

AI6NL
Pentium II 440LX Baby AT Motherboard
User's Manual
Version 1.0

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Chapter 1 Introduction

Chapter 1 Introduction

This manual is designed to give you information on the AI6NL motherboard. It is divided into the following sections:

- **Introduction**
- **Specifications**
- **Hardware Description**
- **Configuring the Motherboard**
- **Installation**
- **BIOS and System Setup**
- **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 AI6NL Motherboard
- 1 IDE ribbon cable
- 1 floppy ribbon cable
- 2 serial ribbon cables*
- 1 parallel ribbon cable
- 1 CD containing drivers and utilities

** Use the two serial cables supplied to avoid possible compatibility problems.*

Chapter 2 Specifications

The AI6NL is a high-performance Baby AT 440LX motherboard with a Slot 1 CPU socket 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 233/266/300MHz

L2 Cache

CPU integrated L2 cache

CPU Voltage

Switching voltage regulator on board supporting multiple voltage ranging 1.8V-3.5V

Main Memory

Three 168-pin DIMM sockets

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

Chipset

Intel 82440LX with built-in PCI-IDE

BIOS

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

Power Connector

ATX and AT power supply connector

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

Chapter 2 Specifications

Super I/O

Onboard super I/O is a Winbond 83977 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

Mouse Connector

PS/2 type, 5-pin header

Keyboard Connector

AT type

USB Connector

2 ports, headers

Win95-shut-off (ATX power supply only)

Allows shut-off control from within Windows 95

Modem-ring-on (ATX power supply only)

Supports modem-ring-on capability through an external modem connected to COM1 or COM2.

DMI BIOS Support

Desktop Management Interface (DMI) allows users to download system hardware-level information such as CPU type, CPU speed, internal/external frequencies and memory size.

AGP (Accelerated Graphics Port)

AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping. The onboard AGP port of the AI6NL supports AGP VGA cards.

Expansion Slots

Three PCI 32-bit slots

Three ISA 16-bit slots

Form Factor

Baby AT, 13x 8.6(33cm x 22cm)

Chapter 3 Hardware Description

Chapter 3 Hardware Description

This chapter briefly describes each of the major features of the AI6NL 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:

-
- 3.1 Processor.....
- 3.2.....L2 Cache
- 3.3.....Main Memory
- 3.4.....BIOS
- 3.5.....I/O Port Address Map
- 3.6.....DMA Channels
- 3.7.....Interrupt Request (IRQ) Lines
- 3.8.....Onboard PCI-IDE
- 3.9.....Onboard Multi-I/O
- 3.10.....Onboard AGP Port
-

Chapter 3 Hardware Description

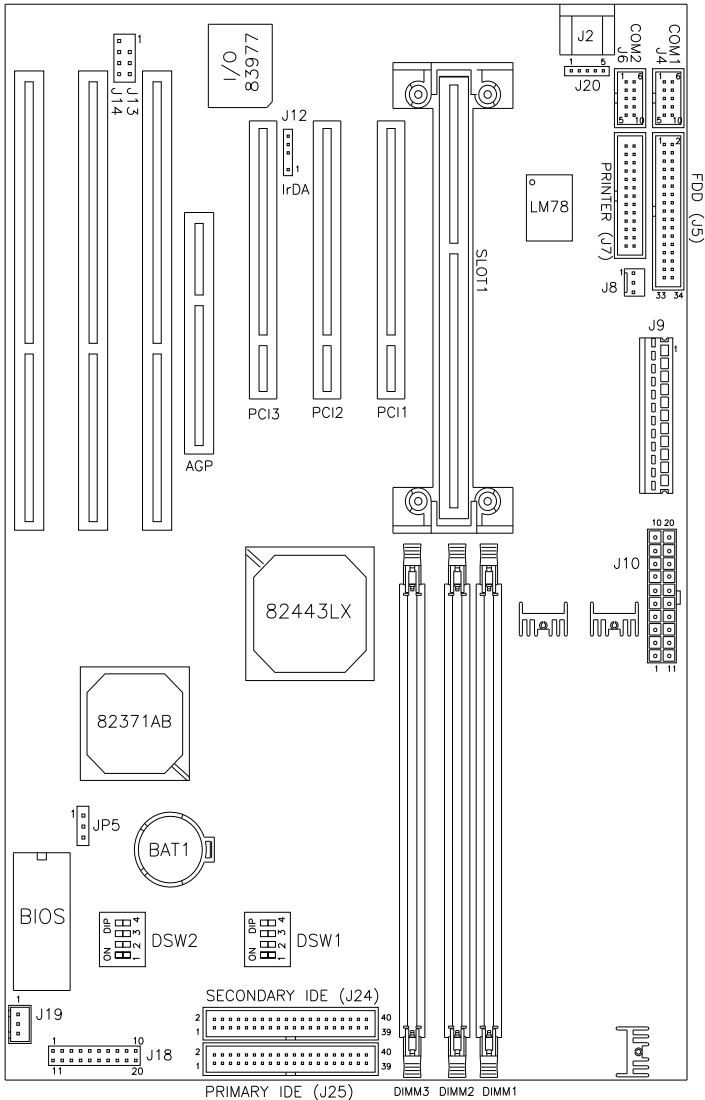


Figure 1: Layout of the AI6NL Motherboard

Chapter 3 Hardware Description

3.1 Processor

The AI6NL motherboard is designed to take a Pentium II processor running 233/266/300MHz with its SLOT 1 processor connector.

3.2 L2 Cache

The L2 cache is integrated in the Pentium II processor. The private L2 cache bus is not connected to package pins, rather its signals are routed between the two cavities using standard package techniques. The high-performance bandwidth is used by the CPU to serve all L1 cache misses, the characteristic of a CPU-cache bus, and is utilized 90-95 percent of the time.

3.3 Main Memory

The AI6NL motherboard supports Three 168-pin DIMM (Dual In-line Memory Module) sockets to accommodate DIMM modules (8MB, 16MB, 32MB, 64MB and 128MB) in SDRAM or EDO DRAM type. In populating the DIMM sockets, DIMM1, DIMM2 and DIMM3 bank can be populated first. Refer to the following table on how to configure the memory.

Chapter 3 Hardware Description

168Pin DIMM (3.3V)

SDRAM or EDO DRAM

| Bank0 (DIMM3) | Bank1 (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 |
| 16MB | 8MB | 8MB | 32MB |
| 32MB | 8MB | 8MB | 48MB |
| 64MB | 8MB | 8MB | 80MB |
| 128MB | 8MB | 8MB | 144MB |
| 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 | 16MB | 48MB |
| 32MB | 16MB | 16MB | 64MB |
| 64MB | 16MB | 16MB | 96MB |
| 128MB | 16MB | 16MB | 160MB |
| 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 | 16MB | 80MB |
| 64MB | 32MB | 16MB | 112MB |
| 128MB | 32MB | 16MB | 176MB |
| 32MB | 32MB | 32MB | 96MB |
| 64MB | 32MB | 32MB | 128MB |

Chapter 3 Hardware Description

168Pin DIMM (3.3V) (continued)

SDRAM or EDO DRAM

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

Chapter 3 Hardware Description

3.4 BIOS

The BIOS on the AI6NL 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 APM 1.2 specifications.

3.5 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 3 Hardware Description

3.6 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.

3.7 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 |
| IRQ8 | Real Time Clock |
| IRQ9 | Software Redirected to Int 0Ah |
| IRQ10 | Reserved |
| IRQ11 | Reserved |
| IRQ12 | Reserved |
| IRQ13 | Co-Processor |
| IRQ14 | Primary IDE |
| IRQ15 | Secondary IDE |
| IRQ3 | INTERRUPT |
| IRQ4 | Serial Port #1 |
| IRQ5 | INTERRUPT |
| IRQ6 | Floppy Disk Controller |
| IRQ7 | Parallel Port #1 |

3.8 Onboard PCI-IDE

The PCI-IDE controller is a part of the 82440LX PCIsset. 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.

Chapter 3 Hardware Description

3.9 Onboard Multi-I/O

The onboard multi-I/O chip, Winbond 83977, provides 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 supports high-speed EPP/ECP mode. The floppy controller supports up to 2.88 MB format.

3.10 Onboard AGP Port

The onboard AGP port supports AGP (Accelerated Graphics Port) VGA cards. AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping.



Chapter 4 Configuring the Motherboard


Chapter 4 Configuring the Motherboard

The following sections describe the necessary procedures and proper jumper settings to configure the AI6NL motherboard. For the locations of the jumpers, refer to Figure 2.

- ❑ 4.1.....CPU Frequency: DSW1, DWS2
- ❑ 4.2.....Clear CMOS Selection: JP5

The following examples show the conventions used in this chapter.

| | |
|---|---------------|
|  | Jumper Open |
|  | Jumper Closed |

| | |
|---|---|
|  | Switch 1 and switch 2 are set to OFF. Switch 3 and switch 4 are set to ON. |
|---|---|

Chapter 4 Configuring the Motherboard

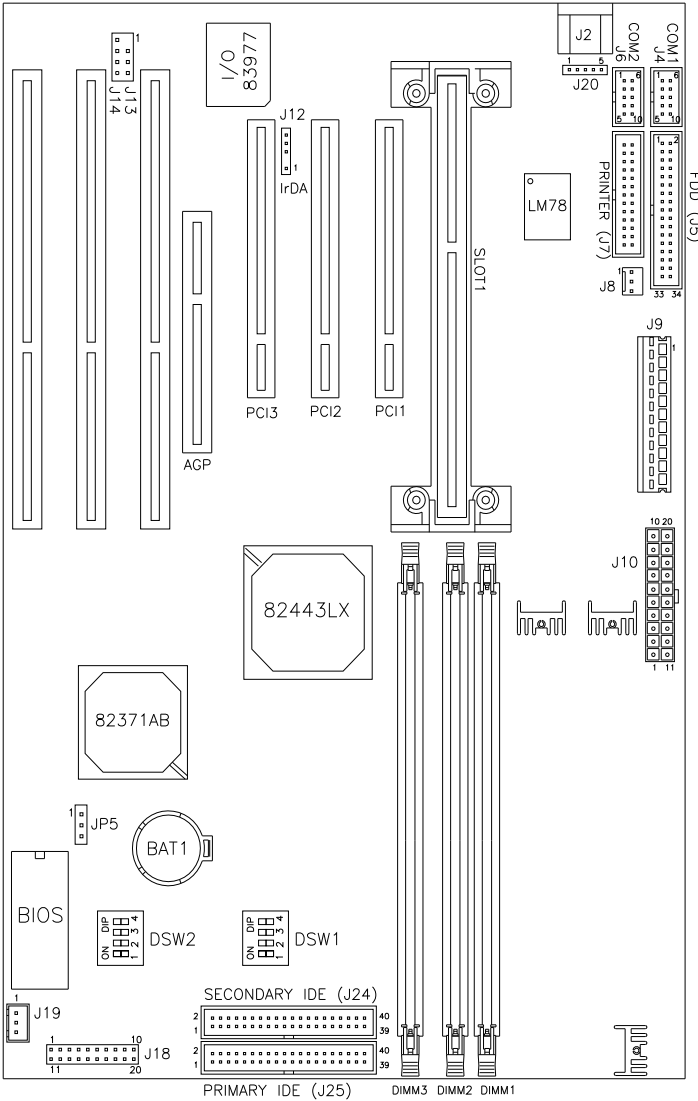







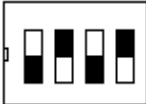
Figure 2: Jumper Location on the AI6NL

Chapter 4 Configuring the Motherboard

4.1 CPU Frequency: DSW1, DSW2

DSW1: sets the clock generator frequency to 66MHz, which is the frequency of the CPU, to the bus clock. **DSW2:** sets the ratio of the bus clock to the CPU internal clock.



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

| Pentium II CPU FREQ. | DSW1 | DSW2 |
|----------------------|---|---|
| Pentium II 233MHz |  |  |
| | off off off off | on off off on |
| Pentium II 266MHz |  |  |
| | off off off off | off on on on |
| Pentium II 300MHz |  |  |
| | off off off off | off on off on |

Chapter 4 Configuring the Motherboard

4.2 Clear CMOS Selection: JP5

Use JP5, 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.

| JP5 | Function |
|--|------------|
|  1 2 3 | Normal |
|  1 2 3 | Clear CMOS |

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

Chapter 5 Installation

Chapter 5 Installation

This chapter describes the interface that the AI6NL 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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| ❑ | 5.2 J2, J20: AT Keyboard and PS/2 Mouse Connector..... | 18 |
| ❑ | 5.3 J4, J6: Serial Ports..... | 19 |
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| ❑ | 5.5 J7: Parallel Port Connector..... | 20 |
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Chapter 5 Installation

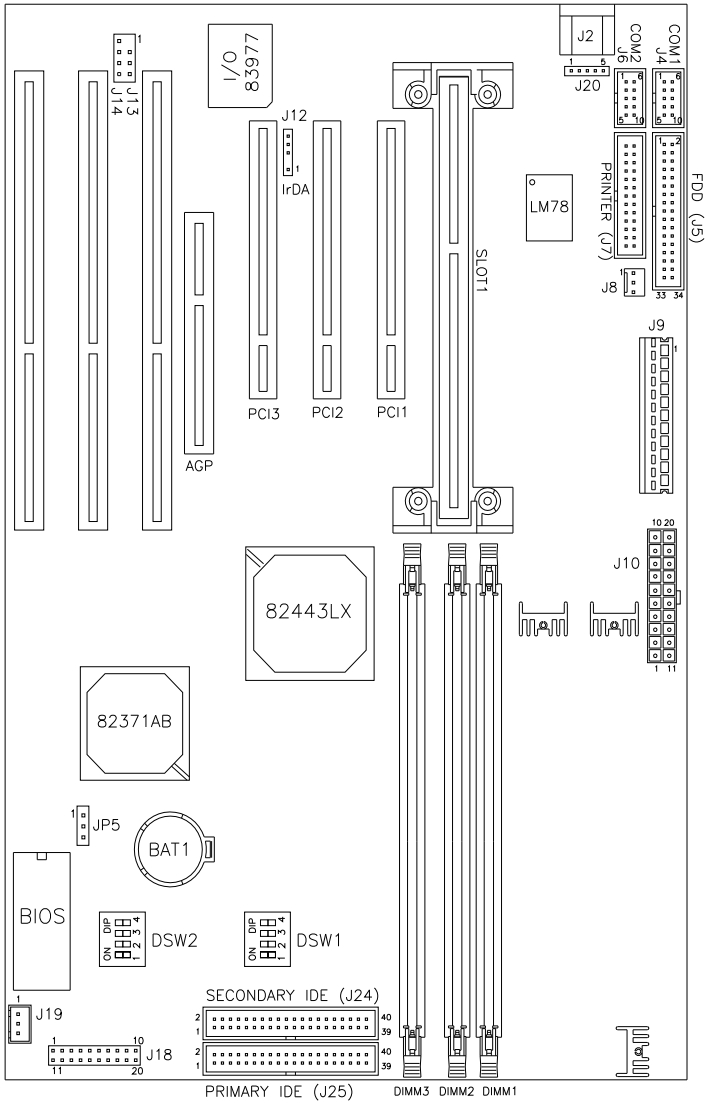


Figure 3: Connector Location on the AI6NL

Chapter 5 Installation

5.1 I/O Connectors

The I/O connectors connect the AI6NL 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.

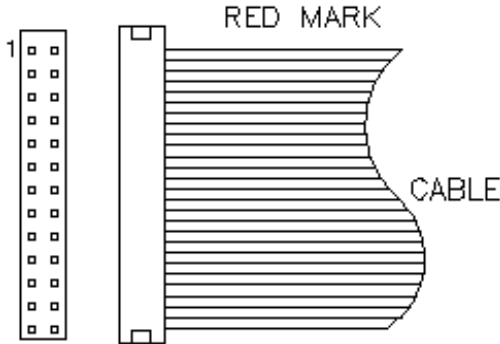
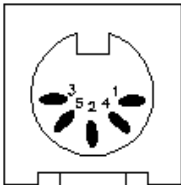


Figure 4: Orientation of the I/O Connector

5.2 J2, J20: AT Keyboard and PS/2 Mouse Connector

J2: AT Keyboard Connector



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

J20: PS/2 Mouse Connector

Chapter 5 Installation

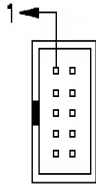


| Pin # | Signal Name |
|-------|-------------|
| 1 | Mouse data |
| 2 | N.C. |
| 3 | GND |
| 4 | 5V |
| 5 | Mouse Clock |

Chapter 5 Installation

5.3 J4, J6: Serial Ports

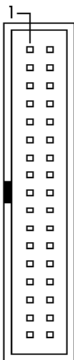
The onboard serial ports of the AI6NL are 10 pin-header connectors. J4 is COM1 and J6 is COM2. The following table shows the pin out of these connectors.



| 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 |
| 10 | Not Used |

5.4 J5: Floppy Drive Connector

J5 of the AI6NL is a 34-pin header and will support up to 2.88MB floppy drives.



| Signal Name | Pin # | Pin # | Signal Name |
|-------------|-------|-------|-------------|
|-------------|-------|-------|-------------|

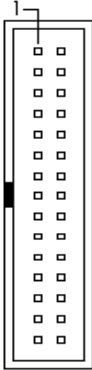
Chapter 5 Installation

| | | | |
|--------|----|----|-----------------|
| 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 |

Chapter 5 Installation

5.5 J7: Parallel Port Connector

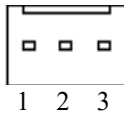
The following table describes the pin out assignments of this connector.



| 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 |

5.6 J8: CPU Fan Power Connector

J8 is a 3-pin header for the CPU fan power connector. The fan must be a 12V fan.



| J8 Pin # | Signal Name |
|----------|-------------|
| 1 | Rotation |
| 2 | +12V |
| 3 | Ground |

Chapter 5 Installation

Chapter 5 Installation

5.7 J9: AT Power Supply Connector

When using an AT compatible power supply, plug both of the power supply connectors into J9. Make sure the power supply connectors are connected in the right orientation. The power supply connectors are connected in the right orientation if the black wires of each power cable are ADJACENT to each other. That is, black wires of each connector should be aligned in the center of the J9 power supply connector.

| J9 Pin # | | Description | Wire Color |
|----------|---|-------------|------------|
| 1 | ⊖ | Power Good | Orange |
| 2 | λ | +5V | Red |
| 3 | λ | +12V | Yellow |
| 4 | λ | -12V | Blue |
| 5 | λ | Ground | Black |
| 6 | λ | Ground | Black |
| 7 | ⊖ | Ground | Black |
| 8 | λ | Ground | Black |
| 9 | λ | -5V | White |
| 10 | λ | +5V | Red |
| 11 | λ | +5V | Red |
| 12 | λ | +5V | Red |

5.8 J10: ATX Power Supply Connector

J10 is a 20-pin ATX power supply connector. Refer to the following table for the pin out assignments.

| Signal Name | | Pin # | | Pin # | | Signal Name | |
|-------------|----|-------|--|-------|--|-------------|--|
| 11 | 1 | | | | | | |
| 20 | 10 | | | | | | |

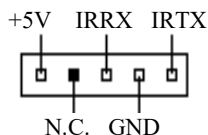
Chapter 5 Installation

| | | | |
|--------|----|----|------------|
| 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 |

Chapter 5 Installation

5.9 J12: IrDA Connector

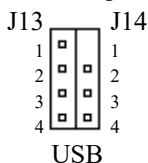
This connector is used for an IrDA connector that supports infrared wireless communication.



| J12 Pin # | Signal Name |
|-----------|-------------|
| 1 | +5V |
| 2 | No connect |
| 3 | Ir RX |
| 4 | Ground |
| 5 | Ir TX |

5.10 J13, J14: USB Connectors

J13 (USB1) and J14 (USB2) are the USB connectors. The following table shows the pin out assignments of these connectors.

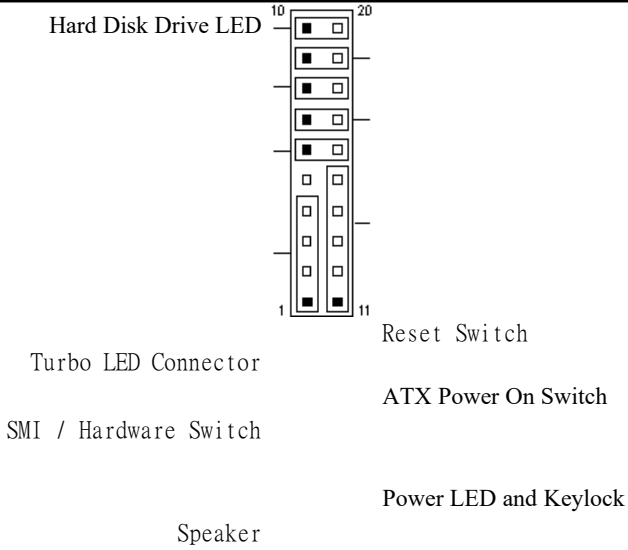


| J13 Pin # | J14 Pin # | Signal Name |
|-----------|-----------|-------------|
| 1 | 1 | Vcc |
| 2 | 2 | USB- |
| 3 | 3 | USB+ |
| 4 | 4 | Ground |

5.11 J18: Front Bezel Connector

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. J18 is a 20-pin header that provides interfaces for the following functions.

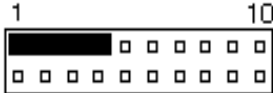
Chapter 5 Installation



Chapter 5 Installation

Speaker: Pins 1 - 4


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



| J18 Pin # | Signal Name |
|-----------|-------------|
| 1 | Speaker out |
| 2 | No connect |
| 3 | Ground |
| 4 | +5V |

Power LED and Keylock: Pins 11 - 15

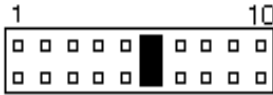
The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.



| J18 Pin # | Signal Name |
|-----------|-------------|
| 11 | Power LED |
| 12 | No connect |
| 13 | Ground |
| 14 | Keylock |
| 15 | Ground |

SMI/Hardware Switch: Pins 6 and 16

This connector supports the "Green Switch" on the control panel, which, when pressed, will force the system board into the power-saving mode immediately.



| J18 Pin # | Signal Name |
|-----------|-------------|
| 6 | Sleep |
| 16 | Ground |

ATX Power ON Switch: Pins 7 and 17

This 2-pin connector is an ATX Power Supply On/Off

Chapter 5 Installation

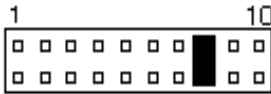
Switch on the motherboard that connects to the power switch on the case. When pressed, the power switch will force the motherboard to power on. When pressed again, it will force the motherboard to power off.



Chapter 5 Installation

Turbo LED Connector: Pins 8 and 18

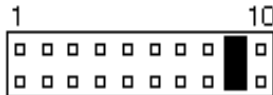
There is no turbo/deturbo function on the motherboard. The Turbo LED on the control panel will always be On when attached to this connector.



| J18 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

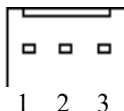
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



| J18 Pin # | Signal Name |
|-----------|-------------|
| 10 | Ground |
| 20 | 5V |

5.12 J19: Chassis Fan Power Connector

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



| J19 Pin # | Signal Name |
|-----------|-------------|
| 1 | Rotation |
| 2 | +12V |

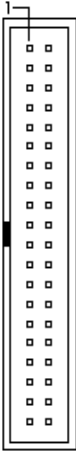
Chapter 5 Installation

| | |
|---|--------|
| 3 | Ground |
|---|--------|

Chapter 5 Installation

5.13 J25, J24: EIDE Connectors

J25: Primary IDE Connector

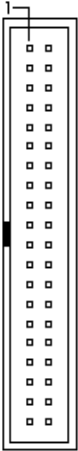


| Signal Name | Pin # | Pin # | Signal Name |
|---------------|-------|-------|---------------|
| Reset IDE | 1 | 2 | Ground |
| Host data 7 | 3 | 4 | Host data 8 |
| Host data 6 | 5 | 6 | Host data 9 |
| Host data 5 | 7 | 8 | Host data 10 |
| Host data 4 | 9 | 10 | Host data 11 |
| Host data 3 | 11 | 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 |

J24: Secondary IDE Connector

| Signal Name | Pin # | Pin # | Signal Name |
|-------------|-------|-------|-------------|
|-------------|-------|-------|-------------|

Chapter 5 Installation



| | | | |
|---------------|----|----|---------------|
| | | | |
| 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 |

Chapter 6 BIOS and System Setup

Chapter 6 BIOS and System Setup

This chapter describes the different settings available in the BIOS. The AI6NL motherboard comes with AMIBIOS in HIFLEX version. The topics covered in this chapter are as follows:

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|---|--------------------------------------|----|
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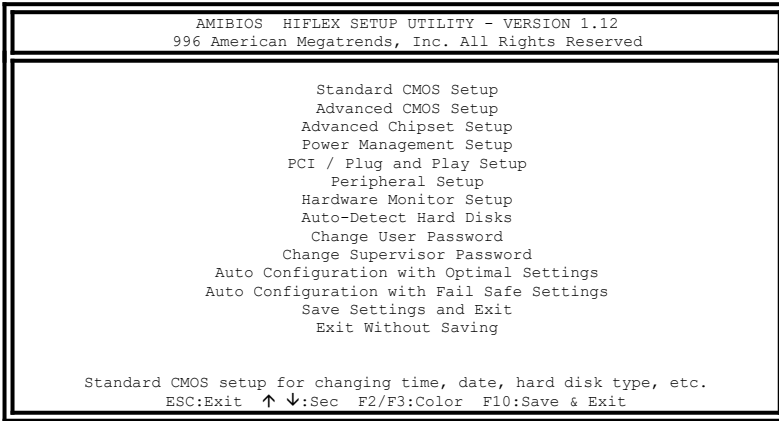
Chapter 6 BIOS and System Setup

6.1 Invoking the System Setup Program

Power on the system and the screen will display:

Hit to enter Setup

Hit the key and screen will display the main Setup screen.



Chapter 6 BIOS and System Setup

6.2 Running the Setup

Using the Keyboard with Setup

Use the following keys to modify and move around in the Setup:

| Keystroke | Function |
|-----------------|---|
| <Tab> | Move to the next field. |
| →, ←, ↑, ↓ | Move to the next field to the above, or below. |
| <Enter> | Select in the current field. |
| + / - | Modify Selection |
| <Esc> | Close the current operation and return to the previous level. |
| <PgUp> / <PgDn> | Modify Selection |
| F2, F3 | Change Screen Color |
| F10 | Save and Exit |

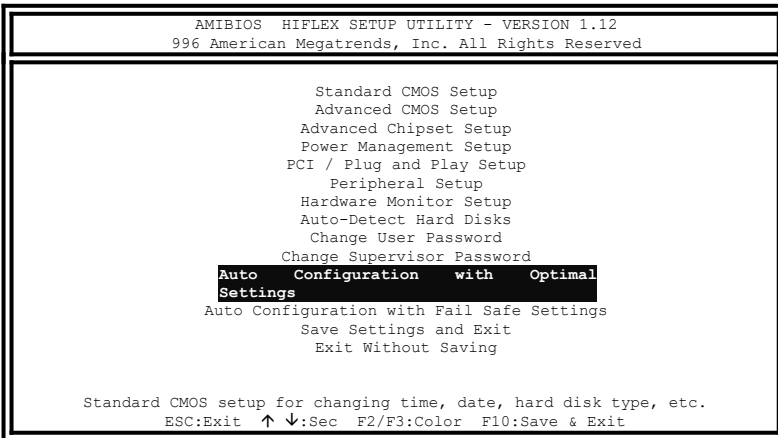
Chapter 6 BIOS and System Setup

6.3 Setup Main Menu

Default Values

The icons in this section permit you to select a group of settings for all the Setup options. Not only can you use these icons to quickly set system configuration parameters, you can choose a group of settings that have a better chance of working when the system is having configuration-related problems.

Optimal

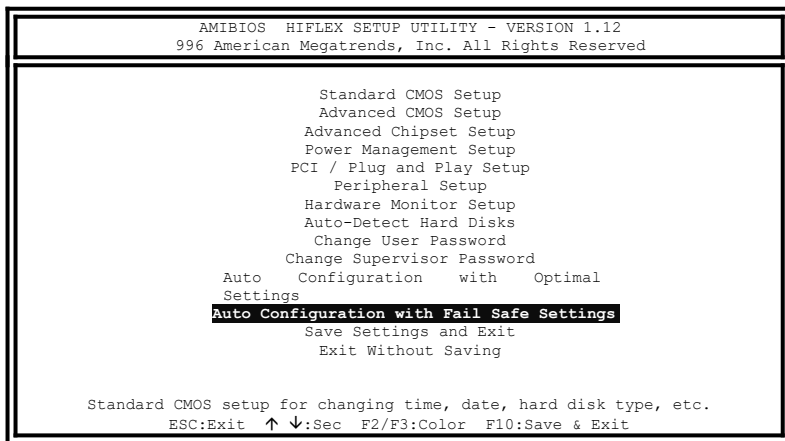


You can load the optimal default settings for the BIOS by selecting the Optimal icon. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the Optimal settings are loaded automatically.

Note: The optimal values are for regular use.

Chapter 6 BIOS and System Setup

Fail safe

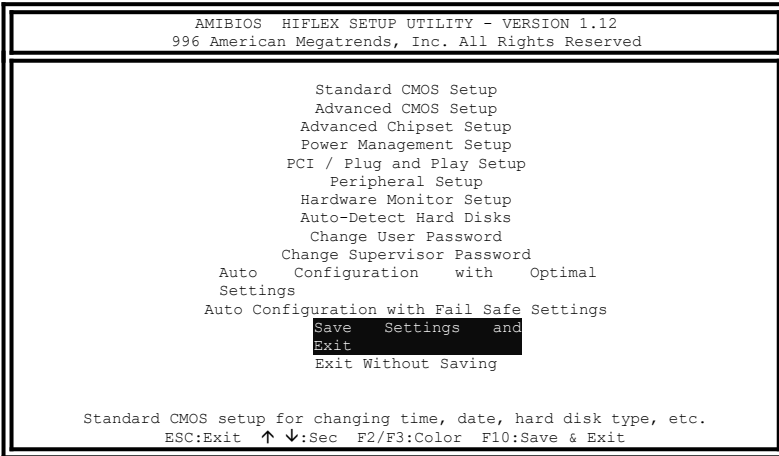


You can load the Fail-Safe BIOS Setup option setting by selecting the Fail-Safe icon from the Default section of the Setup main menu.

The Fail-Safe settings provide far-from-optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically.

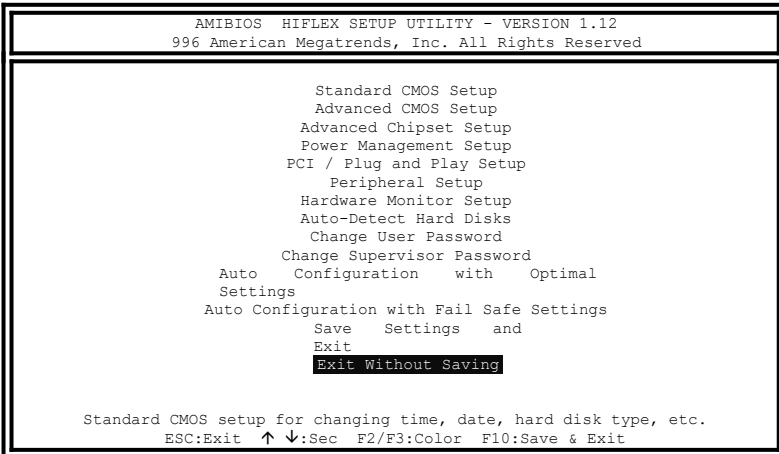
Chapter 6 BIOS and System Setup

Save Changes and Exit



Select this option to save into the CMOS RAM all the modifications you have specified during the current session.

Exit Without Saving



Select this option to exit the current session while disregarding the modifications that you have made.

Chapter 6 BIOS and System Setup

Setup Menu Categories

Your Setup program can have up to five separate screens. Different types of system configuration parameters are set on each screen.

| Type | Description |
|---------------------------|--|
| Standard CMOS Setup | Set the time and date. Configure disk drives. |
| Advanced CMOS Setup | Configure basic system performance parameters. |
| Advanced Chipset Setup | Configure features specific to the chipset used in the computer. |
| Power Management Setup | Configure power conservation features. |
| PCI / Plug and Play Setup | Configure PCI and Plug-and-Play features. |
| Peripheral Setup | Configure I/O support. |

Chapter 6 BIOS and System Setup

6.4 Standard CMOS Setup

Standard Setup options are displayed by choosing the Standard icon from the Setup menu. All Standard Setup options are described below.

| AMIBIOS SETUP - STANDARD CMOS SETUP | | | | | | | | | |
|---|------|------|-----|------|----------------------|-----|----------|----------|----------------|
| 996 American Megatrends, Inc. All Rights Reserved | | | | | | | | | |
| Date (mm/dd/yyyy) : Fri July 04, 1997 | | | | | Base Memory : 640 KB | | | | |
| Time (hh/mm/ss) : 14:44:03 | | | | | Extd Memory : 383 MB | | | | |
| Floppy Drive A: 1.44MB 3↔ | | | | | | | | | |
| Floppy Drive B: Not Installed | | | | | | | | | |
| | Type | Size | Cyl | Head | Wpcom | Sec | LBA Mode | Blk Mode | PIO 32Bit Mode |
| Primary Master: | Auto | | | | | | | | On |
| Pri Slave : | Auto | | | | | | | | On |
| Sec Master : | Auto | | | | | | | | On |
| Sec Slave : | Auto | | | | | | | | On |
| Boot Sector Virus Protection: Disabled | | | | | | | | | |
| Month: Jan - Dec | | | | | ESC: Exit ↑↓:Sel | | | | |
| Day : 01 - 31 | | | | | PgUp/PgDn:Modify | | | | |
| Year : 1901 - 2099 | | | | | F2/F3:Color | | | | |

Date/Time

Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.

Floppy Drive A, B

Choose the Floppy Drive A or B icon to specify the floppy drive type. The settings are *360KB 5 1/4"*, *1.2MB 5 1/4 720KB 3 1/2"*, *1.44MB 3 1/2"*, and *2.88MB 3 1/2"*

Configuring IDE Drives

If the hard disk drive to be configured is an IDE drive, select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the *Type* parameter and select *Auto*. The BIOS automatically detects the IDE drive parameters and displays them. Click on the OK button to accept these parameters.

Configuring an MFM Drive

In configuring an old MFM hard disk drive, you must know the drive parameters (number of heads, number of cylinders, number of sectors, the starting write precompensation cylinder, and drive capacity). Choose *Type* and choose the appropriate hard disk drive type (1-46).

Chapter 6 BIOS and System Setup

User-Defined Drive

If you are configuring a SCSI drive or an MFM, RLL, ARLL, or ESDI drive with drive parameters that do not match drive types 1-46, you must select *User* in the *Type* field and enter the drive parameters on the screen that appears. The drive parameters include:

- Cylinder (number of cylinders),
- Hd (number of heads),
- WP (starting write precompensation cylinder),
- Sec (number of sectors), and
- Size (drive capacity).

Configuring a CD-ROM Drive

Select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the *Type* parameter and select CDROM. You can boot the computer from a CD-ROM drive.

Boot Sector Virus Protection

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.

Chapter 6 BIOS and System Setup

6.5 Advanced CMOS Setup

| AMIBIOS SETUP - ADVANCED CMOS SETUP 996 American Megatrends, Inc. All Rights Reserved | | |
|--|------------|--------------------|
| Quick Boot | Disabled | Available Options: |
| 1 st Boot Device | FLOPPY | Disabled |
| 2 nd Boot Device | IDE-0 | Enabled |
| 3 rd Boot Device | Disabled | |
| Try Other Boot Devices | Yes | |
| Floppy Access Control | Read-Write | |
| HDD Access Control | Read-Write | |
| S. M.A.R.T. for Hard Disks | Disabled | |
| BootUp Num-Lock | On | |
| Floppy Drive Swap | Disabled | |
| Floppy Drive Seek | Enabled | |
| PS/2 Mouse Support | Enabled | |
| Primary Display | VGA/EGA | |
| Password Check | Setup | |
| Boot To OS/2 > 64MB | No | |
| Internal Cache | WriteBack | |
| System BIOS Cacheable | Enabled | ESC:Exit ↑↓:Sel |
| C000, 16k Shadow | Cached | PgUp/PgDn:Modify |
| C400, 16k Shadow | Cached | F2/F3:Color |

Quick Boot

Set this option to *Enabled* to instruct AMIBIOS to boot quickly when the computer is powered on. This option replaces the old **Above 1 MB Memory Test** Advanced Setup option.

BootUp Sequence

This option sets the sequence of boot drives. Four boot devices can be set according to the user preference (Floppy, *IDE-0 / IDE-1*, *CD-ROM*, *SCSI*, *FLOPTICAL[LS-120]*).

Floppy / HDD Access Control

Set this option to Normal to allow the floppy and hard disk drive to perform read and write operations. The settings are *Normal* and *read only*. The Optimal and Fail-Safe default setting is ***Read-Write***.

S.M.A.R.T. for Hard Disks

Enabling this option allows the system to support hard disks with the S.M.A.R.T. feature. The default setting is ***Disabled***.

BootUp Num-Lock

Set this option to *Off* to turn the Num Lock key off when the computer is booted so you can use the arrow keys on both the numeric keypad and the keyboard. The settings are *On* and *Off*. The default setting is ***On***.

Chapter 6 BIOS and System Setup

Floppy Drive Swap

Set this option to *Enabled* to permit drives A: and B: to be swapped. The settings are *Enabled* and *Disabled*. The default setting is ***Disabled***.

Floppy Drive Seek

Set this option to *Enabled* to specify that floppy drive A: will perform a Seek operation at system boot. The settings are *Disabled* and *Enabled*. The Optimal default setting is ***Enabled***.

PS/2 Mouse Support

When this option is set to *Enabled*, AMIBIOS supports a PS/2-type mouse. The settings are *Enabled* and *Disabled*. The default setting is ***Enabled***.

Primary Display

This option specifies the type of display monitor and adapter in the computer. The settings are *Mono*, *CGA40*, *CGA80*, *VGA/EGA*, and *Absent*. The Optimal and Fail-Safe default setting is ***VGA/EGA***.

Password Check

This option enables password checking every time the computer is powered on or every time BIOS Setup is executed. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if BIOS is executed. The Optimal and Power On defaults are ***Setup***.

Boot to OS/2 > 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 settings are *Yes* and *No*. For non-OS/2 systems, set this option to *No*. The default setting is ***No***.

Chapter 6 BIOS and System Setup

Internal Cache

This option specifies the caching algorithm used for the internal cache memory. The settings are:

| Setting | Description |
|-----------------------------|--|
| <i>Disabled</i> | Neither L1 internal cache memory on the CPU or L2 secondary cache memory is enabled. |
| <i>Write Back (default)</i> | Use the write-back caching algorithm. |
| <i>Write Thru</i> | Use the write-through caching algorithm. |

System BIOS Shadow cacheable

When this option is set to *Enabled*, the contents of the F0000h system memory segment can be read from or written to L2 secondary cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to the system RAM for faster execution.

The settings are *Enabled* and *Disabled*. The Optimal default setting is ***Enabled***. The Fail-Safe default setting is ***Disabled***.

C000-DC000, 16k 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.

Chapter 6 BIOS and System Setup

6.6 Advanced Chipset Setup

| AMIBIOS SETUP - ADVANCED CMOS SETUP | | |
|---|----------|--|
| 996 American Megatrends, Inc. All Rights Reserved | | |
| Auto Configure EDO DRAM Timing | Enabled | Available Options: Disabled Enabled |
| EDO DRAM Speed (ns) | 60 | |
| EDO Read Burst Timing | x222 | |
| EDO Write Burst Timing | x222 | |
| MA Wait State | Fast | |
| *****SDRAM Timing ***** | | |
| SDRAM RAS to CAS Delay | 2 Clks | |
| SDRAM CAS Latency | 3 Clks | |
| SDRAM RAS Precharge Time | 2 Clks | |
| DRAM Integrity Mode | Non ECC | |
| Fixed Memory Hole | Disabled | |
| CPU To PCI IDE Posting | Enabled | |
| USWC Write I/O Post | Disabled | |
| AGP Aperture Size | 64MB | |
| PIIX4 Delayed Transaction | Disabled | |
| USB Function | Disabled | |
| USB Keyboard Legacy Support | Disabled | |
| | | ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color |

Auto Configure DRAM Timing

Use this option to specify the timing on the memory bus. The default setting is **Enabled**.

EDO DRAM Speed

This specifies the RAS access speed of the SIMMs installed on the motherboard as system memory. The settings are **60ns** and **70ns**. The default setting is **60ns**.

EDO Read Burst Timing

This sets the timing for burst mode reads from different DRAMs (BEDO/EDO/FP). Burst read and write requests are generated by the CPU in four separate parts. The first part provides the location within the DRAM where the read or write is to take place while the remaining three parts provide the actual data. The lower the timing numbers, the faster the system will address memory.

EDO Write Burst Timing

This sets the timing for burst mode writes from DRAM. Burst read and write requests are generated by the CPU in four separate parts. The first part provides the location within the DRAM where the read or write is to take place while the remaining three parts provide the actual data. The lower the timing numbers, the faster the system will address memory.

Chapter 6 BIOS and System Setup

MA Wait State

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

SDRAM RAS to CAS Delay

When DRAM is refreshed, both rows and columns are addressed separately. This field allows you to determine the timing of the transition from Row Address Strobe (RAS) to Column Address Strobe (CAS). By default, it is set to ***2 clocks***.

SDRAM CAS Latency

This option sets the CAS latency of the SDRAM. The higher the speed, the better quality the performance of the SDRAM. The default setting is ***3 clocks***.

SDRAM RAS Precharge Time

DRAM must continuously be refreshed or it will lose its data. This option allows you to determine the number of CPU clocks allocated for Row Address Strobe to accumulate its charge before DRAM is refreshed. If the refreshed time is not enough, refresh may be incomplete and data will be lost.

DRAM Integrity Mode

This option allows software configurability of selecting between ECC (error checking and correction) mode, EC only or Non-ECC. The default setting is ***Non-ECC***.

Fixed Memory Hole

Enabling this feature reserves (15MB to 16MB or 512KB to 640KB) memory address space to ISA expansion cards that specifically require this setting. This makes the memory from 15MB or 512MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. The default setting is ***Disabled..***

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***.

Chapter 6 BIOS and System Setup

USWC Write I/O Post

The setting of *Enabled* allows USWC write posting during I/O bridge access. The default setting is *Disabled*.

AGP Aperture Size

The settings for this options are *4MB*, *8MB*, *16MB*, *32MB*, *64MB*, *128MB* and *2566MB*. The default setting is *64MB*.

PIIX4 Delayed Transaction

When enabled, the PIIX4 transaction is delayed. By default the optimal setting is *Disabled* and the Fail-Safe setting is *disabled*.

USB Function

When enabled, the option allows legacy support for a USB keyboard. By default, the optimal settings are *Disabled*.

Chapter 6 BIOS and System Setup

6.7 Power Management Setup

| AMIBIOS SETUP - POWER MANAGEMENT SETUP 996 American Megatrends, Inc. All Rights Reserved | | |
|---|----------|--|
| Power Management/APM | Disabled | Available Options: Disabled Enabled |
| Green PC Monitor Power State | Off | |
| Video Power Down Mode | Suspend | |
| Hard Disk Time Out (Minute) | Disabled | |
| Standby Time Out (Minute) | Disabled | |
| Suspend Time Out (Minute) | Disabled | |
| Throttle Slow Clock Ratio | 50-62.5% | |
| Modem Use IO Port | N/A | |
| Modem Use IRQ | N/A | |
| Display Activity | Ignore | |
| Device 6 (Serial port 1) | Monitor | |
| Device 7 (Serial port 2) | Monitor | |
| Device 8 (Parallel port) | Ignore | |
| Device 5 (Floppy disk) | Monitor | |
| Device 0 (Primary master IDE) | Monitor | |
| Device 1 (Primary slave IDE) | Ignore | |
| Device 2 (Secondary master IDE) | Monitor | |
| Device 3 (Secondary slave IDE) | Ignore | |
| Power Button Function | On/Off | ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color |
| Ring Resume From Soft Off | Disabled | |

Power Management/ APM

Set this option to *Enabled* to enable the power-management and APM (Advanced Power Management) features. The settings are *Enabled* and *Disabled*. The default setting is *Disabled*.

Green PC Monitor Power State

This option specifies the power-management state that the Green PC-compliant video monitor enters after the specified period of display inactivity has expired. The settings are *Disabled*, *off*, *Standby*, and *Suspend*. The default setting is *Off*.

Video Power Down Mode

This option specifies the power-management state that the video subsystem enters after the specified period of display inactivity has expired. The settings are *Disabled*, *Standby*, and *Suspend*. The default is *Suspend*.

Hard Disk Power Down Mode

This option specifies the power-management state that the hard disk drive enters after the specified period of display inactivity has expired. The settings are *Disabled*, *Standby*, and *Suspend*. The default setting is *Disabled*.

Chapter 6 BIOS and System Setup

Hard Disk Time Out (Minute)

This option specifies the power-management state that the hard disk drive enters after the specified period of display inactivity has expired. The settings are *Disabled*, *Standby*, and *Suspend*. The default setting is *Disabled*.

Standby Timeout

This option specifies the length of the period of system inactivity when the computer is in Full On mode before the computer is placed in Standby mode. In Standby mode, some power use is curtailed. The settings are *Disabled*, *1 Min*, *2 Min*, and *all one minute intervals up to and including 15 Min*. The default setting is *Disabled*.

Suspend Timeout

This option specifies the length of the period of system inactivity when the computer is already in Standby mode before the computer is placed in Suspend mode. In Suspend mode, nearly all power use is curtailed. The settings are *Disabled*, *1 Min*, *2 Min*, and *all one minute intervals up to and including 15 Min*. The default setting is *Disabled*.

Throttle Slow Clock Ratio

This option specifies the speed at which the system clock runs in power- saving modes. The settings are expressed as a ratio between the normal clock speed and the power down clock speed. The settings are *-0-12.5%*, *12.5-25%*, *25-37.5%*, *27.5-50%*, *50-62.5%*, *62.5-75%*, *75-87.5%*. The Optimal and Fail-Safe default settings are *50-62.5%*.

Modem Use I/O Port

This option specifies the COM port that is being used by the system 僣 modem. The settings are *N/A*, *COM1*, *COM2*, *COM3* and *COM4*. The default setting is *N/A*.

Modem Use IRQ

This option specifies the IRQ being used by the external modem for the Modem wake-up feature of the motherboard.

Display Activity

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

Chapter 6 BIOS and System Setup

Device 0/1/2/3/5/6/7/8(Serial port 1/2, Parallel port, Floppy disk, Primary master/slave IDE, Secondary master/slave IDE)

These options enable event monitoring. When the computer is in a power-saving mode, activity on the named interrupt request line is monitored by AMIBIOS. When any activity occurs, the computer enters the Full On mode.

Power Button Function

This option allows the power button to function as a simple on/off button or with the suspend function. The options are *On/Off* and *Suspend*. In the Suspend mode, the system powers off after pressing the power button for more than four seconds or enters the suspend mode when pressed for less than four seconds. By default, this option is set to *On/Off*.

Ring Resume From Soft Off

This option allows the system to be turned on remotely through a modem from its soft-off state. By default, this option is set to *Disabled*.

RTC Alarm Resume From Soft Off

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

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6.8 PCI / Plug and Play Setup

| AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP 996 American Megatrends, Inc. All Rights Reserved | | |
|--|----------|--|
| Plug and Play Aware O/S | No | Available Options: |
| Clear NVRAM on Every Boot | No | No |
| PCI Latency Timer (PCI Clocks) | 64 | Yes |
| PCI VGA Palette Snoop | Disabled | |
| Allocate IRQ to PCI VGA | Yes | |
| PCI IDE Busmaster | Disabled | |
| OffBoard PCI IDE Card | Auto | |
| OffBoard PCI IDE Primary IRQ | Disabled | |
| OffBoard PCI IDE Secondary IRQ | Disabled | |
| DMA Channel 0 | PnP | |
| DMA Channel 1 | PnP | |
| DMA Channel 3 | PnP | |
| DMA Channel 5 | PnP | |
| DMA Channel 6 | PnP | |
| DMA Channel 7 | PnP | |
| IRQ3 | PCI/PnP | |
| IRQ4 | PCI/PnP | |
| IRQ5 | PCI/PnP | |
| IRQ7 | PCI/PnP | |
| IRQ9 | PCI/PnP | |
| | | ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color |

Plug and Play Aware OS

Set this option to *Yes* if the operating system installed in the computer is Plug and Play-aware. AMIBIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware.

Set this option to *No* if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly. The settings are *No* and *Yes*. The Optimal and Fail-Safe default settings are *No*.

Clear NVRAM on Every Boot

Enabling this option erases the NVRAM containing PnP information on every boot. The Optimal and Fail-Safe settings are *No*.

PCI Latency Timer (in PCI Clocks)

This option sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks. The settings are *32, 64, 96, 128, 160, 192, 244, and 248*. The Optimal and Fail-Safe default settings are *64*.

PCI VGA Palette Snoop

This option must be set to *Enabled* if any ISA adapter card installed in the computer requires VGA palette snooping. The settings are *Disabled* and *Enabled*. The Optimal and Fail-Safe default settings are *Disabled*.

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Allocate IRQ to PCI VGA

Enabling this option allocates an IRQ to the PCI VGA on the motherboard. Normally, PCI VGA does not use any IRQ. If you have several add-on cards on the motherboard and the IRQs are not enough, then this option can be set to *NO*. By default, this field is set to *Yes*.

PCI IDE BusMaster

Set this option to *Enabled* to specify that the IDE controller on the PCI local bus has bus mastering capability. The settings are *Disabled* and *Enabled*. The Optimal and Fail-Safe default setting is *Disabled*.

Offboard PCI IDE Card

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the motherboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used, the onboard IDE controller on the motherboard is automatically disabled. The settings are *Disabled*, *Auto*, *Slot1*, *Slot2*, *Slot3*, and *Slot4*.

If *Auto* is selected, AMIBIOS automatically determines the correct setting for this option. The Optimal and Fail-Safe default setting is *Auto*.

Offboard PCI IDE Primary IRQ

The Optimal and Fail-Safe default setting is *Disabled*.

Offboard PCI IDE Secondary IRQ

The Optimal and Fail-Safe default setting is *Disabled*.

DMA Channel 0 / 1 / 3 / 5 / 6 / 7

| | | | | |
|-------------|-------------|--------------|--------------|--------------|
| IRQ3 | IRQ5 | IRQ9 | IRQ11 | IRQ14 |
| IRQ4 | IRQ7 | IRQ10 | IRQ12 | IRQ15 |

These options specify the bus that the named interrupt request lines (IRQs) are used on. These options allow you to specify IRQs for use by legacy ISA adapter cards.

These options determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to BIOS configurable devices. The available IRQs pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these

Chapter 6 BIOS and System Setup

PCI/PnP Setup options to remove the IRQ by assigning the option to the ISA setting. Onboard I/O is configurable by AMIBIOS. The IRQs used by onboard I/O are configured *PCI/PnP*.

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The settings are *PCI/PnP* and *ISA*. The Optimal and Fail-Safe default setting is *PCI/PnP*.

Reserved Memory Size

This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are *16K*, *32K* and *64K*. The Optimal and Fail-Safe default setting is *Disabled*.

Reserved Memory Address

This option specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for used by legacy ISA adapter cards. The settings are *C0000*, *C4000*, *C8000*, *CC000*, *D0000*, *D4000*, *D8000* and *DC000*. The Optimal and Fail-Safe default setting is *Disabled*.

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6.9 Peripheral Setup

Peripheral Setup options are displayed by choosing the Peripheral Setup icon from the Setup main menu. All Peripheral Setup options are described in this section.

| AMIBIOS SETUP - PERIPHERAL SETUP | | | |
|---|-----------|---|--|
| 996 American Megatrends, Inc. All Rights Reserved | | | |
| OnBoard FDC | Auto | Available Options: Auto Disabled Enabled | |
| OnBoard Serial PortA | 3F8h/COM1 | | |
| OnBoard Serial PortB | 2F8h/COM2 | | |
| Serial PortB Mode | N/A | | |
| IR Duplex Mode | N/A | | |
| IrDA Protocol | N/A | | |
| IR Port Support | Disabled | | |
| IR Mode Select | N/A | | |
| IR Base Address Select | N/A | | |
| IR IRQ Select | N/A | | |
| IR DMA Select | N/A | | |
| OnBoard Parallel Port | Auto | | |
| Parallel Port Mode | Normal | | |
| EPP Version | N/A | | |
| Parallel Port IRQ | Auto | | |
| Parallel Port DMA Channel | N/A | | |
| OnBoard IDE | Both | | |
| | | | ESC:Exit ↑↓:Sel PgUp/PgDn:Modify F2/F3:Color |

Onboard FDC

This option enables the floppy drive controller on the motherboard. The Optimal default setting is *Auto*.

Onboard Serial PortA

This option enables serial port 1 on the motherboard and specifies the base I/O port address for serial port 1.

The settings are *3F8h*, *3E8h*, *Auto*, and *Disabled*. The Optimal default setting is *3F8h*. The Fail-Safe default setting is *Auto*.

Onboard Serial PortB

This option enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2.

The settings are *2F8h*, *2E8h*, *Auto*, and *Disabled*. The Optimal default setting is *2F8h*. The Fail-Safe default setting is *Auto*.

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IR Port Support

This option enables IR port on the motherboard. The default settings are **Disabled**.

Onboard Parallel Port

This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are *378h*, *278h*, *Auto* and *Disabled*. The Optimal default setting is **Auto**. The Fail-Safe default setting is **Auto**.

Parallel Port Mode

This option specifies the parallel port mode. ECP and EPP are both bi-directional data transfer schemes that adhere to the IEEE P1284 specifications. The settings are:

| Setting | Description |
|---------------|---|
| <i>Normal</i> | The normal parallel port mode is used. This is the default setting. |
| <i>Bi-Dir</i> | Use this setting to support bi-directional transfers on the parallel port. |
| <i>EPP</i> | The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device. |
| <i>ECP</i> | The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve transfer rates of approximately 2.5MB/sec. ECP provides symmetric bi-directional communications. |

Parallel Port DMA Channel

This option is only available if the setting for the **Parallel Port Mode** option is ECP. The settings are *Disabled*, *N/A*, *DMA CH (channel) 0*, *DMA CH 1*, and *DMA CH 3*. The default setting is *N/A*.

Onboard IDE

This option specifies the onboard IDE controller channels that will be used. The settings are *Primary*, *Secondary*, *Both*, and *Disabled*. The Optimal and Fail-Safe default settings are **Both**.

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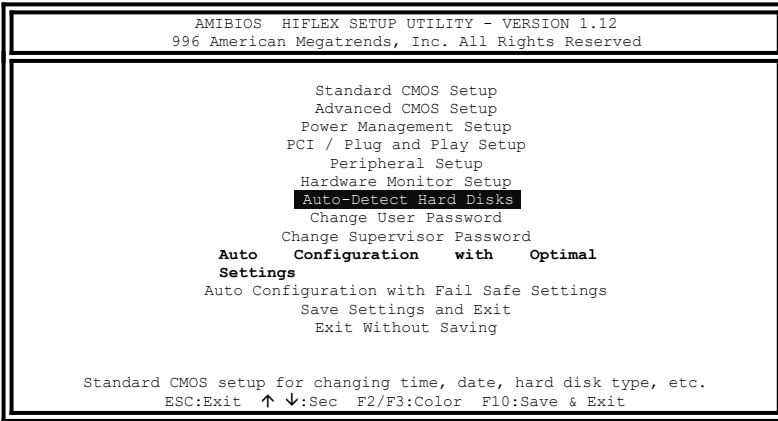
6.10 Hardware Monitor Setup

| AMIBIOS SETUP - PERIPHERAL SETUP | | |
|---|------------|--------------------|
| 996 American Megatrends, Inc. All Rights Reserved | | |
| ---System Hardware Monitor--- | | Available Options: |
| Current CPU Temperature | 39°C/102°F | - |
| Current CPU Fan Speed | 6463RPM | - |
| Current Chassis Fan Speed | 6875RPM | |
| Vcore | 2.832V | |
| Vio | 3.408V | |
| +5.000V | 5.013V | |
| +12.000V | 12.567V | |
| -12.000V | -11.930V | |
| -5.000V | -5.124 | |
| | | ESC:Exit ↑↓:Sel |
| | | PgUp/PgDn:Modify |
| | | F2/F3:Color |

The Hardware Monitor Setup is for read-only. It shows the current status of the system hardware being monitored which include the system temperature, system voltages, cpu fan speed and chassis fan speed.

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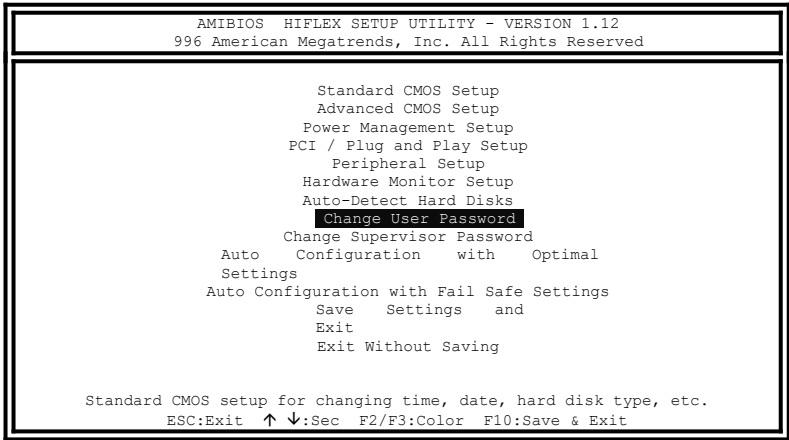
6.11 Auto-Detect Hard Disks



This option detects the parameters of an IDE devices and automatically enters them into the Standard CMOS Setup screen. Both CD-ROMs and FLOPTICAL drives can also be detected.

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6.12 Password



If You Do Not Want to Use a Password

Just press <Enter> when the password prompt appears.

Setting a Password

The password check option is enabled in Advanced Setup by choosing either *Always* (the password prompt appears every time the system is powered on) or *Setup* (the password prompt appears only when BIOS is run). The password is stored in the CMOS RAM.

You can enter a password by typing the password on the keyboard.

When you select *Supervisor* or *User*, AMIBIOS prompts for a password. You must set the *Supervisor* password before you can set the *User* password. Enter a 1-6 character password. The password does not appear on the screen when typed. Make sure you write it down. If you forget it, you must drain the CMOS RAM and reconfigure the system.

Chapter 7 LANDesk User Guide

Chapter 7 LANDesk User Guide

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

The following items are covered in this chapter:

- 7.1 Introduction.....55
- 7.2 Installation.....56
 - 7.2.1 Installing LANDesk Client Manager.....57
 - 7.2.2 Install LANDesk Administrator Manager.....60
 - 7.2.3 Installing LDCM Custom Setup.....63

Chapter 7 LANDesk User Guide

7.1 Introduction

LANDesk Client Manager (LDCM) 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) 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.

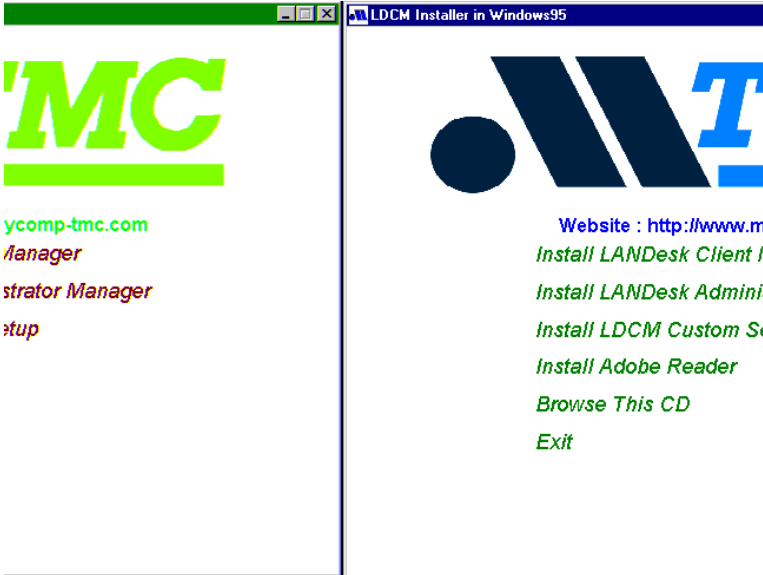
LDCM provides the user with self-help diagnostics, including a PC health meter, local alerting of potential problems, and hardware and software inventory. Automatic polling and alerting of memory and hardware conditions and predictive failure mechanisms minimize downtime and increase effective troubleshooting.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

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7.2 Installation

The LANDesk software that comes with the motherboard runs in Windows NT or Windows 95 system.

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



If you are the client user or the administrator, click the **Install LANDesk Client Manager** or **Install LANDesk Administrator Manager**. If you want to manage your equipment by yourself, click **Install LDCM Custom Setup**.

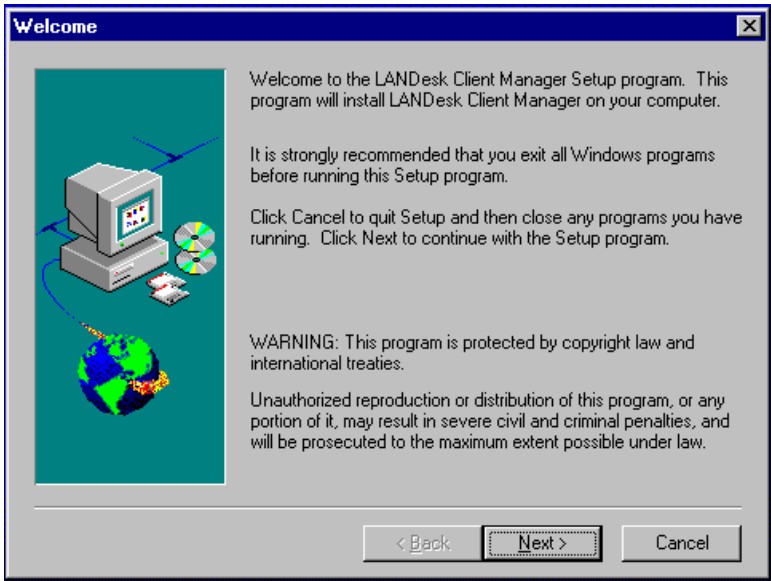
In order to read the manual, you will need the Adobe Reader software. Click **Install Adobe Reader** to install software into your system.

If your operating system is Windows NT 3.51, run the following **setup.exe** command in the following directories accordingly:

- LDCM\NT\Client (for LANDesk Client Manager)
- LDCM\NT\Admin (for LANDesk Administrator Manager)
- LDCM\NT\Custom (for LDCM Custom Setup)

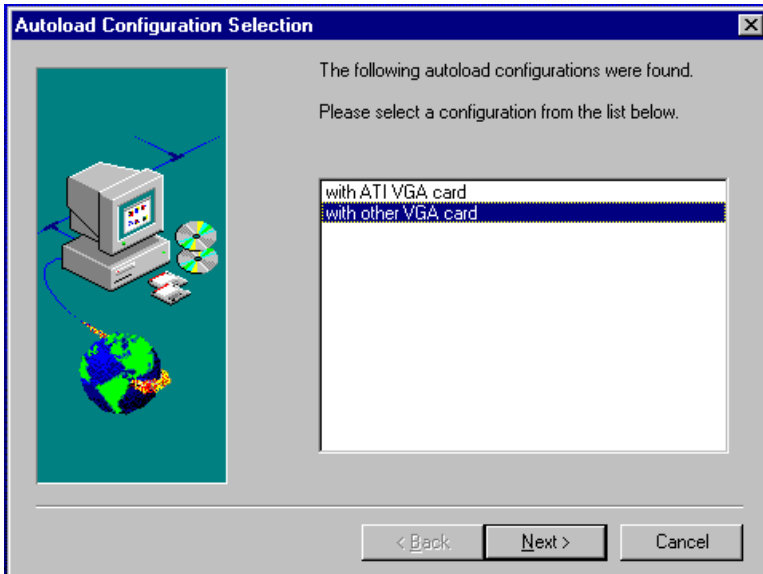
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7.2.1 Installing LANdesk Client Manager

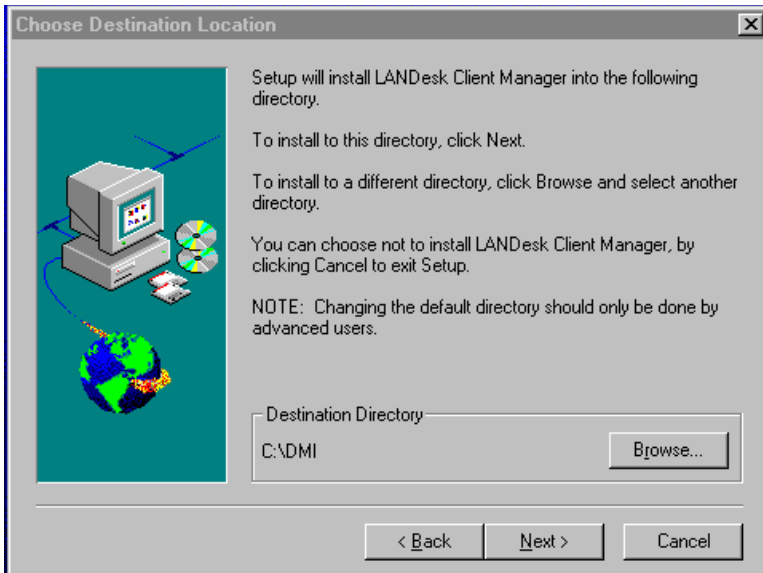


Click 鐵install LANdesk Client Manger You will then see the welcome message. Click 幪extto continue.

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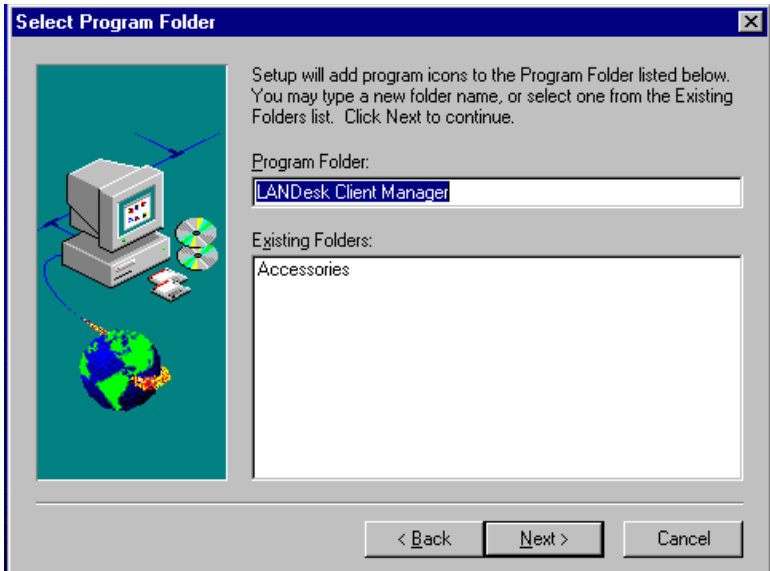


If you are using ATI VGA card, choose 嬉ith ATI VGA card
Otherwise, choose 忸ith other VGA card Click 幠extto continue.

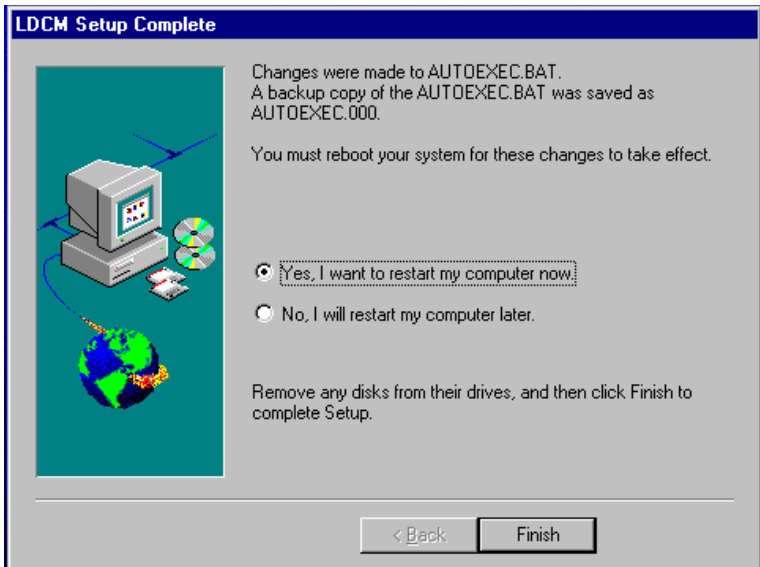


To change the directory where Setup will install LANdesk Client Manager, click 僇rowse
Otherwise, click 幠extto continue.

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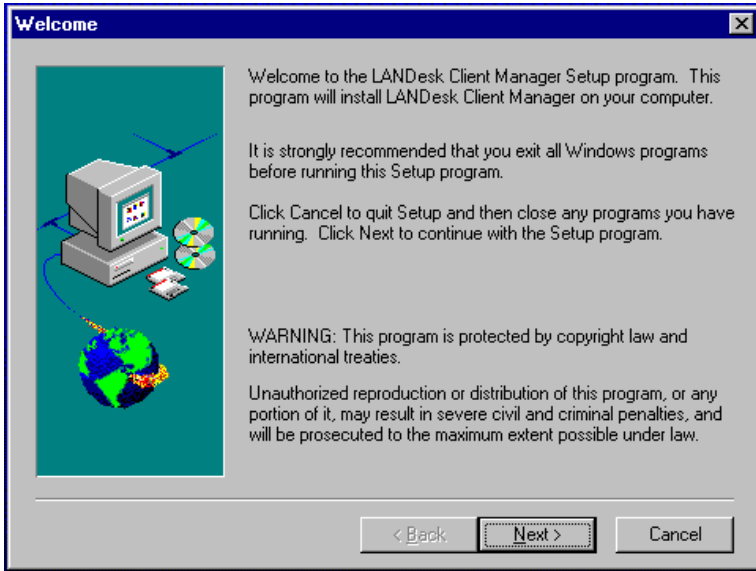
Enter the folder name for the LANdesk Client Manager and choose Next to continue.



Click Finish to complete Setup.

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7.2.2 Install LANdesk Administrator Manager

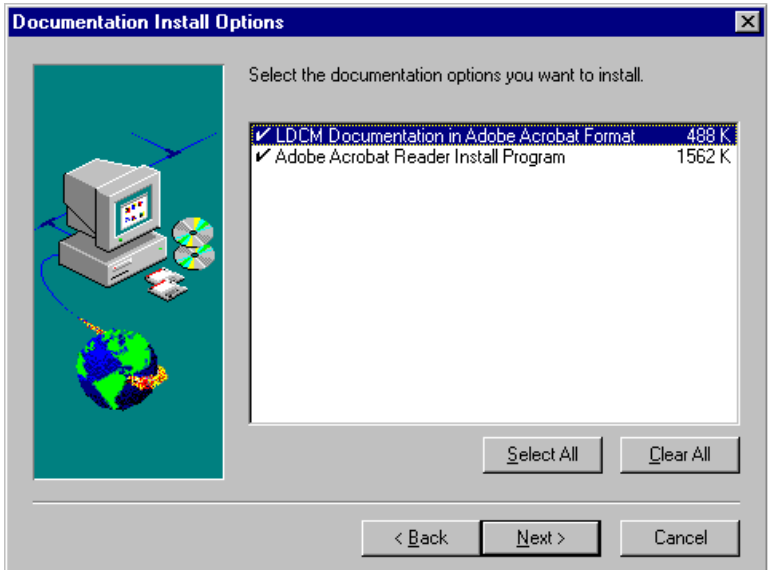


Click 鋏install LANdesk Administrator Manager on the initial screen and you will see the above welcome message. Click 幠extto continue.

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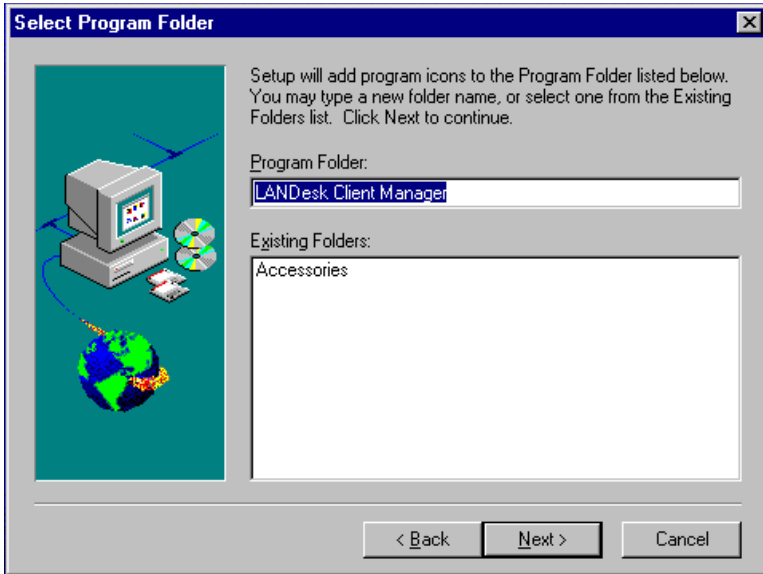


Click 幠extto install the LDCM to the path listed on the screen.

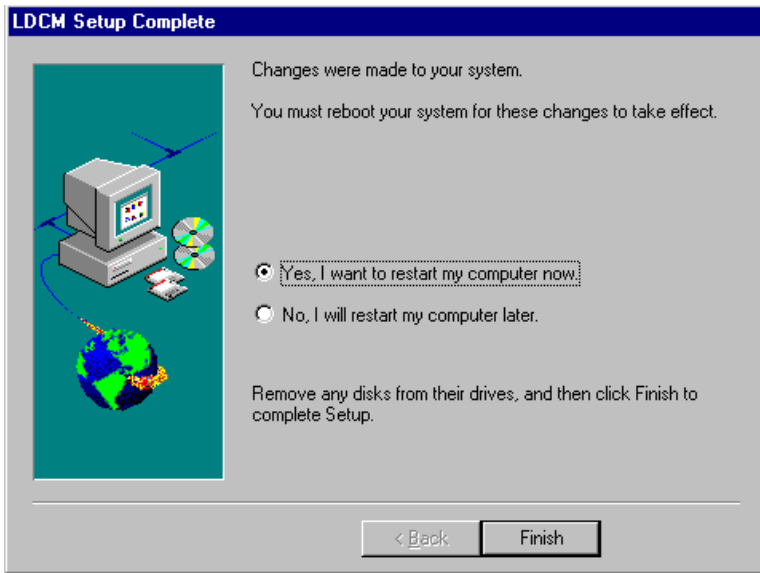


Select and install the LDCM documentation. To read the documentation, you must have Adobe Acrobat Reader installed in your system. Click 幠extto continue.

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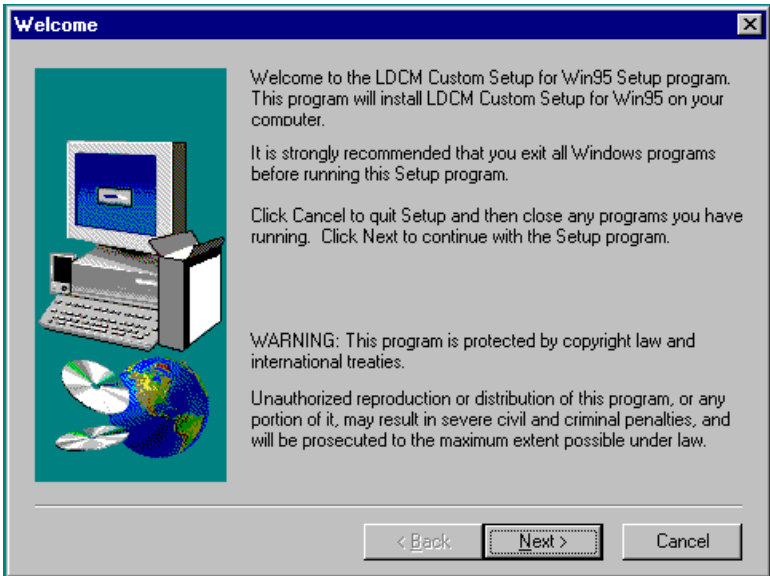
In the Select Program Folder box, enter the folder name where you want the program icons added. Click **Next** to continue.



Click **Finish** to complete Setup.

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7.2.3 Installing LDCM Custom Setup



Click 鍙戝畨 LDCM Custom Setup on the initial screen and you will see the above welcome message. Click 嬭ext to continue.

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User Information [X]



Type your name below. You must also type the name of the company you work for.


Name:

Company:

< Back Next > Cancel

In the User Information box, type your name and the name of your company and click 幠extto continue.

Choose Destination Location [X]



Setup will install LDCM Custom Setup for Win95 in the following directory.

To install to this directory, click Next.

To install to a different directory, click Browse and select another directory.

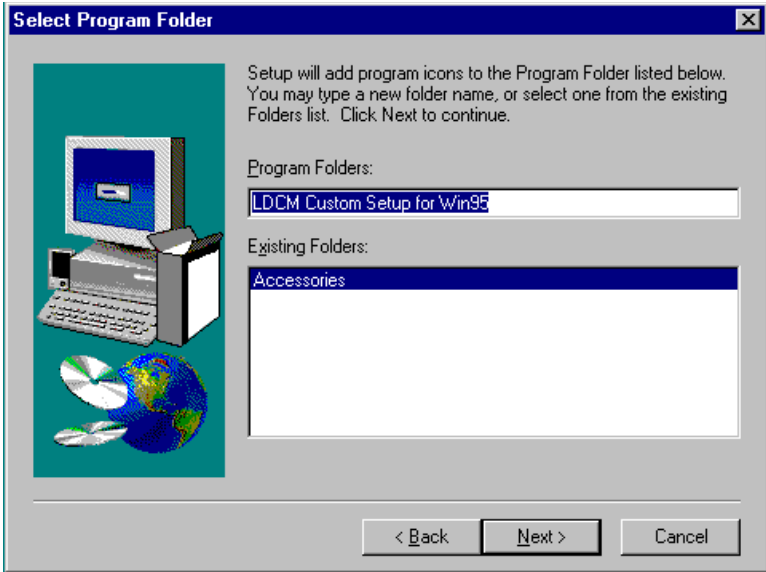
You can choose not to install LDCM Custom Setup for Win95 by clicking Cancel to exit Setup.

Destination Directory
C:\...\LDCM Custom Setup for Win95 Browse...

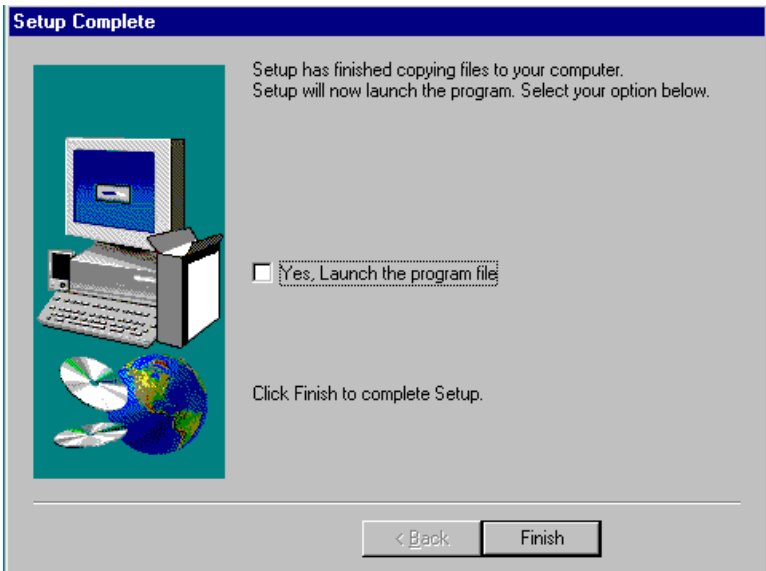
< Back Next > Cancel

To change the directory where Setup will install LDCM Custom Setup, click 幠rowse Otherwise, click 幠extto continue.

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In the Select Program Folder box, enter the folder name where you want the program icons added. Click **Next** to continue.



Click **Finish** to complete Setup. Before writing the configuration files, see the README file.

Appendix

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.

Press here.

