133MHz)
	1 2 3 4 5 6 7 8 off on on off off off off off	66MHz 2x	6x86(L)-P166+ (133MHz)
	1 2 3 4 5 6 7 8 on on on on off off off off	60MHz 2.5x	6x86MX-PR166
	1 2 3 4 5 6 7 8 off on on on off off off off	66MHz 2.5x	6x86MX-PR200
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 3x	6x86MX-PR233
	1 2 3 4 5 6 7 8 off off off off off off off off	66MHz 3.5x	6x86MX-PR266 MII-300 WinChip2 233MHz
	1 2 3 4 5 6 7 8 on on on on off off off off	60MHz 3x	WinChip C6-180*
	1 2 3 4 5 6 7 8 off off on off off off off off	66MHz 3x	WinChip C6-200*
	1 2 3 4 5 6 7 8 off on on on off off off off	66MHz 4x	WinChip2 266MHz

\*Single Voltage: 3.5V

For Cyrix 6x86MX CPU at 75MHz Bus and Future CPUs

SW2 (1-8)	Setting	Bus Clock Multiplier	CPU FREQ.
	1 2 3 4 5 6 7 8 off off on off off on off off	75MHz 2x	6x86MX PR200
	1 2 3 4 5 6 7 8 off off on on off on off off	75MHz 2.5x	6x86MX PR233
	1 2 3 4 5 6 7 8 off off on off on off off off	75MHz 3x	6x86MX PR266

NOTE: Intel 430TX is designed for 66MHz bus. 75MHz exceeds Intel 430TX specifications and is not guaranteed for normal operation.

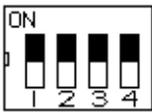
#### 4.2 SW1 (1-4): CPU Voltage Selector

For Single Voltage CPU\*\*: Intel P54C, Cyrix 6x86,  
AMD K5, IDT C6

SW1 (1-4)	Setting	VIO	VCORE
	1 2 3 4 on on on on	3.5V	3.5V

\*\*Default

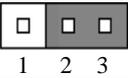
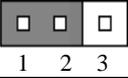
For Dual Voltage CPU: Intel P55C\*, Cyrix 6x86L/MX, AMD K6

SW1 (1-4)	Setting	VIO	VCORE	CPU
	1 2 3 4 on on on on	3.3V	3.5V	
	1 2 3 4 off off on on	3.3V	3.2V	K6/233**
	1 2 3 4 off on off on	3.3V	3.0V	
	1 2 3 4 on off off on	3.3V	2.9V	K6/166 K6/200 6x86MX MII-300
	1 2 3 4 off off off on	3.3V	2.8V	P55C 6x86L
	1 2 3 4 on on on off	3.3V	2.7V	
	1 2 3 4 off on on off	3.3V	2.6V	
	1 2 3 4 off on off off	3.3V	2.2V	K6-233** K6-266** K6-300** K6-2/266 K6-2/300
	1 2 3 4 on off off off	3.3V	2.1V	K6-233** K6-266** K6-300**

\* P55C = Pentium MMX

\*\* Check the correct voltage as printed on the top side of the CPU.

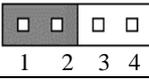
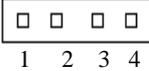
### 4.3 J24: Clear CMOS Content

J24	Setting	Function
	2-3 short	Clear CMOS Content
	1-2 short	Normal Operation

### 4.4 J21: External Battery Connector

This 4-pin connector allows the user to connect an external battery to maintain the information stored in the CMOS RAM in case the built-in battery malfunctions. The default is set to Internal Battery with a jumper connecting pin 1 and pin 2.

J21 Pin #	Signal Name
1	Ground
2	N.C.
3	N.C.
4	Vcc

J21	Setting	Function
	1-2 short	Internal Battery
	open	External Battery

### 4.5 J20: ATX Power On Switch

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

## Chapter 5 Installation

This chapter describes the connectors and interfaces that the TI5TT provides for creating a working system. Refer to Figure 3 for the location of the connectors.

The following items are covered in this chapter:

5.1 J1, J6: Serial Ports .....	22
5.2 J2, J4: PS/2 Keyboard and PS/2 Mouse Connectors.....	22
5.3 J5: Parallel Port Connector .....	23
5.4 J7, J8: USB Connectors .....	23
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5.8 J14, J13: IDE Connectors .....	26
5.9 J16: Front Bezel Connectors.....	27
5.10 J19: Infrared Connector .....	29
5.11 J22: Chassis Fan Power Connector.....	29

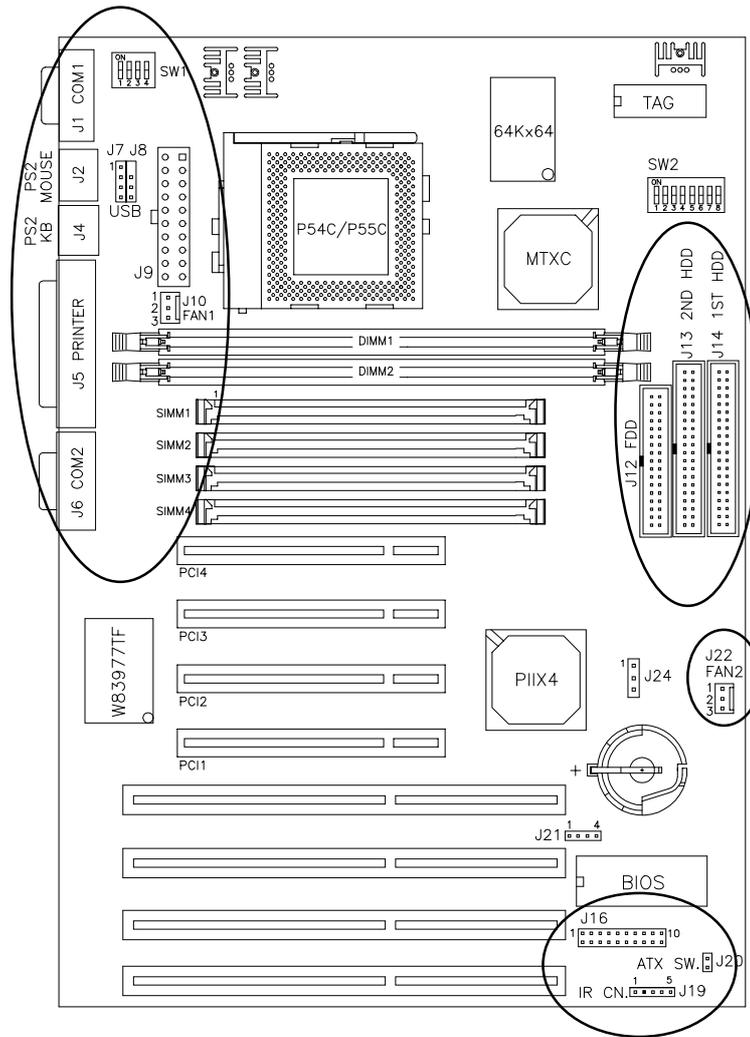
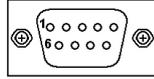


Figure 3: Connector Locations of the TI5TT

### 5.1 J1, J6: Serial Ports

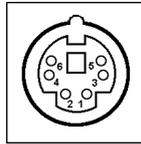
The onboard serial ports of the TI5TT are DB-9 connectors. J1 is COM 1 and J6 is COM2. The following table shows the pin outs of these connectors.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator

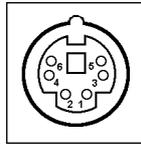
### 5.2 J2, J4: PS/2 Keyboard and PS/2 Mouse Connectors

#### J2: PS2 Mouse Connector



J2 Pin #	Signal Name
1	Mouse data
2	N.C.
3	GND
4	5V
5	Mouse clock
6	GND

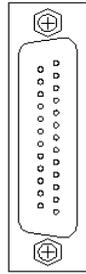
#### J4: PS2 Keyboard Connector



J4 Pin #	Signal Name
1	Keyboard data
2	N.C.
3	GND
4	5V
5	Keyboard clock
6	N.C.

### 5.3 J5: Parallel Port Connector

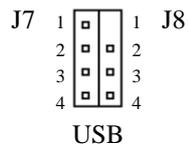
J5 is a DB-25 external connector. The following table describes the pin out assignments of this connector.



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

### 5.4 J7, J8: USB Connectors

J7 and J8 are USB connectors. USB support allows connections of up to 64 plug and play peripherals per channel. The following table shows the pin outs of these connectors.



J7 Pin #	J8 Pin #	Signal Name
1	1	Vcc
2	2	USB-
3	3	USB+
4	4	Ground

### 5.5 J9: ATX Power Supply Connector

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

11	1		<b>Signal Name</b>	<b>Pin #</b>	<b>Pin #</b>	<b>Signal Name</b>
○	□		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

### 5.6 J10: CPU Fan Power Connector

J10 is a 3-pin header for a CPU fan. The fan must be a 12V fan.

J10 Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

### 5.7 J12: Floppy Drive Connector

J12 is a 34-pin header and will support up to 2.88MB floppy drives.

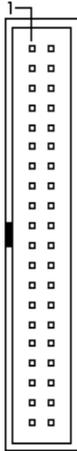


Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	No connect
Ground	5	6	No connect
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00
Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

### 5.8 J14, J13: IDE Connectors

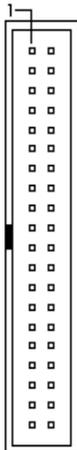
J14 and J13 are the *primary* and *secondary* IDE connectors.

#### J14: 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

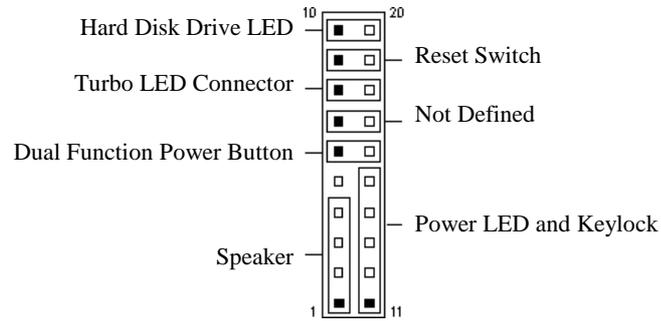
#### J13: Secondary IDE Connector



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

### 5.9 J16: 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's status. J16 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.



J16 Pin #	Signal Name
1	Speaker out
2	No connect
3	Ground
4	+5V

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

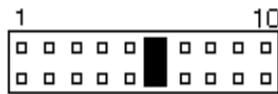
The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.



J16 Pin #	Signal Name
11	Power LED
12	No connect
13	Ground
14	Keylock
15	Ground

**Dual Function Power Button: Pin 6 and 16**

This connector provides two power modes: sleep and soft-off mode. Pushing the power button for less than 4 seconds places the system into sleep mode. Pressing the power button for more than 4 seconds puts the system into the soft-off mode.

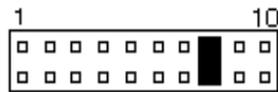


J16 Pin #	Signal Name
6	Sleep
16	Ground

**Pins 7 and 17: Not Defined**

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

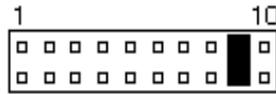
There is no turbo/deturbo function on the motherboard. The Turbo LED on the control panel will always be On when attached to this connector.



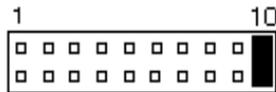
J16 Pin #	Signal Name
8	5V
18	Ground

**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**

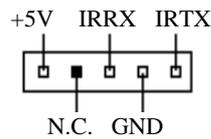
This connector connects to the HDD activity LED on the control panel. This LED flashes when the HDD is being accessed.



J16 Pin #	Signal Name
10	Ground
20	5V

**5.10 J19: Infrared Connector**

This connector is used for an IrDA connector for wireless communication with infrared devices.



J19 Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

**5.11 J22: Chassis Fan Power Connector**

J22 is a 3-pin header for the chassis fan power connector. The fan must be a 12V fan.

J22 Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

## Chapter 6 BIOS Configuration

This chapter describes the different settings available in the Award BIOS that comes with the TI5TT motherboard. 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) : Wed, Jan 1 1997								
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, 3.5 in				Base Memory		:	640K
Drive B	: None				Extended Memory		:	31744K
Floppy 3 Mode Support	: Disabled				Other Memory		:	384K
Video	: EGA / VGA				Total Memory		:	32768K
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 :** 1900 to 2099

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, includes high resolution monochrome 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 be halted 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 other errors.

### 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	: Disabled	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

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	LS120, 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 display cards that are non-standard VGA 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.

DRAM Timing : 70ns SDRAM (CAS Lat/RAS-to-CAS) : 3/3 System BIOS Cacheable : Disabled Video BIOS Cacheable : Enabled Memory Hole At 15M-16M : Disabled PCI 2.1 Compliance : Disabled	CPU Warning Temperature : 80°C/176°F Current CPU Temperature : 37°C/98°F Current System Temp. : 25°C/77°F CPU FAN SPEED : 5720 RPM CHASSIS FAN SPEED : 5443 RPM VIO : 3.31 V VCORE : 2.84V +12(V) : 11.26V +5 (V) : 5.11V -5 (V) : -4.84V -12 (V) : -10.93V ESC : Quit                   ↑ ↓ → ← : Select Item F1 : Help                    PU/PD/+/- : Modify F5 : Old Values           (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
--	--

#### DRAM Timing

The DRAM timing is controlled by the DRAM Timing Registers. The timing type is dependent on the system design. Slower rates may be required in some system designs to support loose layouts or slower memory.

#### SDRAM (CAS Lat / RAS -to-CAS)

This item allows you to select the CAS# latency for all SDRAM cycles and RAS# to CAS# delay.

2/2	The timing type.
3/3	The timing type.

#### System BIOS Cacheable

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

#### Video BIOS Cacheable

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

### **Memory Hole at 15M-16M**

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*.

### **PCI 2.1 Compliance**

Concurrent PCI allows multiple PCI transfers from the PCI master buses to memory to CPU. By default, this field is set to *Disabled*.

### **CPU Warning Temperature**

The *optional* onboard hardware thermal sensor monitors CPU temperature changes and prevents the CPU from overheating. Alert is sounded through the speaker and CPU speed slows down when the temperature exceeds the temperature set in the BIOS until the temperature falls below a safe level. By default, this field is set to *80°C/176°F*.

### **Current CPU and System Temperature**

These fields show the current system and system temperature as monitored by the *optional* hardware monitoring device on the motherboard..

### **CPU and Chassis Fan Speed**

These fields show the RPM (revolution per minute) status of your CPU fan and chassis fan. This is a function of the *optional* System Hardware Monitoring Device.

### **Voltage Monitoring**

These fields show the monitored current voltages in the voltage regulators and the system's power supply. This is a function of the *optional* System Hardware Monitoring Device.

### 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	** Break	Event From Suspend	**
PM Control by APM	: Yes	IRQ 8 Clock Event	:	Disabled
Video Off Method	: V/H SYNC +Blank	** Reload Global Timer Events	**	
Video Off After	: Suspend	IRQ3 [3-7, 9-15],NMI	:	Enabled
Doze Mode	: Disabled	Primary IDE 0	:	Disabled
Standby Mode	: Disabled	Primary IDE 1	:	Disabled
Suspend Mode	: Disabled	Secondary IDE 0	:	Disabled
HDD Power Down	: Disabled	Secondary IDE 1	:	Disabled
VGA Active Monitor	: Enabled	Floppy Disk	:	Disabled
Soft-off by PWR-BTTN	: Instant Off	Serial Port	:	Enabled
		Parallel Port	:	Disabled
CPUFAN Off In Suspend	: Enabled	ESC : Quit	↑ ↓ → ← :	Select Item
Resume by Ring	: Disabled	F1 : Help	PU/PD/+/- :	Modify
Resume by Alarm	: Disabled	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.

- Disable                                      No power management. (Default)
- 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.

#### 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

This field specifies the mode after which the Video Off feature is enabled. The options are *Doze*, *Standby*, *Suspend*, and *N/A*.

### 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

When enabled, and after the set time of system inactivity, the fixed disk drive and the video would be 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.

### VGA Active Monitor

This option specifies if the BIOS is to monitor activity on the display monitor for power conservation purposes.

### Soft-Off by PWR-BTTN

This field specifies the power-off mode of the ATX system. The *Instant Off Mode* allows powering off immediately upon pressing the power button. In the *Delay 4 Secs Mode*, the system powers off after pressing the power button for more than four seconds. By default, this field is set to *Instant Off Mode*.

**CPU Fan Off in Suspend**

The system fans will power off automatically, even in suspend mode. This function reduces both energy consumption and system noise.

**Resume by Ring**

This allows a computer to be turned on remotely through a modem. By default, this field is set to *Disabled*.

**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*.

**Break Event from Suspend**

This section sets the wake-up call of the system. If activity is detected from the enabled IRQ 8, the system wakes up from suspend mode.

**Reload Global Timer Events**

This section determines the reloading of the 'timers' after entering the Full On mode. When enabled, the item reloads the set time of inactivity before entering the power saving 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	:	Yes	Used MEM base addr : N/A
Resources Controlled by	:	Manual	
Reset Configuration Data	:	Disabled	
IRQ-3 assigned to	:	Legacy ISA	
IRQ-4 assigned to	:	Legacy ISA	
IRQ-5 assigned to	:	Legacy ISA	
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.

**Used MEM base addr**

This field allows the user to set the base address and block size of a legacy (non-PnP) ISA card that uses any memory segment within the C800H and DFFFH address range. If the you have such a card and are not using an ICU (ISA Configuration Utility) to specify its address range, select a base address from the six available options. During selection, the “Used MEM Length” field will appear with the block size options. If you have more than one legacy ISA card in your system that require the use of this address range, you can increase the block size to either 8K, 16K, 32K or 64K. If you are using ICU to accomplish this task, leave “Used MEM base addr” to its default setting of 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 MANAGEMENT	DETECTION
PNP/PCI CONFIGURATION	FORMAT
<b>LOAD BIOS DEFAULTS</b>	<b>LOAD SETUP DEFAULTS</b>
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 MANAGEMENT	DETECTION
PNP/PCI CONFIGURATION	FORMAT
<b>LOAD BIOS DEFAULTS</b>	<b>LOAD SETUP DEFAULTS</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 allows you to determine your hard disk configuration, mode and port.

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE INC.			
IDE HDD Block Mode	: Enabled	Onboard FDD 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	Onboard IR Controller	: Disabled
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto	Onboard Parallel Mode	: 378/IRQ7
On-Chip Primary PCI IDE	: Enabled	Parallel Port Mode	: SPP
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 Master/Slave PIO And 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 Master/Slave UDMA And Secondary Master/Slave UDMA

This field allows 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**

These fields allow you either to enable or disable the Primary/Secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

**USB Keyboard Support**

This field allows your system to support a USB keyboard.

**Onboard FDD Controller**

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 port and their addresses. The default value for these ports are:

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

**Onboard IR Controller**

This field sets the IrDA controller connected in your computer. The options are *Standard*, *HPSIR*, or *ASKIR*. By default, this is disabled.

**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 BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURATION LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS <b>SUPERVISOR PASSWORD</b> USER PASSWORD IDE HDD AUTO DETECTION FORMAT UP SAVING
ESC : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item (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 LANDesk Client Manager (LDCM), as well as the installation procedures.

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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.



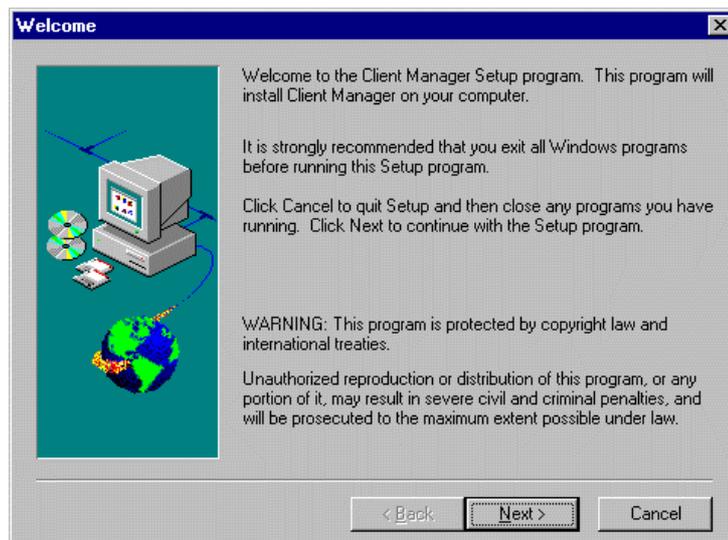
*NOTE:* During Setup, you will be asked to install Internet Explorer 3.02 in order to continue, or else Setup will be aborted. LDCM supports various languages and will default to English if it is unable to load 'language.dl'.

### 7.2.1 Installing the Local Version of LDCM

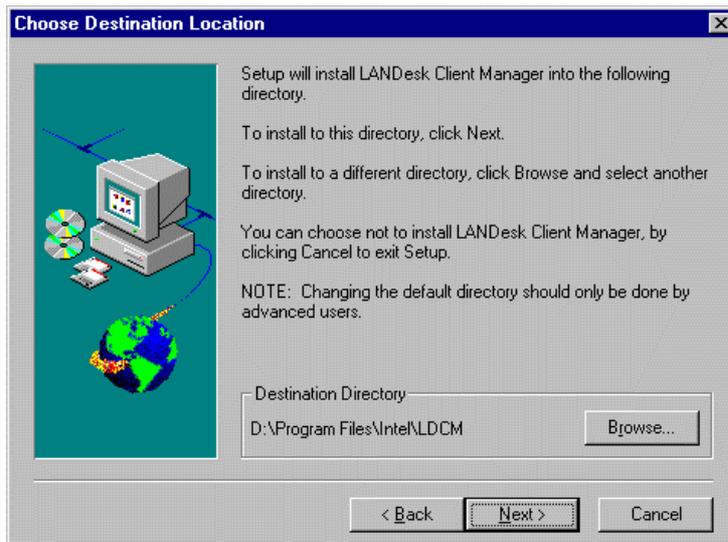
Double Click on 'LANdesk Client Manager' in the initial screen and the following screen will appear. Double click on the local version of LANdesk Client Manager.



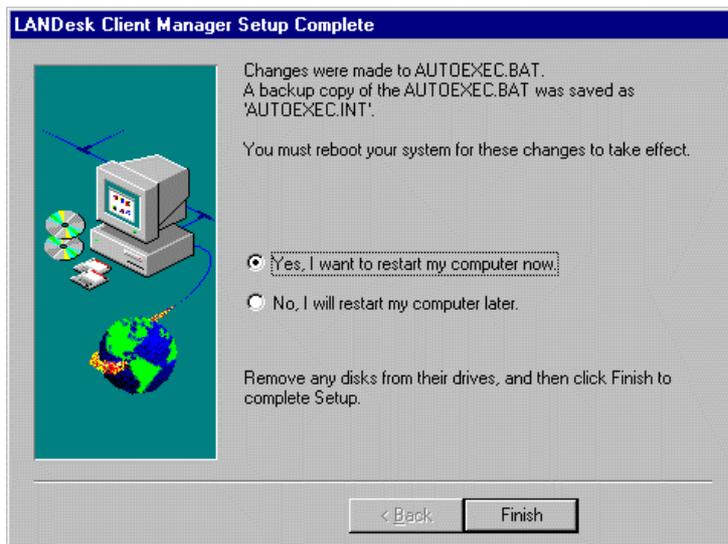
When the Welcome screen appears, click on "Next" to continue with Setup.



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.

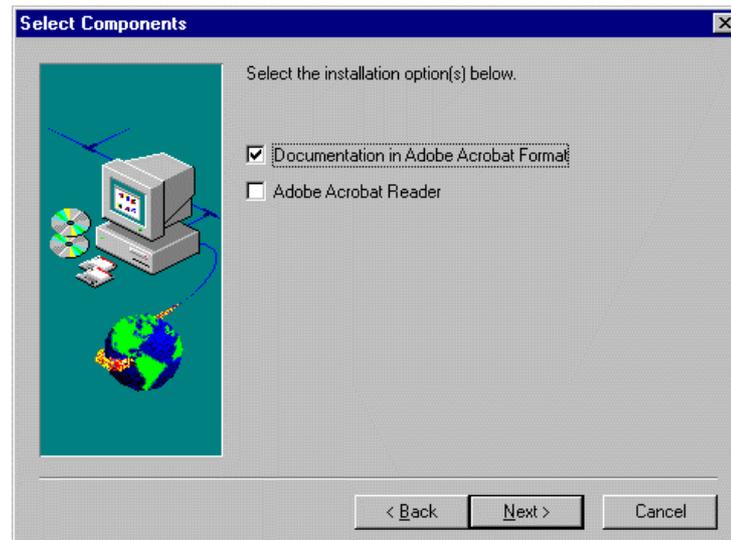


### 7.2.2 Installing the Administrative Version of LDCM

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.

