MainBoard

ArtX ALADDIN 7

User's Manual

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CHAPTER 1
INTRODUCTION

1.1 Product Description

The P561A is a high performance, high value North Bridge that integrated ALi's proven Socket 7 core logic with ArtX graphics processor technology.

128-bit Super-Socket7 North Bridge for AMD-K6-III with integrated 3D and Video Highest-performance game playing in a single integrated chip.

P561A supports the 66/100/1XX MHz Socket 7 Front Side Bus. It is System Memory Management (SMM) and Advanced Configuration and Power Interface Specification (ACPI) compliant.

1.2 Item Checklist

Your mainboard package should include the items listed below. Damaged or missing items should be reported to your vendor.

- ☑ The P561A mainboard
- ☑ Floppy disk ribbon cable
- ☑ ATA-66 Hard drive ribbon cable
- ☑ CD Disc containing software for updating the VGA, Audio Drivers, and IDE drivers

- ☑ RS232 9-pin COM2 series port bracket
- ☑ This User's Manual

1.3 Features & Specifications

|	
Processor	ZIF socket 7 support AMD K6-II/K6-III up to 650MHz, Cyrix® up to MII-500
Chipset	ArtX ALADDIN 7/M1535D
BIOS	Award® PCI BIOS, support ACPI, DMI, Green PC, Plug-and-Play, Boot from CD-ROM, SCSI, LS-120, ZIP devices, VGA BIOS, Symbios®SCSI BIOS, Anti-virus BIOS to prevent Boot-Virus
System Memory	3 × 168-pin DIMM Sockets support up to 768 MB SDRAM Memory Support 16/32/64/128/256MB Memory Module ECC Type DIMMs Module supported
On-board I/O Features	1×Floppy Port (Up to 2.88MB) 1×Parallel Port (EPP, ECP Port) 2×Serial Ports (16550 Fast UART Compatible) 2×USB Ports 1×IrDA TX/RX Header 1×Power state Header 1×MID/Game Port/15pin VGA Port 1x Audio Jacks: Line out, Line in, and Microphone in. 128-bit Graphics 3D Core (ArtX) Integrated with hardware Geometry
Advanced Features	1. Hardware Geometry for DX7 & OPENGL 2. 12.5 Million triangles/second sustained rate 3. 250 Million perspective-corrected, trilinear-filtered MIP-mapped textured pps. 4. Hardware Motion Compensation for MPEG 2 Playback. 5. H/W SB-PRO/PRO/Wavetable, D3D / FM synthesis / AC'97
PCI Bus Master IDE	2×UltraDMA-33/66 4IDE Port Support with ACPI support. UltraDMA-33/66: 33/66MB/Sec. Data Transfer Rate
Expansion Slots	1 AMR Slot, 5×32-bit PCI Slots
Switching VR	Switching Voltage Regulator to support 1.3V to 3.5V
ATX Power Connector	3V, 5V and 12V 20-pin ATX 20-pin Power Connector
Form Factor	ATX size (7" x 12" or 170mm x305mm)

Warning:

1. Do not connect UATA/33 and UATA/66 devices together with one UATA/66 spec cable.

2. If user has used some UATA/33 devices or CD-ROMs, we suggest that user should only use UATA/33 cable to connect those devices. As the result of using UATA/33 cable, user could avoid some uncertain troubles.

How to distinguish UATA/66 cable and UATA33 cable :
①UATA/33 cable is 40pin, UATA/66 is 80pin cable.
②The color of UATA/33 cable header is black color only while UATA/66 cable is black, blue and grey color.

CAUTION: Please do not use single voltage CPU on P561A motherboard. Single voltage CPU will cause damage to both CPU and the motherboard. Single voltage CPUs include: Intel P54C, AMD K5, Cyrix 6x86/M1...

1.4 Comprehensive Mainboard View
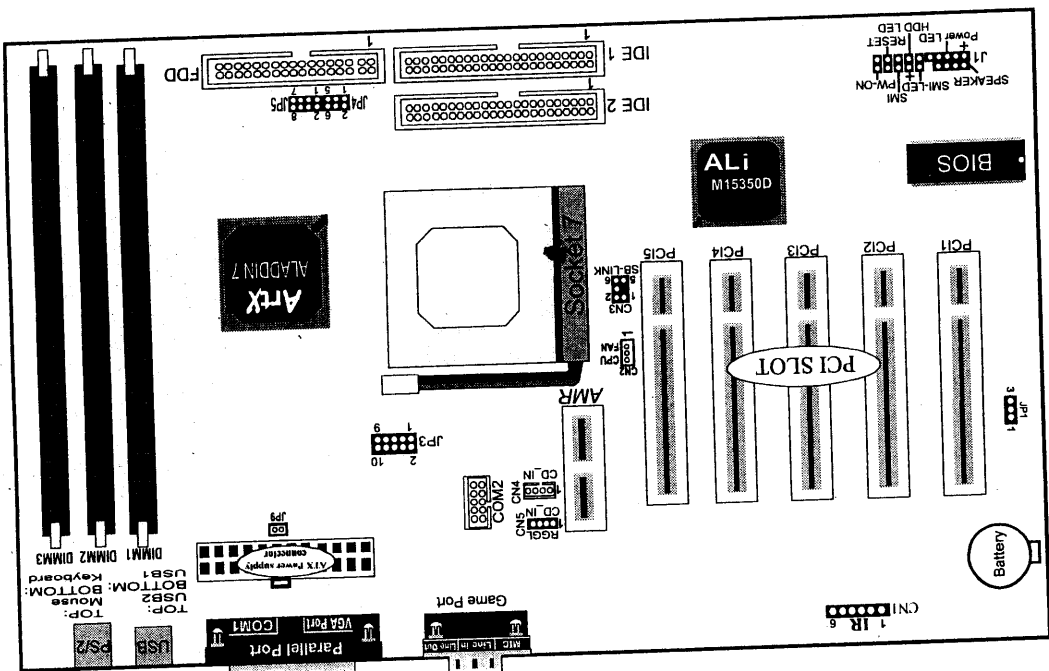
1. **PCI Slots:** 5x 32-bit PCI slots are provided.

2. **AC97 Codec Chip:** AC97 Audio Codec chip.

3. **AMR Slot:** The Audio Modem Riser is a new standard interface for cost-effective AMR AC97/MC97 audio/modem cards.

4. **MIDI/Game Port:** 15-pin female MIDI/Joystick connector.

5. **Audio Port:** Three 1/8" female jacks for Speaker Out, Line In and MIC.

6. **COM2 Connector:** Connects to supplied high-speed UART compatible serial port bracket. COM2 can be directed to the Infrared Module for wireless connection capability.

7. **VGA Port:** 15-pin VGA connector.

8. **Printer Port:** EPP and ECP compatible 25-pin D-Sub parallel port.

9. **COM1 Connector:** High-speed UART compatible serial port.

10. **PS/2 Mouse Connector:** Supports PS/2 style mice.

11. **PS/2 Keyboard Connector:** Supports PS/2 style keyboards.

12. **Socket 7:** Socket 7 CPU socket for AMD K6 /Cyrix M2 CPU.

13. **Power Connector:** 20-Pin ATX Power Connector.

14. **ALi ALADDIN7 Chipset:** Supports AMD K6-III CPUs, AC97.

15. **DIMM Sockets:** 3x 168-pin DIMM sockets are provided to support a maximum RAM memory capacity of 768 MB. DIMM types of 3.3 Volt true SDRAM is supported and automatically detected by the BIOS.

16. **Primary IDE Connector:** Connector for first IDE channel. The on-board PCI Bus Mastering IDE controller features support for DMA Mode 2 and PIO Modes 3 and 4 for faster data transfer rates. (2) Connectors are provided for support of up to (4) IDE devices on two channels. ATAPI Tape Drives and CD-ROMs are also supported.

17. **Secondary IDE Connector:** Connector for second IDE channel.

18. **Floppy Connector:** Built-in floppy controller supports (2) 5.25" or 3.5" (1.44MB or 2.88MB) floppy drives.

CHAPTER 2
HARDWARE INSTALLATION

Static Precautions

Static electricity can be a serious danger to the electronic components on this mainboard. Static electricity caused by electrostatic discharge, observe the following precautions:
To avoid damage caused by electrostatic discharge, observe the following precautions:

✓ Don't remove the mainboard from its anti-static packaging until you are ready to install it into a computer case. Also, handle add-in cards and modules by the edges or mounting bracket.

✓ Before you handle the mainboard in any way, touch a grounded, anti-static surface, such as an unpainted portion of the system chassis, for a few seconds to discharge any built-up static electricity.

2.1 Installing the CPU

This motherboard provides a ZIF (Zero Insertion Force) Socket 7. The CPU for your motherboard should have a fan attached to it to prevent overheating. If this is not the case, then purchase a fan before you turn on your system.

WARNING! *Be sure that there is sufficient air circulation across the processor's heatsink by regularly checking that your CPU fan is working. Without sufficient circulation, the processor could overheat and damage both the processor and the motherboard. You may install an auxiliary fan, if necessary.*

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree angle. Insert the CPU with the correct orientation as shown. The notched corner should point towards the end of the lever. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown. The picture below is for reference only; you should have a CPU fan that covers the face of the CPU. With the added weight of the CPU fan, no force is required to insert the CPU. Once completely inserted, push the socket's lever down while holding down the CPU.

NOTE: Do not forget to set the correct Bus Frequency and Multiple for your Socket 7 processor or else your system may start. Socket 7 processors provide internal thermal sensing so that a socket mounted thermal resistor is not needed.

CAUTION: Be careful not to scrape the motherboard when mounting a clamp-style processor fan or else damage may occur to the motherboard.

Lock
Lever
White Dot
Notch

Socket 7 CPU (Bottom)   Socket 7 CPU (Top)
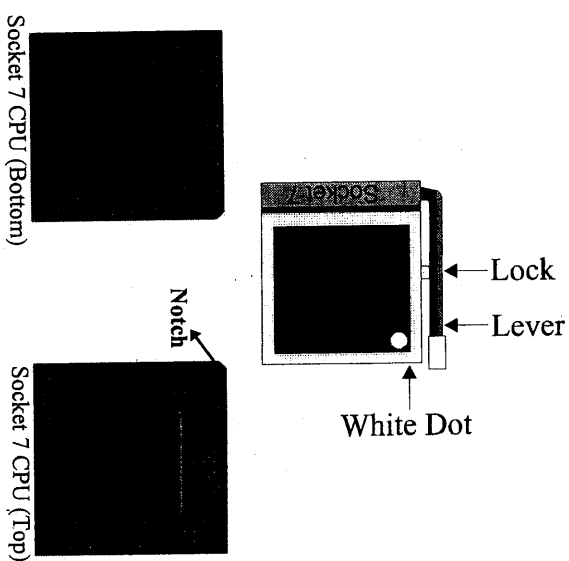
Cooling Fan (CN2)

CN2 is small 3-pin Header Connectors that provide 12-Volt power for CPU and chassis cooling fans. Plug in the fan cable to the connector. Pin-2 corresponds to the RED power lead as shown:
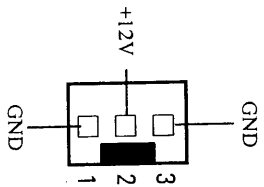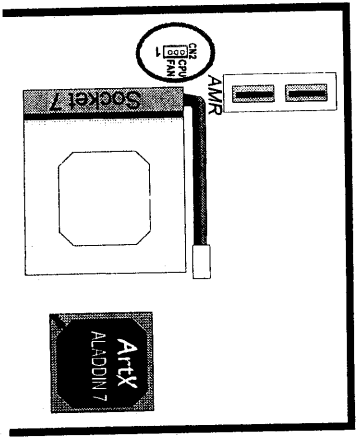

2.2　Setting the Jumpers

Jumpers are used on this mainboard to select various settings and features. A 2-pin jumper has two settings: Open and Short (or Closed). The jumper is closed by placing the Jumper Cap across the two pins, thereby connecting them. 3-pin jumpers can be set to pins 1-2 or 2-3 connected. Pin-1 is labeled on the circuit board.
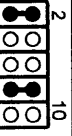
3-pin Jumper	2-pin Jumper
Pin 1-2	Open
Pin 2-3	Short
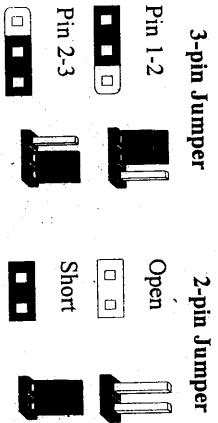
2.3　Setting the CPU Clock Selection Jumper
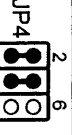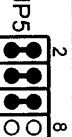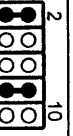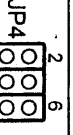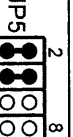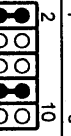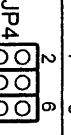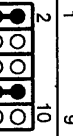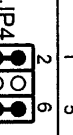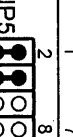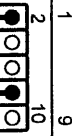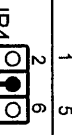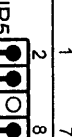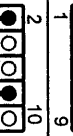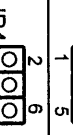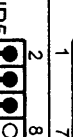
After installing the CPU, you must set the clock selection jumper to match the frequency of the CPU. Find the Jumper Blocks labeled JP5 and JP4 on the motherboard. Set the jumper according to the table below for your CPU frequency.

● CAUTION: Please do not use single voltage CPU on P561A motherboard. Single voltage CPU will cause damage to both CPU and the motherboard. Single voltage CPUs include: Intel P54C, AMD K5, Cyrix 6x86/M1...Please check the CPU details.
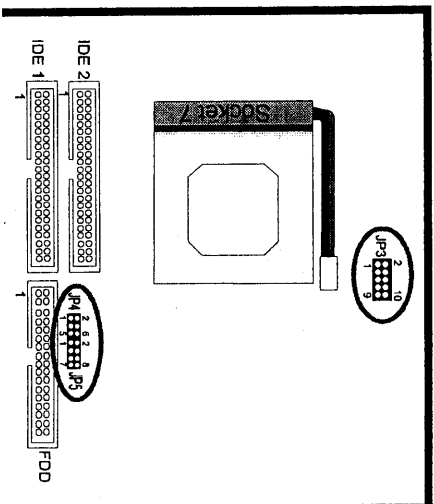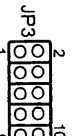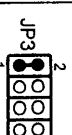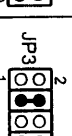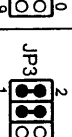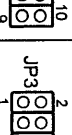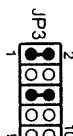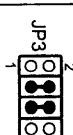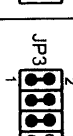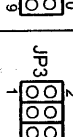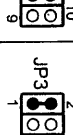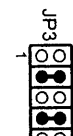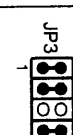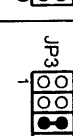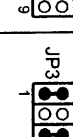
CPU Type	Jumper Setting
AMD-K6 /200 CPU (66*3 2.9V)	JP3, JP4, JP5
AMD-K6 /233 CPU (66*3.5 3.2V)	JP3, JP4, JP5
AMD-K6 /266 CPU (66*4 2.2V)	JP3, JP4, JP5
AMD-K6 /300 CPU (66*4.5 2.2V)	JP3, JP4, JP5
AMD-K6 2/266 CPU (66*4 2.2V)	JP3, JP4, JP5
AMD-K6 2/300 CPU (66*4.5 2.2V)	JP3, JP4, JP5
AMD-K6 2/300 CPU (100*3 2.2V)	JP3, JP4, JP5
AMD-K6 2/333 CPU (66*5 2.2V)	JP3, JP4, JP5
AMD-K6 2/350 CPU (100*3.5 2.2V)	JP3, JP4, JP5
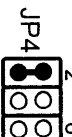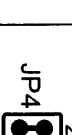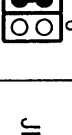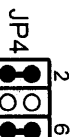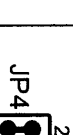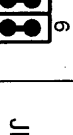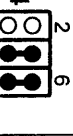
CPU Type	Jumper Setting
AMD-K6 2/366 CPU (66*5.5 2.2V)	JP3, JP4, JP5
AMD-K6 2/400 CPU (100*4 2.2V)	JP3, JP4, JP5
AMD-K6 2/450 CPU (100*4.5 2.2V)	JP3, JP4, JP5
AMD-K6 2/450 CPU (100*4.5 2.4V)	JP3, JP4, JP5
AMD-K6 2/500 CPU (100*5 2.2V)	JP3, JP4, JP5
AMD-K6 2/550 CPU (100*5.5 2.3V)	JP3, JP4, JP5
AMD-K6 III/400 CPU (100*4 2.4V)	JP3, JP4, JP5
AMD-K6 III/450 CPU (100*4.5 2.4V)	JP3, JP4, JP5
Cyrix/IBM 6x86MX-PR200 (66*2.5 2.9V)	JP3, JP4, JP5

CPU Type	Jumper Setting		
Cyrix/IBM 6x86MX-PR233 (75*2.5 2.9V)	JP3	JP4	JP5
Cyrix/IBM 6x86MX-PR266 (66*3.5 2.9V)	JP3	JP4	JP5
Cyrix MII-PR300 (66*3.5 2.9V)	JP3	JP4	JP5
Cyrix MII-PR333 (66*4 2.9V)	JP3	JP4	JP5
Cyrix MII-PR333 (83*3 2.9V)	JP3	JP4	JP5
Cyrix MII-PR333 (75*3.5 2.9V)	JP3	JP4	JP5

Setting CPU Vcore Voltage (Dual Voltage CPU use only)

2.0V	2.1V	2.2V	2.3V	2.4V
JP3	JP3	JP3	JP3	JP3

2.5V	2.6V	2.7V	2.8V	2.9V
JP3	JP3	JP3	JP3	JP3

3.0V	3.1V	3.2V	3.3V	
JP3	JP3	JP3	JP3	

Setting CPU Frequency Clock

2.0X	2.5X	3.0X	3.5X
JP4	JP4	JP4	JP4

4.0X	4.5X	5.0X	5.5X
JP4	JP4	JP4	JP4

Setting CPU Bus Frequency

66MHz	75MHz	83MHz	100MHz
JP5	JP5	JP5	JP5

110MHz	124MHz	133MHz
JP5	JP5	JP5

Clear CMOS (JP1)

If you have set the password, either to protect the BIOS configuration or to restrict access to the computer, the password is stored in CMOS RAM. If you forget the password, the CMOS can be cleared by setting this jumper to *Clear CMOS*.

In case there is a CMOS error or improper CPU setting through the mainboard's BIOS that causes boot failure, the CMOS must cleared by setting this jumper to *Clear CMOS* to allow the system to boot.

* Clearing the CMOS will clear all user-defined BIOS setup options.

JP1

Normal   Clear CMOS
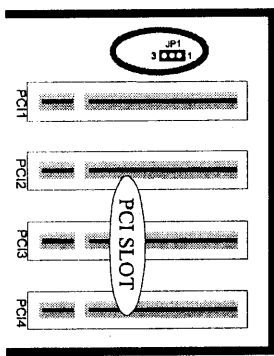
2.4 Connections

System Function Connector (J1)

J1 [connector diagram]

Soft Power Switch (PW-ON)

Connects to the Power Switch featured on ATX case designs. This switch must be hooked up before the system can be powered on, unlike traditional "Baby-AT" designs where the power switch is located on the Power Supply itself.

Note: Under the following two conditions, you have to press and hold the switch for longer than 4 seconds to power off your system, regardless of the BIOS setting.

• Shortly after the system is powered on, when the BIOS message is not yet appear.
• When CPU hangs.

J1 [connector diagram]

Reset Switch Connector

Connects to the Reset Switch lead from the system's case. The reset switch is used to "cold-boot" the system without actually turning off the power, reducing wear and tear on the power supply.

J1 [connector diagram]

Green Switch Connector (SMI)

If your system's case has a suspend switch, hook the lead from the switch to G-SW. A suspend switch is used to save electricity by putting the system into a suspend mode when the computer is not being used. For this switch to be functional, "*Suspend Mode*" must first be enabled in the **Power Management Setup** in the BIOS Setup utility.

J1 [connector diagram]

HDD LED Connector

Hook the IDE LED lead to this connector, with the RED lead corresponding to Pin-1.

J1 [connector diagram]
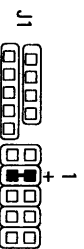
Power LED Connector

Connect to the Power LED case-mounted keylock switch from the system's case.

J1 [connector diagram]

Speaker Output Connector

Attach the system speaker to the connect J1.

J1 [connector diagram]

Power Supply Connector (J5)

This mainboard features an ATX-style Power Supply Connector. This connector is keyed to prevent connection in the wrong direction. Line up the locking mechanism on the connector from the Power Supply with the tab on the mainboard connector. Press down until the two connectors are locked.

[Power supply connector pinout diagram]
+12V, +5VSB, PowerGood, +5V, GND, -5V
+5V, GND, PW_ON, GND, -12V, +3.3V
+3.3V
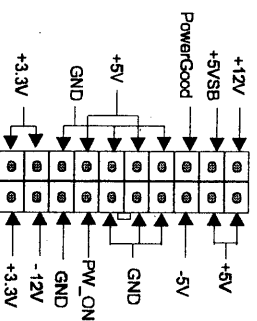
Important: Make sure that the ATX power supply can take at least 10Ma load on the 5 volt standby lead (5VSB). You may experience difficulty in powering on your system without this.
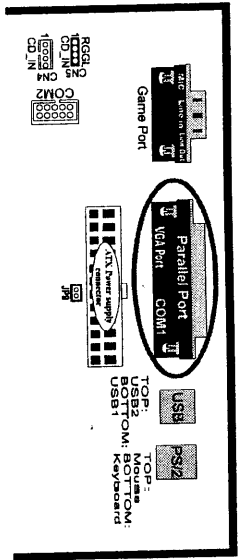
Serial and Parallel Ports

A 25-pin D-Sub header is provided on the back panel for a multi-mode bi-directional parallel port.

A 9-pin D-Sub headers is also provided on the back panel for Serial ports.

For the second series port, plug the 10-pin cable of the series port bracket to the COM2 connector on the mainboard.

VGA Connector

This mainboard has built-in VGA feature. A 15-pin connector is provided on the back panel for connecting to the VGA connector from monitor.

Parallel Port

COM1   VGA

COM2
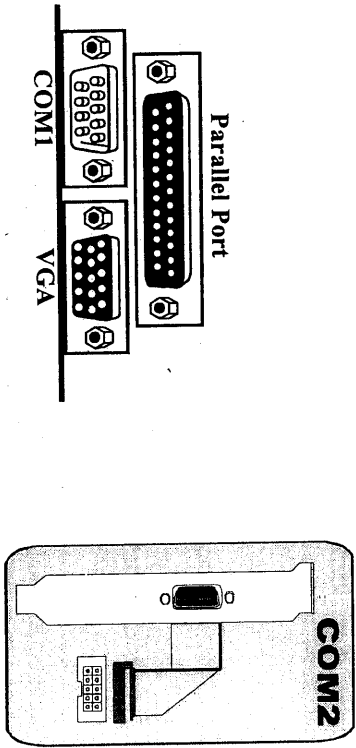
IrDA-Compliant Infrared Module Connector (CN1)

The IrDA connector bracket hooks directly to this connector on the mainboard. This connector provides support for the optional wireless transmitting and receiving infrared module. You must first configure through the BIOS setup where UART2 is directed, COM2 or IrDA.

VCC
FIR   GND
IRRX   IRTX
OVCROFF

CN1
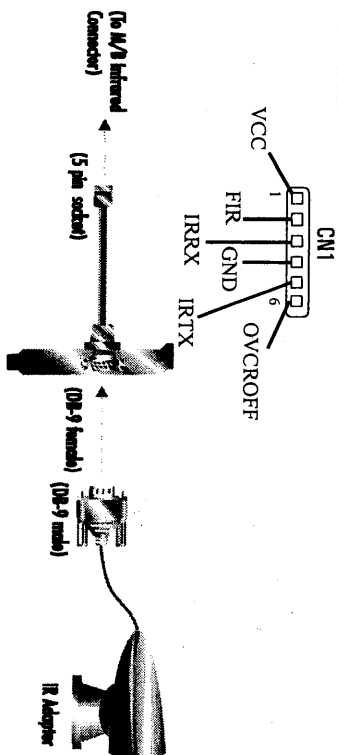
USB Connector

This 8-pin connector permits connection of two USB peripheral devices directly to the system without an external hub.

PS/2 Keyboard and Mouse Connectors

These two connectors are located on the back panel of the mainboard.

USB

PS/2 Mouse

PS/2 Keyboard
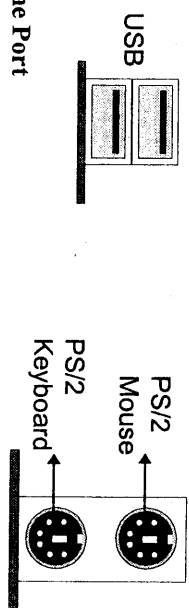
MIDI/Game Port

You may plug a joystick or game pad to this 15-pin female connector for game playing, or connect a MIDI device for playing or editing audio.

Audio Port

You can connect powered speakers or headphones to Line Out jack. Cassette players or other external audio sources can be connected to Line In jack. Plug in your microphones to MIC jack.

Audio Connectors

Three types of CD Audio connectors are available for connecting the CD-ROM drive using CD audio cables. Make sure red lead is oriented toward pin 1.

SB-Link

Connect SB-Link cable on the Creative Sound Blaster Card to this connector. This PC to PCI bridge provides backward compatibility between PCI and ISA audio chips for earlier DOS games.

2.5 Installing an AMR Card

One AMR (Audio/Modem Riser) standard interface connector is provided for Audio Codec 97 (AC97) and/or Modem Codec 97 (MC97) cards.

Floppy drives

The on-board floppy controller supports (2) floppy disk drives with the floppy ribbon cable provided. Make sure the RED stripe on the ribbon cable is oriented towards Pin-1. Notice the "twist" between the sets of connectors on the floppy cable. The floppy drive "A" position is at the END of the cable, whereas floppy drive "B" is hooked to one of the connectors on the other side of the twist. The cable provides both "Edge" and "Pin" connectors for both the A and B positions to match the connector on your floppy drives.

IDE Hard Drives and CD-ROMs

The on-board Enhanced IDE controller can support up to (4) IDE hard drives or other ATAPI devices, such as CD-ROMs. This controller, as with all Enhanced IDE controllers, consists of both **Primary** and **Secondary** ports. Each port has an associated connector and cable which can support up to (2) ATAPI devices each.

All IDE devices have jumpers which allow the user to configure the device as either "Master" or "Slave". A Master device is one that is ALONE on the IDE cable, whereas a Slave device is installed as a SECOND device on the same cable. Keep in mind that the Master device will appear *before* the Slave device in the CMOS Setup, as well as the Operating System software. *Refer to the device documentation for jumper settings.*

The Secondary IDE port can be used for up to (2) additional ATAPI devices. Normally it's recommended that you connect your first hard drive to the Primary port, and the first CD-ROM to the Secondary.

Make sure to align the RED stripe on the ribbon cable with Pin-1 on the mainboard IDE connector. On most hard drives and CD-ROMs, the RED stripe should be oriented towards the power connector of the device.
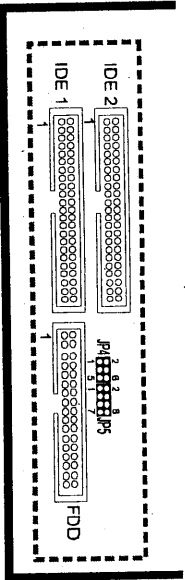
2.5   Installing the Memory (DIMM)

The mainboard is equipped with three 168-pin DIMM sockets. It supports 16MB, 32MB, 64MB, 128MB and 256MB. The above DIMMs are combined differently so as to form different total memory somewhere between 16MB and 768MB. The mainboard supports DIMMs populated with 8, 16, and 32 bit wide SDRAM devices. Registered DIMMs or DIMMs populated with 4 bit wide SDRAM devices are not supported. PC-100 SDRAM DIMM should be used for either 100MHz or 66MHz front side bus processor.

A DIMM simply snaps into a socket on the system board. Pin 1 of the DIMM must correspond with pin 1 of the socket.

➤ Pull the 'Tabs' which are at the ends of the socket to the side.

➤ Position the DIMM above the socket with the 'Keys' in the module aligned with the 'Keys' on the socket.

➤ Set the module vertically into the socket. Make sure it is completely set. The tabs will hold the DIMM in place.
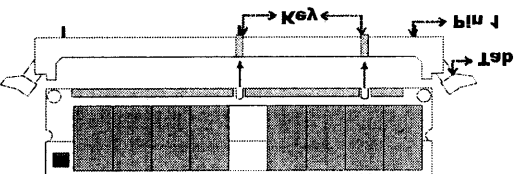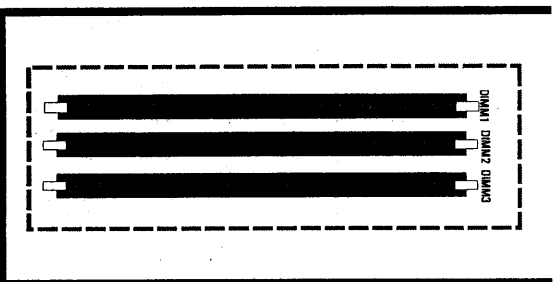
CHAPTER 3
SYSTEM BIOS SETUP

This chapter will explain how to set up the system configuration (CMOS Setup) under AWARD BIOS. The SETUP utility program is stored in the system ROM rather than on disk.

3.1 Entering Setup

There are two ways to enter Setup. One is to restart the computer and press <Del> immediately; the other is to press <Ctrl> + <Alt> + <Esc> or <Del> when the following message appears at the bottom of the screen during POST (Power On Self Test):

TO ENTER SETUP BEFORE BOOT PRESS <CTRL-ALT-ESC> OR <DEL> KEY

If the message disappears before you respond and you still try to enter Setup, restart the computer to try again or press the RESET button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Del> keys. If you don't press the keys in time and the system does not boot, an error message will be displayed:

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

At this time, you should take the appropriate action.

3.2 Control Keys

Keystroke	Function
Up	Move to previous item
Down	Move to next item
Left	Move to the item in the left hand
Right	Move to the item in the right hand
Esc	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp / " + "	Increase the numeric value or make changes
PgDn / " - "	Decrease the numeric value or make changes
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3	Reserved
F4	Reserved
F8	Reserved
F9	Reserved
F10	Save all the CMOS changes, only for Main Menu

3.3 Getting Help

* **Main Menu**

The on-line description of the highlighted setup item is displayed at the bottom of the screen.

* **Status Page Setup Menu/Option Page Setup Menu**

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the help window, press <F1> or <Esc>.

3.4 The Main Menu

Once you run AWARD BIOS CMOS Setup Utility, the Main Menu will appear. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter a sub-menu.

CMOS Setup Utility - Copyright (C) 1984 - 2000 Award Software	
▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP / PCI Configurations	Exit Without Saving
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

* **Standard CMOS Features**

This category includes all the items in a standard BIOS.

* **Advanced BIOS Features**

This category includes all the items of Award special enhanced features.

* **Advanced Chipset Features**

This category includes all the items of chipset special features.

- **Integrated Peripherals**

This setup page includes all the items of peripherals features.

- **Power Management Setup**

This category determines how much power consumption for system is activated after selecting the related items. Default value is Disable.

- **PnP / PCI Configurations**

This category specifies the value (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device.

- **Set User Password**

Change, set, or disable password. It allows you to limit access to the System and Setup, or just to Setup.

- **Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

- **Exit Without Saving**

Abandon all CMOS value changes and exit setup.

3.5 Standard CMOS Features

This first menu is where the most basic hardware options are set. Information regarding the system clock, IDE hard disks and floppy drives is stored and configured in this section. To enter the Standard CMOS Features setup screen, press the [ENTER] key with this menu highlighted.

Upon entering the Standard CMOS Setup screen, you will see a screen like that below:

Date (mm:dd:yy)	Sat, Apr 15 2000	
Time (hh:mm:ss)	11 : 16 : 54	Item Help
IDE Primary Master	Press Enter 3216 MB	Menu Level ▶
IDE Primary Slave	Press Enter None	
IDE Secondary Master	Press Enter None	
IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA / VGA	
Halt On	All But Keyboard	
Base Memory	640K	
Extended Memory	48128K	
Total Memory	49512K	

↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

- **Date and Time**

Use the arrow keys to move to and highlight the "Date" option. Select the Month by using the PgDn and PgUp keys. This is how most settings will be configured. Then, move to the day, year and time via the arrow keys to finish setting the system date and time.

Keep in mind that the system time is set in 24-hour time. With this method, 1PM is represented as 13:00, 2PM as 14:00 and so on, with 00:00 corresponding to Midnight.

- **IDE Primary Master, IDE Primary Slave, IDE Secondary Master, IDE Secondary Slave**

These four options relate to the (4) IDE hard drives, CD-ROMs or other ATAPI devices that can be controlled via the on-board IDE controller (review IDE Hard Drives and CD-ROMs in the Installation Guide). The "IDE Primary Master" setting specifies the first device on the

primary IDE channel, "IDE Primary Slave" - the second. IDE Secondary Master and IDE Secondary Slave specify the devices on the secondary channel.

Pressing <Enter> at each of the four selections brings up a submenu such as one shown below:

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	
Access Mode	Auto	Menu Level ▶ ▶
Capacity	3216 MB	
Cylinder	6232	
Head	16	
Precomp	65535	
Landing Zone	6231	
Sector	63	

↑↓→←:Move　Enter:Select　+/-/PU/PD:Value　F10:Save　ESC:Exit　F1:General Help
F5:Previous Values　　F6:Fail-Safe Defaults　　F7:Optimized Defaults

- **IDE HDD Auto-Detection**

Automatically detects and configures hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk's parameters.

- **IDE Primary/Secondary Master/Slave**

This is where you will specify the type of device and how it is represented in the BIOS Setup. If the device is a hard disk or CD-ROM, generally the *Auto* option is the best choice for fast and easy setup of the hard disk parameters. Let's take a look at the difference between the Auto and Manual options:

♦ **Auto**

This option instructs the BIOS to automatically configure the hard disk by reading the parameters (cylinders, sectors, etc.) directly from the hard disk's firmware. Use this option if you are configuring a new hard drive, or one that has already been formatted using the *Auto* option. Keep in mind that a hard drive is configured using a certain set of parameters, those same parameters must be used for the life of the drive, unless the

---

drive is re-FDISKed using a different parameter set. (This procedure deletes the old partition(s) on the drive and creates a new one, using the new parameters).

♦ **Manual**

This option allows you to manually enter in the parameters (cylinder, head, precomp, landing zone and sector) of the hard drive. Generally, this option would be used only if the hard drive has already been formatted with a certain set of parameters, and assured consistency between the old and new parameters is desired.

- **Access Mode**

One of Enhanced IDE's most important features is *LBA* (Logical Block Addressing) Mode. This feature allows the use of larger hard drives by providing a way to bypass the cylinder limitations imposed by many Operating Systems. LBA Mode is used to extend a hard drive's useable capacity by "remapping" the cylinders in a way that is acceptable to these operating systems. For instance, a hard drive with the parameters of 2100 Cylinders, 16 Heads and 63 Sectors would be represented by LBA Mode as 525 Cylinders, 64 Heads and 63 Sectors. (Notice that the Cylinders have been divided, and the Heads have been multiplied, by a factor of 4.)

On hard drives smaller in capacity than 528MB, LBA support is not needed. The option on these devices is ignored, even if enabled. For hard drives greater than 528MB, LBA mode should be enabled. The following rules apply:

- Operating Systems that do not use the FAT file system do not need LBA Mode, and can use the Normal or Large Modes. Examples would be NetWare and Unix.

♦ When configuring a new hard drive greater than 528MB in capacity, always make sure LBA mode is enabled.

♦ If you are using a hard drive that is over 528MB in capacity, but was already formatted without using LBA mode, LBA support will be ignored even if it is enabled. This assures correct access to the drive's data.

♦ *SCSI Hard Drives* are NOT entered into the Mainboard BIOS Setup in any way. The hard drive settings in the Standard CMOS Setup are only for drives connected to the IDE Controller. So, if only SCSI drives were installed, all these settings would be set to *None*. SCSI Devices are configured via the SCSI controller's BIOS.

- **Capacity**

Displays the capacity of the device.

• **Floppy Drives A: and B:**

Select the Type for the A: and/or B: floppy drives. Remember, floppy drive A: is the first drive, hooked to the END of the floppy ribbon cable. Floppy drive B: is hooked up after the twist. Available settings are listed below:

None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

• **Video**

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select their type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

• **Halt On**

Determines whether or not the system will prompt you if an error is detected during POST.

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

• **Memory**

This category is display-only. All memory detected by the POST (Power On Self Test) of the BIOS is shown as the following types:

Base Memory

The POST of the BIOS will determine is the amount of base (or conventional) memory installed in the system.

This value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for system will 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

3.6 Advanced BIOS Features

This menu provides access to more advanced BIOS configuration settings that deal with overall performance of the system and peripheral setup. This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation and security.

		Item Help
Virus Warning	Disabled	
CPU Internal Cache	Enabled	
External Cache	Enabled	
Quick Power On Self Test	Disabled	
First Boot Device	Floppy	Menu Level ▶
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
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	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN 95	No	

↑↓→←:Move   Enter:Select   +/−/PU/PD:Value   F10:Save   ESC:Exit   F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

- **Virus Warning**

Enables/Disables the built-in anti-virus for protection against **boot virus** infection. Unlike traditional BIOS protection which generally consists of simply write protecting the hard disk partition table, this Anti-Virus protection provides more complete virus protection by taking control early in the boot process, detecting boot viruses before they have a chance to load.

- **CPU Internal Cache**

Enables or Disables the Level-1 Internal Cache memory. Generally, this would only be *Disabled* for troubleshooting purposes.

- **External Cache**

Enables or Disables the Level-2 External Cache memory. Generally, this would only be *Disabled* for troubleshooting purposes.

- **Quick Power On Self Test**

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

- **First/Second/Third/Other Boot Device**

When your system is powered on, the BIOS performs a variety of operations, then attempts to boot an Operating System from either a hard drive (IDE or SCSI), floppy drive, CD-ROM, LS-120/ZIP or LAN. This setting determines the sequence that the BIOS will follow when searching devices for a bootable disk.

- **Swap Floppy Drive**

The hardware connections determine which floppy is configured as drive A: and drive B:. "Swapping" the floppy drives can be useful if your system has two floppy drives, and you want the ability to boot from both. For example: Since a PC cannot boot from the B: Floppy, you would need to "Swap" floppy drives A: and B: in order to set the second floppy drive to drive A:, thereby making it bootable.

- **Boot Up Floppy Seek**

When enabled, BIOS will attempt to move the head of the floppy disk drive forth and back once during POST to see if the drive is working properly.

- **Boot Up NumLock Status**

When *On*, the NumLock key will be automatically enabled when the system boots.

- **Gate A20 Option**

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard (Normal). Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset (Fast; default) to provide support for gate A20.

- **Typematic Rate Setting**

Determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin to report that the key has been depressed repeatedly. This feature is used to accelerate cursor movements with the arrow keys.

- **Typematic Rate (Chars/Sec)**

It controls the keyboard repeat rate (how fast a key repeats if you hold it down).

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

- **Typematic Delay (Msec)**

It controls the keyboard repeat delay (how long it takes for a key to start repeating after you press it.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

- **Security Option**

This category allows you to limit access to the System and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING from Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>. It will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

- **OS Select For DRAM > 64MB**

This should be set to OS2 if you are running IBM OS/2 with more than 64MB of RAM in the system. Otherwise, the setting should be Non-OS2.

- **Report No FDD For WIN95**

When no floppy disk drive is installed, set this option to No to release IRQ6 for passing Win95 logo. This option is irrelevant under normal operation.

3.7   Advanced Chipset Features

This screen controls the settings for the mainboard's chipset.

		Item Help
Auto Configuration	Enabled	
AT Bus Clock	7.16MHz	Menu Level ►
SDRAM RAS To CAS Delay	3	
SDRAM CAS Latency	3	
SDRAM Precharge Time	3	
SDRAM Write Recovery Time	2	
SDRAM Min Page Active Time	6	
Graphics Memory Size	16 MB	
Graphics Aperture Size	128MB	
Onboard VGA	Enabled	
Linear Size	128MB	
Memory Hole At 15-16M	Disabled	
Passive Release	Enabled	
Delay Transaction	Disabled	
IO Recovery Period	1 us	
ALI OnChip Modem	Disabled	
ALI OnChip Audio	Enabled	
Memory Parity Check	Enabled	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

- **SDRAM CAS Latency Time**

This item allows you to select the CAS# latency for all SDRAM cycles. Options are 3 or 2 Clocks.

- **SDRAM Cycle Time Tras/Trc**

Selects the Row Active Time and Row Cycle Time for an access cycle. Options are 6/8 and 5/7.

- **SDRAM RAS-to-CAS Delay**

This option allows you to determine the number of clocks allocated between the assertion of RAS to CAS. Do not change the value in this field unless you change to different DRAM or CPU with different specifications.

- **SDRAM RAS Precharge Time**

Defines the length of time that Row Address Strobe is allowed to precharge. If insufficient time is allowed, refresh may be incomplete and data will be lost.

• **System BIOS Cacheable**

When Enabled, the contents of the F0000h system memory segment can be cached to the Level-2 cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution and PCI compliance.

• **Video BIOS Cacheable**

When Enabled, C0000h to C7FFH become cacheable memory.

• **Memory Hole At 15M-16M**

In order to improve compatibility, certain space in memory can be reserved for old style ISA cards that map memory between 15M-16M. Do not enable this feature unless you use the old style ISA card, otherwise the memory size may be reduced to 15 MB for some O.S.

• **Delayed Transaction**

When enabled, the delay transaction mechanism will be in effect when PIIX4 is the target of a PCI transaction.

• **On-Chip Video Window Size**

Determines the maximum image area on screen for the on-chip VGA.

* **Onboard Display Cache Setting** *

The following options are only for mainboards with onboard display cache.

◆ **CAS# Latency**

This item allows you to select the CAS# latency for all onboard display cache clock cycles. Options are 3 or 2 Clocks.

◆ **Paging Mode Control**

Selects the paging mode. *Open* or *Close*.

◆ **RAS-to-CAS Override**

Selects the display cache clock period control. *By CAS# LT* or *Override(2)*.

◆ **RAS# Timing**

This item controls RAS# active to Protegra, and refresh to RAS# active delay (in local memory clocks).

◆ **RAS# Precharge Timing**

This item controls RAS# precharge (in local memory clocks).

3.8 Integrated Peripherals

This menu is used to configure the integrated IDE subsystem and other peripherals.

		Item Help
On-Chip Primary IDE	Enabled	Menu Level ▶
Master	PIO	Auto
Slave	PIO	Auto
Master	Ultra DMA	Auto
Slave	Ultra DMA	Auto
On-Chip Secondary IDE	Enabled	
Master	PIO	Auto
Slave	PIO	Auto
Master	Ultra DMA	Auto
Slave	Ultra DMA	Auto
On-Chip USB Controller	Enabled	
USB Keyboard Support	Disabled	
Init Display First	PCI Slot	
IDE HDD Block Mode	Enabled	
KBC input clock	12 MHz	
POWER ON Function	BUTTON ONLY	
× KB Power ON Password	Enter	
× Hot Key Power ON	Ctrl - F1	
Onboard FDC Controller	Auto	

↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

		Item Help
Onboard Serial Port 1	3F8/IRQ4	Menu Level ▶
Onboard Serial Port 2	2F8/IRQ3	
Onboard Serial Port 3	Disabled	
× UART Mode Select	RDA	
× RxD, TxD Active	Hi,Lo	
× IR Duplex Mode	Half	
× Fast IR Mode Use DMA	1	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
× ECP Mode Use DMA	3	

• **On-Chip Primary PCI IDE**

Enables or Disables the primary controller. Situations where this controller would be disabled are: *a) You are not using any IDE Drives* or *b) You are using an add-on IDE controller in a PCI Slot.*

• **On-Chip Secondary PCI IDE**

Enables or Disables the secondary controller. Situations where this controller would be disabled are: *a) You are not using any IDE Drives* or *b) You are using IDE Drives ONLY on the primary controller* or *c) You are using an add-on IDE controller in a PCI Slot.*

- **IDE PIO Mode**

IDE Programmed I/O Mode - This setting relates to the speed at which the hard drive is able to transfer data, up to 16.6MB/second for Mode 4 drives. Available settings are *Auto, 0, 1, 2, 3,* or *4*. As with the **Type** setting, *Auto* is the preferred choice, in that the supported PIO Mode is read directly from the hard drive. Be sure not to use a PIO Mode higher than what the drive actually supports. This could result in loss of data.

PIO Mode	Timing
0	600 ns
1	383 ns
2	240 ns
3	180 ns
4	120 ns

- **IDE UDMA (Ultra DMA) Mode**

The chipset used for this mainboard improves the IDE performance by implementing UltraDMA/66 Bus Mastering IDE which can handle data transfer up to 66 Mbyte/sec. This UDMA technology is downward compatible with existing ATA-2 IDE. So there is no upgrade required for current hard drives and cabling.

- **USB Controller**

If you are using USB peripherals, set this option to *Enabled*.

- **USB Keyboard Support**

This item allows you to enable or disable the USB keyboard driver within the onboard BIOS. The keyboard driver simulates legacy keyboard command and let you use USB keyboard during POST or after boot if you don't have USB driver in the operating system.

- **Init Display First**

This option allows you to select the onboard VGA or other PCI display cards your system will use initially.

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- **AC97 Audio**

Enabling this option allows the system to use the on-chip AC97 audio support. If you want to use the Sound Blaster compatible mode or an add-on audio card instead, set this option to *Disabled* to avoid possible conflict.

- **AC97 Modem**

Enabling this option allows the system to use the on-chip AC97 modem support. If you want to use the legacy modem compatible mode or an add-on modem card instead, set this option to *Disabled* to avoid possible conflict.

- **IDE HDD Block Mode**

This allows your hard disk controller to use fast block mode to transfer data to and from your hard disk drive (HDD).

- **POWER ON Function**

This option allows you select one of the various methods to power on your system:

Option	How to Power on your System
Any Key	By pressing any key on the keyboard (JP1 must be set to *Enabled*)
Button Only	By your conventional power button
Keyboard 98	By pressing the *Wakeup* button on your PC98 keyboard
Password	By typing the password on your keyboard (See below)
Hot Key	By pressing the hot key combination on your keyboard (See below)
Mouse Left	By left-clicking the mouse (for PS/2 mouse only)
Mouse Right	By right-clicking the mouse (for PS/2 mouse only)

- **Onboard FDC Controller**

Set to *Enabled* if you have a floppy disk drive installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

- **Onboard Serial Port 1**

With this option, the on-board Serial Port 1 can be Disabled, or set to Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 or 2E8/IRQ3.

- **Onboard Serial Port 2**

With this option, the on-board Serial Port 2 can be Disabled, or set to Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4 or 2E8/IRQ3.

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- **UART Mode Select**

By default, this field is set to *Normal*, which directs the second serial port UART to support the COM2 serial port. Choosing *ASKIR* (SHARP IR) or *IrDA* (HPSIR) will activate the on-board infrared feature and redirect the second serial port UART to support the infrared module connector on the mainboard.

- **RxD, TxD Active**

Determines the Infrared Receiving and Transmission active mode.

- **IR Transmission Delay**

Available when the above *UART Mode Select* option is set to *IrDA*. Enabling this option to allow transmission delay when SIR is changed from receiving mode to transmission mode, ensuring data integrality.

- **Onboard Parallel Port**

With this option, the on-board Parallel Port can be Disabled, or set to 378/IRQ7, 3BC/IRQ7 or 278/IRQ5.

- **Parallel Port Mode**

Sets the operating mode of the parallel port. Options are: *SPP, EPP, ECP* and *ECP+EPP*.
SPP: Standard Parallel Port, EPP: Enhanced Parallel Port, ECP: Extended Capability Port.

- **EPP Mode Select**

Options are 1.7 and 1.9 (default ; IEEE 1284 compliant).

- **ECP Mode Use DMA**

Options are 1 and 3. This field is available only when one of the two following options in **Parallel Port Mode** is selected: *ECP* or *ECP+EPP*.

- **Game Port Address**

Selects the address that the game port will occupy.

- **Midi Port Address**

Selects the address that the Midi port will occupy.

- **Midi Port IRQ**

Selects the interrupt that the Midi port will occupy.

3.9 Power Management Setup

Power Management allows you to configure you system to use energy most efficiently, and still in a manner consistent with your own style of computer use.

ACPI Function	Enabled	Item Help
Power Management	User Define	
PM Control by APM	Yes	Menu Level ▶
MODEM Use IRQ	3	
Video Off In Suspend	Yes	
Video Off Method	DPMS	
PM Timers:		
HDD Power Down	Disabled	
Suspend Mode	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Power On by Ring	Disabled	
Resume by Alarm	Disabled	
x Date (of Month) Alarm	0	
x Time (hh:mm:ss) Alarm	0 0 0	
*** Suspend Break Events ***		
IRQ [1] (Keyboard)	Enabled	
IRQ [3]	Disabled	
IRQ [4]	Disabled	
IRQ [5]	Disabled	
IRQ [6] (Floppy Disk)	Enabled	
IRQ [7]	Disabled	

- **ACPI function**

This option allows you to enable/disable the Advanced Configuration and Power Interface, which makes hardware status information available to the operating system and offers improved power management. To make an ACPI system, you must use an ACPI OS such as Windows 98.

- **Power Management**

This category allows you to select the type (or degree) of power saving and is directly related to the following modes: Doze Mode, Standby Mode, Suspend Mode and HDD Power Down. There are four selections for Power Management, three of which have fixed mode settings:

Disabled (default)	No power management. Disables all four modes
Min Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.

Max Saving	Maximum power management -- **ONLY AVAILABLE FOR SL** CPUs. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Set each mode individually. When Enabled, each range is from 1 min. to 1 hr., except for HDD Power Down which ranges from 1 min. to 15 min.

• **Video Off Method**

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports, writing blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

• **Video Off In Suspend**

This is to determine whether to activate the video off function in suspend mode.

• **Suspend Type**

In *Stop Grant* (or *Quick Start*) state, the processor disables clocks to portions of its internal logic, but is able to snoop host bus cycles in order to maintain cache coherency. In the *Power On Suspend* state, the host clock stops running altogether, resulting in more power saving but longer resume time.

• **MODEM Use IRQ**

This item tells the Power Management BIOS which IRQ is assigned to the installed MODEM. Options are NA, 3 (default), 4, 5, 7, 9, 10, and 11.

The following modes are Green PC power saving functions which are only user configurable when *User Defined* Power Management has been selected. See below for available selections.

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.

• **Soft-Off by PWR-BTTN**

With *Instant-Off* selected, the ATX switch functions like a normal system power off button. With *Delay 4 Sec.* selected, you must hold down the ATX switch for more than 4 seconds to power off the system.

• **Power On by Ring**

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) power on the system or return it to full power out of suspend mode.

• **Resume by Alarm**

When enabled, the system will automatically power on or returns to full power out of suspend mode at the time and date of the month (0 for daily) specified.

3.10 PNP/PCI Configurations

The PCI **P**ersonal **C**omponent **I**nterconnect Bus was developed by Intel and other industry leader partners primarily to address two important issues faced by PC hardware designers today: a) How to allow peripheral devices to take the fullest advantage of the power of Pentium and Pentium Pro chip technology, and b) Provide a simpler installation process for peripheral devices, such as Network cards, EIDE or SCSI controllers.

PCI accomplishes these goals with its 32-bit Data path Local Bus design, and support for Plug & Play. Unlike older expansion bus architectures, PCI provides peripherals with a direct connection to the CPU and memory. The PCI bus runs at 33Mhz and has a maximum transfer capability of 132MBps. With Plug & Play, the system BIOS automatically determines hardware resources for new peripherals, simplifying installation of multiple interface cards.

This Setup Menu provides configuration options for the PCI Bus and its assigned resources.

		Item Help
PNP OS Installed	No	
Reset Configuration Data	Disabled	
		Menu Level ▶
Resources Controlled by	Auto (ESCD)	
IRQ Resources	Press Enter	
DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
PCI IRQ Actived By	Level	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- **Reset Configuration Data**

Reset Configuration Data: When set to Enabled, ESCD (Extended System Configuration Data) is cleared. This setting will automatically be set back to Disabled when the system reboots.

- **Resources Controlled By**

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. This capability is specifically designed for a Plug and Play operating system such as Windows® 95.

When set to *Manual*, you are able to configure the **IRQ Resources**. Pressing <Enter> at the selection field brings up a submenu like the one shown below:

			Item Help
IRQ-3	assigned to	PCI/ISA PnP	
IRQ-4	assigned to	PCI/ISA PnP	
IRQ-5	assigned to	PCI/ISA PnP	
IRQ-7	assigned to	PCI/ISA PnP	Menu Level ▶▶
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	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- **IRQ3/4/5/7/9/10/11/12/14/15 assigned to**

By default, all resources are assigned to the PCI Bus. If an ISA card requires a particular IRQ or DMA channel, those resources should be set to Legacy ISA so that the PCI Bus will not try to use them. Choices are *Legacy ISA* and *PCI/ISA PnP*.

- **PCI/VGA Palette Snoop**

This option must be set to *Enabled* if any ISA MPEG card installed requires VGA palette snooping.

Load Fail-Safe Defaults

Loads "Fail Safe" settings into the BIOS Setup program. These options are designed to slow the system down for troubleshooting purposes. To load the default values, highlight this option and press [ENTER]. Enter "Y" in the confirmation screen and press [ENTER] again. User-defined options in the **Standard CMOS Setup** are not affected.

Load Optimized Defaults

Loads the default values for best system performance into the BIOS Setup program. To load the default values, highlight this option and press [ENTER]. Enter "y" in the confirmation screen and press [ENTER] again. User-defined options in the **Standard CMOS Setup** are not affected.

3.11 Supervisor Password and User Password Setting

Passwords can be set to provide protection for the BIOS configuration options, or to restrict access to the computer itself.

When enabled, User Password will require all users to enter a password in order to use the system, and/or enter the BIOS setup (but can't change its contents). A Supervisor Password is used to protect the stored CMOS options from being changed by unauthorized users.

Keep in mind that when set, a password is required only when booting the system. It will not provide protection to a system that is already booted.

The password check option is set in **Advanced BIOS Features** by choosing either System (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when the user enters the BIOS Setup). The password is stored in CMOS RAM, and can be cleared by the Clear CMOS jumper (Refer to the Installation Guide).

To set a password:

1. You must first set the *Supervisor* password by choosing *Supervisor Password* and pressing [ENTER]. Setup prompts for a password.

2. Enter a 1-8 character password using letters, numbers, or a combination of both. The specific characters are not shown as you enter them. Press [ENTER].

3. A confirmation box appears asking you to re-enter the password. Enter the password again. Press [ENTER]. Follow the same procedure to set the *User Password*.

Changing a Password:

Select the appropriate password option (Supervisor or User) from the main menu and press [ENTER]. Enter the current password and press [Enter]. The screen does not display the characters entered. Enter in the new password, then the confirmation. You cannot change the current password unless you know it.

Erasing a Password:

1. If you know the current password, but want to disable password checking, follow the procedure for changing the password. When Setup prompts for the new password, simply press [ENTER]. You will see a message indicating that the password is disabled.

2. If you do not know the current password, the CMOS must be cleared by cleared by the Clear CMOS jumper (Refer to the Installation Guide). *This will clear all user-defined BIOS Setup options.

Save & Exit Setup / Exit Without Saving

Select *Save & Exit Setup* to save into the CMOS memory all modifications specified during the current session. To save the configuration changes, highlight this option in the main menu and press [ENTER]. The system displays a confirmation message on the screen. Press the "Y" key and then [Enter]. Press the "N" key and then the [Enter] key to abort. The *Exit Without Saving* option allows the user to exit the BIOS Setup without updating any changes made during the current session.

3.12   FLASH BIOS Programming Utility

Updating the Award BIOS Code is made easy with the AWDFLASH Utility found under the "Utilities" folder of the supplied CD-ROM. Since this mainboard features FLASH BIOS, it is not necessary to change the actual BIOS chip in order to upgrade the System BIOS. The user can simply re-program the old BIOS using the AWDFLASH Utility as follows:

1. First, boot the system with DOS or to "Safe Mode" under Windows 95. If you are booting DOS from a hard drive or floppy disk, press [F5] when the message "Starting MS-DOS…" appears on the screen. If you are booting Windows 95, press the [F8] key, and select the "Safe mode command prompt" option. This will assure that the system is running in *"real mode"* with **no device drivers loaded.** *This is the only correct way to run the AWDFLASH Utility program.*

2. There are (2) important files needed to re-program the BIOS. The first is "AWDFLASH.EXE" which is the FLASH BIOS Programming Utility. The second file needed is the updated "BIN" file which contains the actual BIOS code. This file will have the extension [.bin], such as "P598GH.BIN". Make sure these files are on the diskette or hard drive in the same directory.

3. Start the AWDFLASH Utility by changing to the directory where the two required files exist and typing: AWDFLASH and pressing [ENTER].

```
         FLASH MEMORY WRITER V7.13A
      (C) Award Software 1999 All Rights Reserved

For ARTX-1535D-6A5KPCZ9C-0          DATE: 04/15/1999
Flash Type -

File Name to Program :   [          ]



Error Message:
```

4. The AWDFLASH Utility Screen appears. You will be asked for the file name to program. Type in the name of the new BIOS (.bin) file and hit [ENTER].

5. The program will then ask if you want to backup the old BIOS. This is recommended in case there are any problems with the new ".bin" file. Enter the name of the new backup file (such as "backup.bin") and press [ENTER].

6. At this time the system will prompt you for final confirmation before beginning programming. The Utility can be aborted at this time by hitting "n". To begin programming, hit "y"...

7. When the Flash programming starts, a bar indicator will show the progress of the programming operation. After successful completion, hit the reset button or power off the computer.

> Be sure to perform "**Load Optimized Defaults**" for your new BIOS to synchronize the previous BIOS with the updated BIOS.

CHAPTER 4
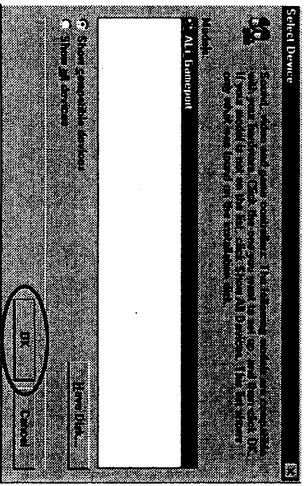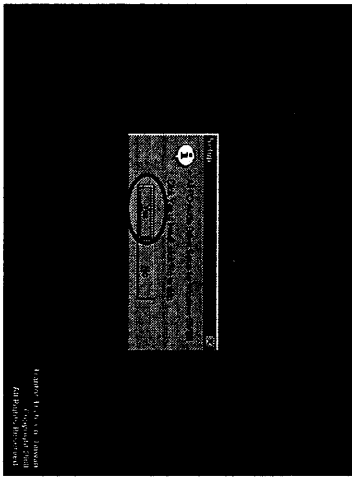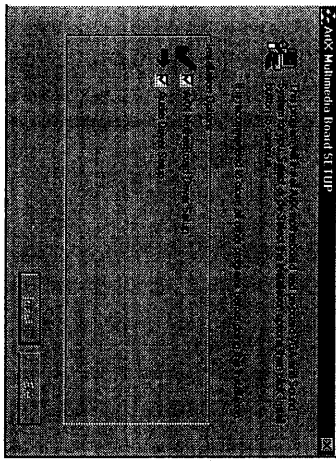# DRIVER INSTALLATION

4.1 Installing the Mainboard Driver

1. Start Windows 9x
2. Insert the CD installation disc into your CD-ROM drive.
3. The CD should autorun and the following screen will appear.
   Note: if the CD does not autorun click on "Start", then "Run", then type in "D:\MSSETUP.EXE" and click "OK".
4. This program will install ArtX motherboard and on-board VGA and Sound System for you. Select or Select the installation options than click "**Install**" button to continue.
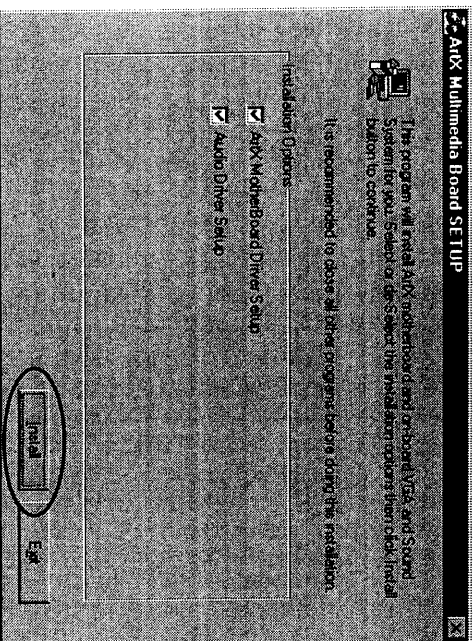
5. When the Welcome box appears. Click on the **"Next"** button to go to the next step.
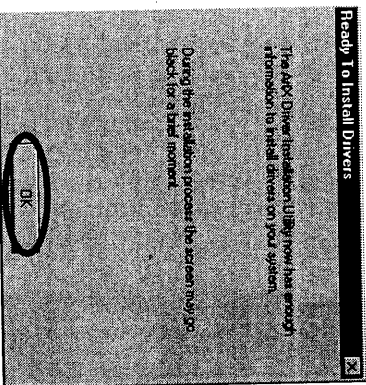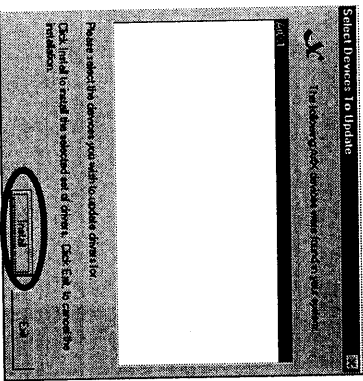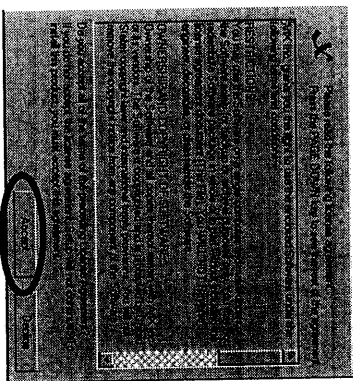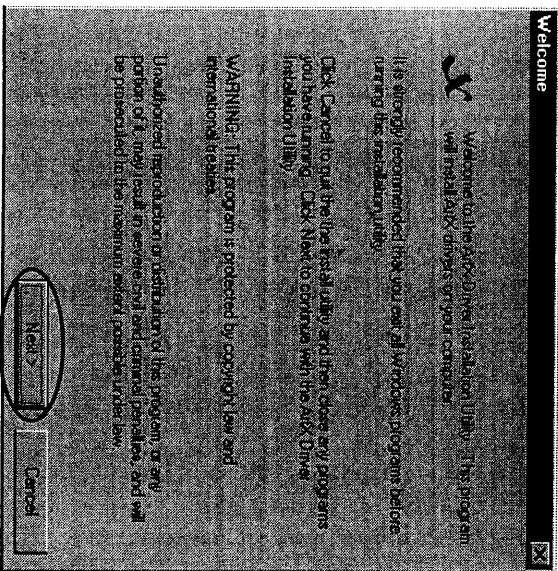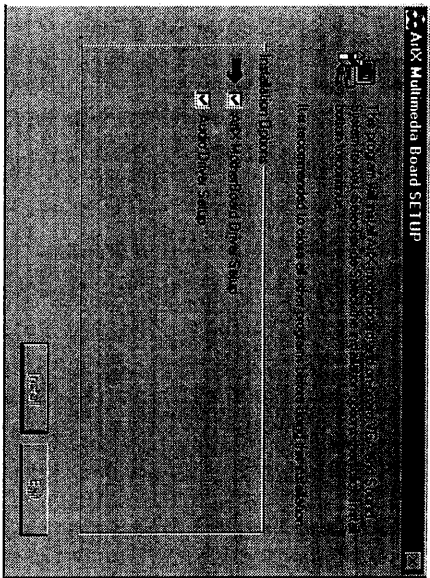
6. After the installation of the ArtX MotherBoard drivers, proceed with the Audio Setup-PART2. It will prompt you for ALi Gameport device, press the "**OK**" option to proceed. It will install the related Audio Device Driver.

7. Click "**OK**" button after the Windows has finish the installation of the driver.