Federal Communications Commission (F.C.C) Statement

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Accessories: This device has been tested and found to comply with the limits of a Class B digital device, the accessories associated with this equipment are as follows:

1. Shielded serial cable (Can be obtained from multiple retail outlets)
2. Shielded printer cable (Can be obtained from multiple retail outlets)
3. Shielded video cable (Can be obtained from multiple retail outlets)
4. Shielded power cord (Provided by manufacturer)

These accessories are required to ensure compliance with FCC Rules. It is the responsibility of the user to provide and use these accessories properly.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that

to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Disclaimer

The vendor makes no representations or warranties with respect to the contents hereof and specially disclaims any implied warranties of merchantability or fitness for any purpose. Further, the vendor reserves the right to revise this publication and to make changes to the contents hereof without obligation to notify any party beforehand.
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Canadian D.O.C. Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Cet appareil numbérique n'emet pas de bruits radioélectriques dépassant les limites appliqués aux appareils numbériques de Class B préscrits dans le reglement du brouillage radioélectrique edict par le ministere Des Communications du Canada.

Contents

Contents

Contents

Introduction

System Overview

Thank you for buying this product! This manual was written to help you start using this product as quickly and smoothly as possible. Inside you will find adequate explanations to solve most problems. For help in finding topics of interest, refer to Table of Conterts.

This board incorporates the system board, ISA I/O, and PCI IDE into one board that provides a total PC solution. The motherboard, a Celeron ™ /Pentium®II /Pentium®*!!!* microprocessor based PC/Micro ATX system, supports ISA Bus and AGP and PCI Local Bus to support upgrades to your system performance. It is ideal for multi-tasking and fully supports MS-DOS, Windows, Windows NT, Novell, OS/2, Windows9x, UNIX, SCO UNIX etc. This manual also explains how to install the motherboard for operation and how to setup your CMOS configuration with the BIOS setup program.

1 Motherboard Description

1.1 Features

1.1.1 Hardware

CPU

- The Celeron ™ /Pentium®II /Pentium®*!!!* Processor provides the new generation power for high-end workstations and servers.
- Provides slot1.

Speed

- Supports CPU bus frequency 66MHz/100MHz/133MHz.
- Supports from 233MHz to 700MHz CPU core speed.
- Supports 33MHz PCI Bus speed.
- I/O clock 8MHz for ISA Bus.
- Supports 66MHz / 133MHz AGP Bus.

DRAM Memory

- Supports 8/16/32/64/128....MB, 3.3V / Unbuffered DIMM module socket.
- Supports Synchronous DRAM.
- Supports a maximum memory size of 384MB with SDRAM.

Flash Memory

- Supports flash memory.
- Supports ESCD Function.

Shadow RAM

- A memory controller that provides shadow RAM and supports 8-bit ROM BIOS.

Green Function

- Supports power management operation via BIOS.
- Wakes up by any key pressed or mouse activity.

BUS Slots

– Provides one 16-bit ISA Bus slots and three PCI Bus slots, one AGP Bus slot.

PCI Enhanced IDE Built-in On Board

– Supports 4 IDE hard disk drives.
– Supports PIO mode 4, Master Mode, high performance hard disk drives.
– Supports Ultra DMA/33/66, Bus Master Mode.
– Supports IDE interface with CD-ROM.
– Supports high capacity hard disk drives.
– Supports LBA mode.
– Supports LS120/ZIP100/ZIP250.

PCI Sound Built-in Onboard

– ESS™ Solo1™ Sound Chip.
– Full native DOS games compatibility.
– High-Quality ESFM music synthesizer.
– Software Wavetable synthesizer.
– Integrated Spatialzer 3D audio effects processor.
– 16-Bit stereo ADC and DAC.
– Full-Duplex operation for simultaneous record and playback.
– Supports
  (1) PC games and applications for Sound Blaster™ and Sound Blaster Pro™.
  (2) Microsoft Windows Sound System, PC 97™/PC 98™/PC 99™ and WHQL™ specifications.

ISA I/O Built-in Onboard

– Supports one multi-mode Parallel Port.
  (1) Standard & Bidirection Parallel Port.
  (2) Enhanced Parallel Port (EPP).
  (3) Extended Capabilities Port (ECP).
– Supports two serial ports, 16550 UART with 16 byte FIFO.
– Supports one Infrared transmission (IR) port.
– Supports PS/2 Mouse , PS/2 Keyboard.
– Supports 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk drives.

Hardware Monitor Subsystem (Optional)

The hardware monitor subsystem provides low-cost instrumentation capabilities. The features of the hardware monitor subsystem include:

- Microprocessor System Hardware Monitor:
  - Integrated temperature and voltage monitoring to detect levels above or below acceptable values(+12V, -12V, +5V, +3.3V). When suggested ratings for temperature, fan speed, or voltage are exceeded, an interrupt is activated.
  - One fan speed sensor
- Remote reset capabilities from a remote peer or server.

Universal Serial Bus

- USB V.1.0 and Intel™ Universal HCI V.1.1 compatible.
- Supports two Universal Serial Bus (U.S.B.) Ports.
- Supports 48 MHz USB.

Dimension

- 24.3 cm X 21 cm (W x L)

1.1.2 Software

BIOS

- AWARD legal BIOS.
- Supports APM1.2.
- Supports USB Function.
- Supports ACPI.

Operating System

- Offers the highest performance for MS-DOS, OS/2, Windows, Windows NT, Windows 9x, Novell, UNIX, SCO UNIX etc.

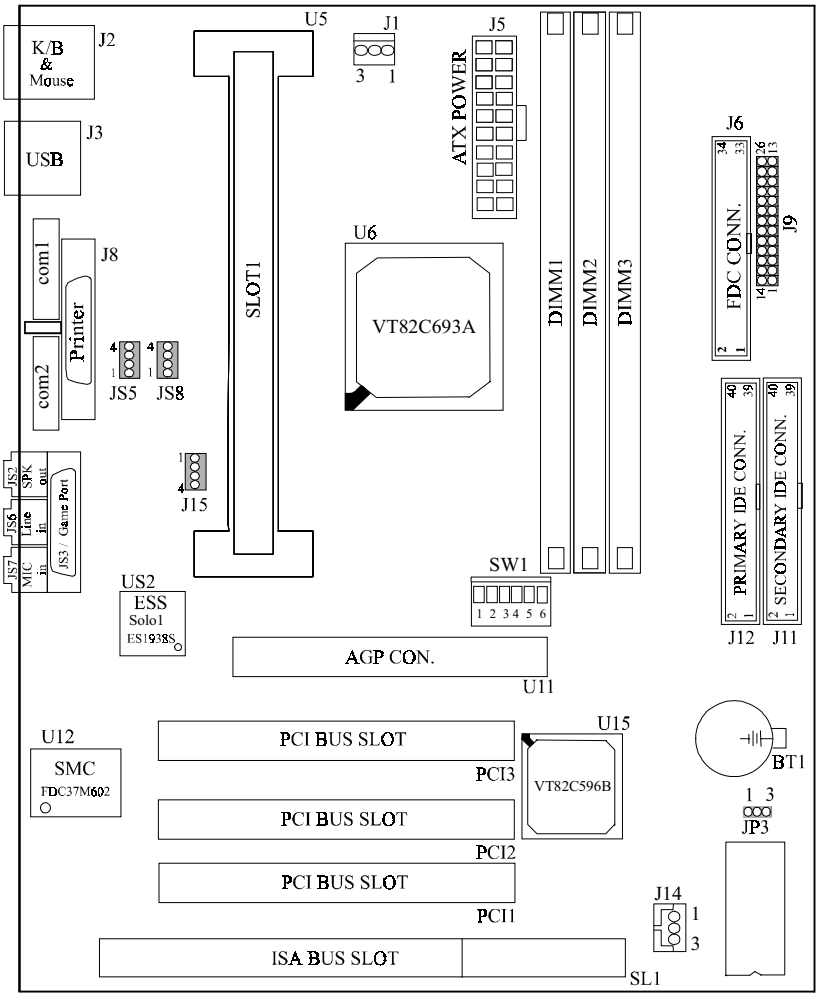
1.1.3 Attachments

- HDD Cable.
- FDD Cable.
- Retention Kits for CPU.
- CD for Driver and BIOS flash utility.
- Rear I/O Panel for Micro ATX Case (Optional).

1.2 Motherboard Installation

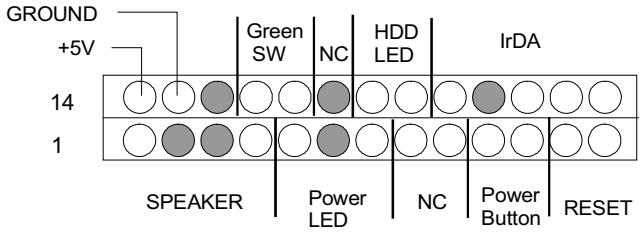
1.2.1 Layout of Motherboard

Model No.M6VBE-A Ver:1.1/1.2



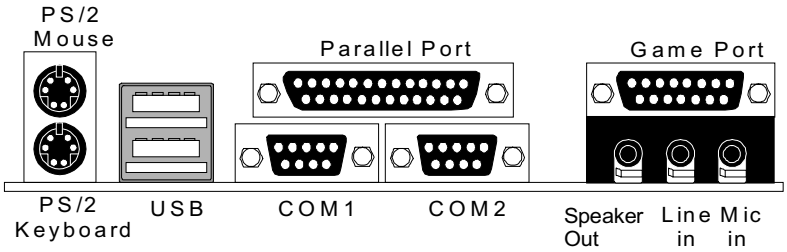
1.3 Motherboard Connectors

1.3.1 Front Panel Connectors (J9)



Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	Speaker	Speaker Connector	14	+5V	VCC
2	NC		15	Ground	Ground
3	NC		16	Ground	
4	+5V		17	Green Control	Green Switch
5	Power LED(+)	Power LED	18	Ground	
6	NC		19	NC	
7	Ground		20	HDD LED(-)	HDD LED
8	NC	No Function	21	HDD LED(+)	
9	NC		22	+5V	IrDA Connector
10	Power Switch	ATX Power Button	23	NC	
11	Standby Voltage		24	IRRX	
12	Reset Control	Reset	25	Ground	
13	Ground		26	IRTX	

1.3.2 Back Panel Connectors



1.4 CPU Installation

1.4.1 CPU Installation Procedure

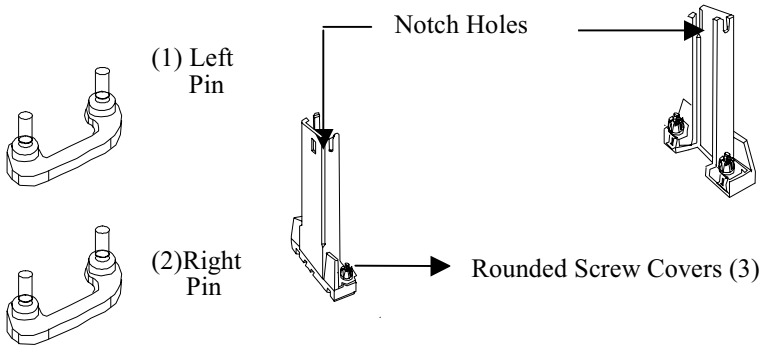
Motherboard

The M6VBE-A motherboard provides one Single Edge Contact (SEC) slot. This slot allows you to install a Celeron ™ /Pentium®II /Pentium®*!!!* CPU.

Before you use:
Please look on your motherboard and locate the CPU fan and CPU fan power supply. Please verify that this fan is directly used to cool the CPU and its heat sink, as well as to cool the motherboard and circulate the air.

WARNING : If air circulation is insufficient, the CPU will overheat, which may damage the CPU, CPU slot, and the motherboard.

Please inspect your motherboard to see if it has the Celeron ™ /Pentium®II /Pentium®*!!!* CPU retention kit components. (ATTENTION: The CPU installation component color and shape may vary slightly based on kits coming from different suppliers.)



Heat Sink Pins **Heat Sink**

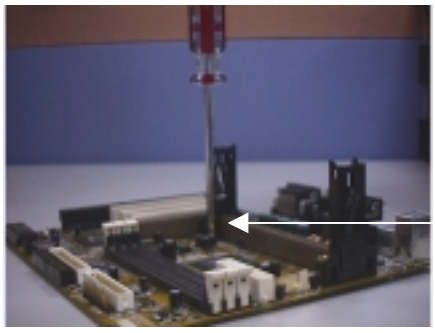
Celeron ™ /Pentium®II &*!!!* **Celeron ™ /Pentium®II &*!!!***

M6VBE-A CPU Special Installation and Setup：

Install Pentium®II /Pentium®*III* /Celeron ™ :

1 · Installing the Heat Sink Support Frame：

The Heat Sink Support Base can only be inserted one-way. Please match the leg sizes on the Heat Sink Support Base to the holes on the motherboard. Please insert the screws from the bottom of the motherboard and tighten into the rounded screw covers.

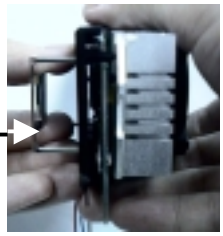


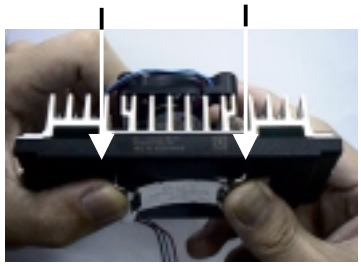
2 · Installing the CPU Heat sink：

Take the smooth side of the Heat Sink and bound it closely together with the CPU. Next, at the ends of the Heat Sink, clip the CPU together with the Heat Sink. Please verify that there is zero space between the Heat Sink and CPU unit. WARNING: If there is any space between the CPU and Heat Sink, the CPU will over-heat severely and may damage the CPU.

Attach the metal clips at ends of the CPU unit

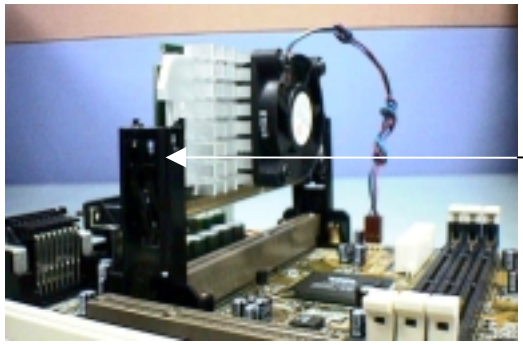
Push the clips on the Heat Sink and CPU unit to tightly bind them together. The arrows mark the location.





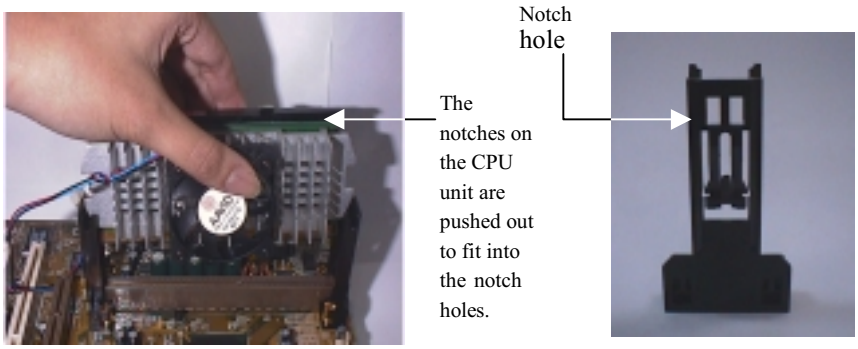
3 · Insert the CPU into the SEC Solt：

(1) First, press the CPU unit into the Frame until it fits snugly into the notch holes. Then, clip the Heat Sink and CPU together with the Heat Sink Support Frame.



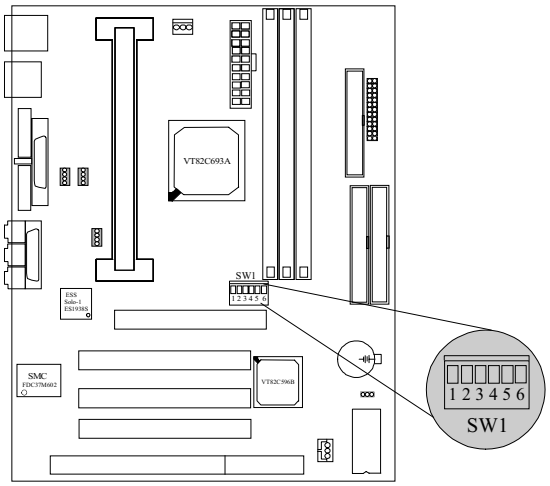
The correct direction to insert the Heat Sink and CPU into the Heat Sink Support Frame should allow you to easily insert them.

(2) Pushing the CPU unit into the frame, wait until the CPU unit is firmly in position before securing. The notches are pushed out. They will fit tightly into the Heat Sink Frame Notch holes.



(3) Firmly secure the Heat Sink by attaching the Heat Sink Frame TOP-Bar. Please verify that the Heat Sink and CPU are tightly pressed together. Please check that the entire Frame, Heat Sink, and CPU unit are tightly installed and that there is no possible movement or looseness in the assembly.

1.4.2 CPU Clock Selection (SW1)



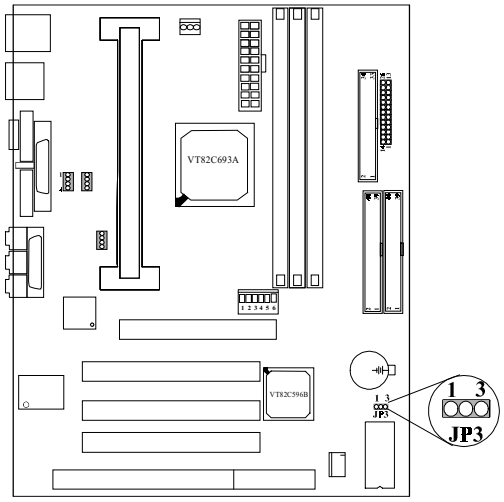
CPU Speed	RATIO	SW1 (1)	SW1 (2)	SW1 (3)	SW1 (4)	SW1 (5)	SW1 (6)
233MHz	66 x3.5	OFF	OFF	ON	ON	ON	ON
266MHz	66 x4	ON	ON	OFF	ON	ON	ON
300MHz	66 x4.5	OFF	ON	OFF	ON	ON	ON
333MHz	66 x5	ON	OFF	OFF	ON	ON	ON
366MHz	66 x5.5	OFF	OFF	OFF	ON	ON	ON
400MHz	66 x6	ON	ON	ON	ON	ON	OFF
433MHz	66 x6.5	OFF	ON	ON	ON	ON	OFF
466MHz	66 x7	ON	OFF	ON	ON	ON	OFF
500MHz	66 x7.5	OFF	OFF	ON	ON	ON	OFF
533MHz	66 x8	ON	ON	OFF	ON	ON	OFF

CPU Speed	RATIO	SW1 (1)	SW1 (2)	SW1 (3)	SW1 (4)	SW1 (5)	SW1 (6)
350/466MHz	100/133 x3.5	OFF	OFF	ON	OFF	OFF	ON
400/533MHz	100/133 x4.0	ON	ON	OFF	OFF	OFF	ON
450/600MHz	100/133 x4.5	OFF	ON	OFF	OFF	OFF	ON
500/666MHz	100/133 x5.0	ON	OFF	OFF	OFF	OFF	ON
550/733MHz	100/133x5.5	OFF	OFF	OFF	OFF	OFF	ON
600/800MHz	100/133 x 6	ON	ON	ON	OFF	OFF	OFF
650/866MHz	100/133 x 6.5	OFF	ON	ON	OFF	OFF	OFF
700/933MHz	100/133 x 7	ON	OFF	ON	OFF	OFF	OFF
750MHz	100x7.5	OFF	OFF	ON	OFF	OFF	OFF
800MHz	100x8	ON	ON	OFF	OFF	OFF	OFF

1.5 Jumper Settings

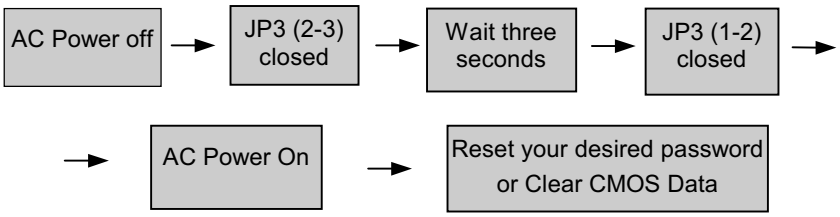
A jumper is two or more pins which may be covered by a plastic jumper cap, allowing you to select different system options.

1.5.1 CMOS Function Selection (JP3)

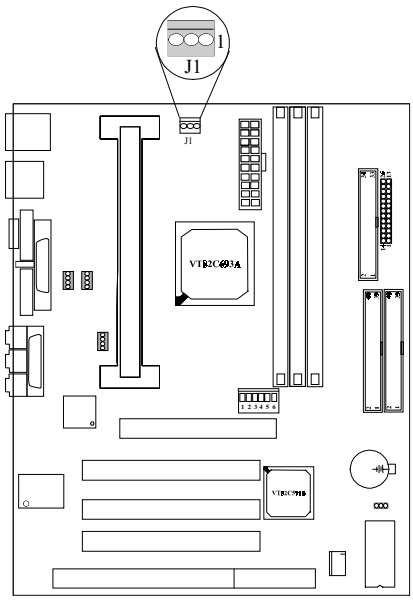


JP3	Assignment
1 3 1-2 Closed	Normal Operation (default)
1 3 2-3 Closed	Clear CMOS Data (*Note)
1 3 Open	Onboard Battery Disabled

Note : **Please follow the procedure as below to clear CMOS Data.**
Note : **Please follow the procedure as below to clear BIOS Password if your password is lost or forgotten.**

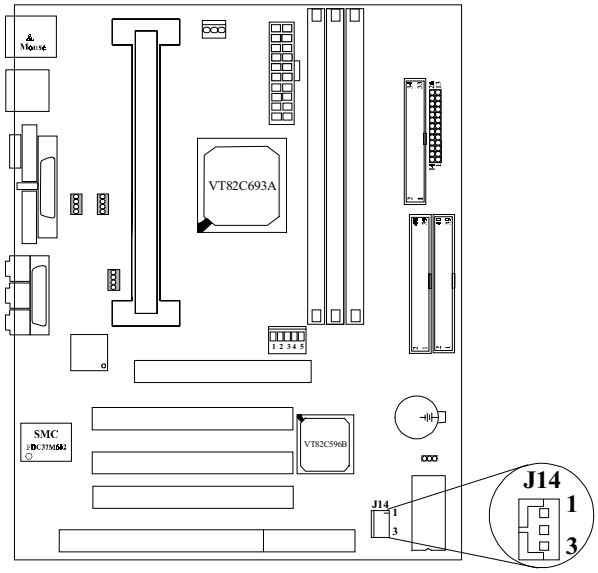

AC Power off
JP3 (2-3) closed
Wait three seconds
JP3 (1-2) closed
AC Power On
Reset your desired password or Clear CMOS Data

1.5.2 CPU Cooling Fan Power Connector (J1)



Pin No.	Assignment
1	Common
2	+12V
3	Fan R.P.M Sense

1.5.3 Wake-On-LAN Header (J14)



Pin No.	Assignment
1	+5 V Standby Voltage
2	Ground
3	MP-Wakeup

1.6 DRAM Installation

1.6.1 DIMM

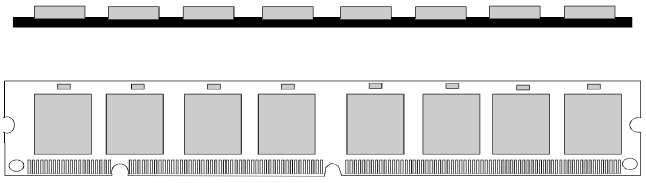
DRAM Access Time : 3.3V Unbuffered SDRAM PC 66/100/133 Type required.
DRAM Type : 8MB/ 16MB/ 32MB/ 64MB/ 128MB/ 256MB DIMM Module (168pin)

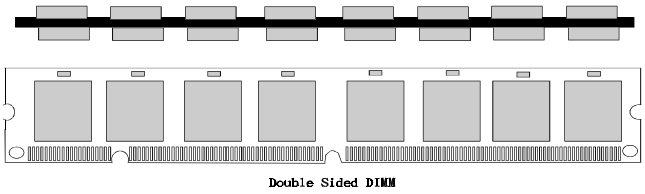
Total Memory Size (MB)	Bank 0 DIMM1	Bank 1 DIMM2	Bank 2 DIMM3
8 M	8M x 1 pc	----	----
16 M	16M x 1 pc	----	----
32 M	32M x 1 pc	----	----
64 M	64M x 1 pc	----	----
128 M	128M x 1 pc	----	----
256 M	256M x 1 pc	----	----
16 M	8M x 1 pc	8M x 1 pc	----
32 M	16M x 1 pc	16M x 1 pc	----
64 M	32M x 1 pc	32M x 1 pc	----
128 M	64M x 1 pc	64M x 1 pc	----
256 M	128M x 1 pc	128M x 1 pc	----
512 M	256M x 1 pc	256M x 1 pc	----
24 M	8M x 1 pc	8M x 1 pc	8M x 1 pc
40 M	16M x 1 pc	16M x 1 pc	8M x 1 pc
72 M	32M x 1 pc	32M x 1 pc	8M x 1 pc
136 M	64M x 1 pc	64M x 1 pc	8M x 1 pc
264 M	128M x 1 pc	128M x 1 pc	8M x 1 pc
520 M	256M x 1 pc	256M x 1 pc	8M x 1 pc
32 M	8M x 1 pc	8M x 1 pc	16M x 1 pc
48 M	16M x 1 pc	16M x 1 pc	16M x 1 pc
80 M	32M x 1 pc	32M x 1 pc	16M x 1 pc
144 M	64M x 1 pc	64M x 1 pc	16M x 1 pc
272 M	128M x 1 pc	128M x 1 pc	16M x 1 pc
528 M	256M x 1 pc	256M x 1 pc	16M x 1 pc

Total Memory Size (MB)	Bank 0 DIMM1	Bank 1 DIMM2	Bank 2 DIMM3
48 M	8M x 1 pc	8M x 1 pc	32M x 1 pc
64 M	16M x 1 pc	16M x 1 pc	32M x 1 pc
96 M	32M x 1 pc	32M x 1 pc	32M x 1 pc
160 M	64M x 1 pc	64M x 1 pc	32M x 1 pc
288 M	128M x 1 pc	128M x 1 pc	32M x 1 pc
544 M	256M x 1 pc	256M x 1 pc	32M x 1 pc
80 M	8M x 1 pc	8M x 1 pc	64M x 1 pc
96 M	16M x 1 pc	16M x 1 pc	64M x 1 pc
128 M	32M x 1 pc	32M x 1 pc	64M x 1 pc
192 M	64M x 1 pc	64M x 1 pc	64M x 1 pc
320 M	128M x 1 pc	128M x 1 pc	64M x 1 pc
576 M	256M x 1 pc	256M x 1 pc	64M x 1 pc
144 M	8M x 1 pc	8M x 1 pc	128M x 1 pc
160 M	16M x 1 pc	16M x 1 pc	128M x 1 pc
192 M	32M x 1 pc	32M x 1 pc	128M x 1 pc
256 M	64M x 1 pc	64M x 1 pc	128M x 1 pc
384 M	128M x 1 pc	128M x 1 pc	128M x 1 pc
640 M	256M x 1 pc	256M x 1 pc	128M x 1 pc
272 M	8M x 1 pc	8M x 1 pc	256M x 1 pc
288 M	16M x 1 pc	16M x 1 pc	256M x 1 pc
320 M	32M x 1 pc	32M x 1 pc	256M x 1 pc
384 M	64M x 1 pc	64M x 1 pc	256M x 1 pc
512 M	128M x 1 pc	128M x 1 pc	256M x 1 pc
768 M	256M x 1 pc	256M x 1 pc	256M x 1 pc

*The list shown above for DRAM configuration is only for reference.

1.6.2 How to install a DIMM Module

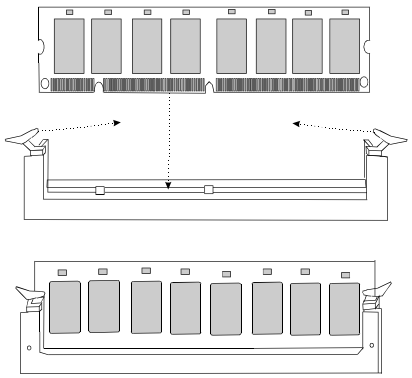




1. The DIMM socket has a " Plastic Safety Tab" and the DIMM memory module has an asymmetrical notch", so the DIMM memory module can only fit into the slot in one direction.

2. Push the tabs out. Insert the DIMM memory modules into the socket at 90-degree angle then push down vertically to fit the modules into place.

3. The mounting holes and plastic tabs should fit over the edge and hold the DIMM memory modules in place.



1.7 Audio Subsystem

Chipset:

– ESS ES1938S Solo-1

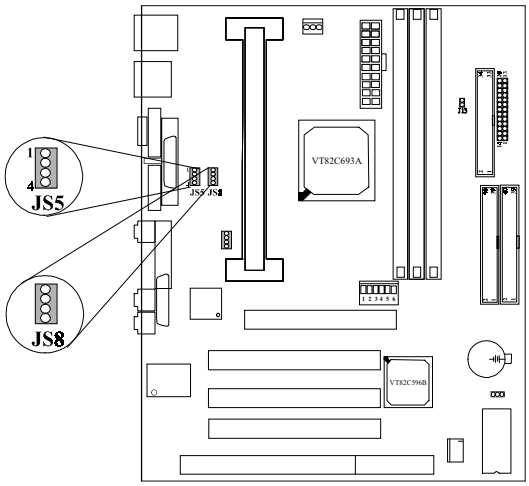
Interface:

– PCI Interface

Features

– Full native DOS games compatibility
– High-Quality ESFM music synthesizer.
– Software Wavetable synthesizer.
– Integrated Spatialzer 3D audio effects processor.
– 16-Bit stereo ACD and DAC.
– Full-Duplex operation for simultaneous record and playback.
– Advanced power management meets ACPI standards.
– Supports PC games and applications for Sound Blaster and Sound Blaster Pro, Microsoft Windows Sound System, PC 97/PC 98 and WHQL specifications.
– PCI 2.1 interface support.

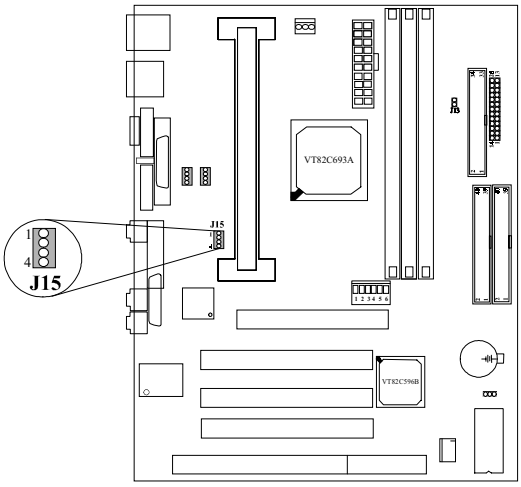
1.7.1 CD Audio Input Connector (JS5 and JS8)



Pin No. of JS5	Assignment
4	Right Channel Input
3	GND
2	GND
1	Left Channel Input

Pin No. of JS8	Assignment
4	GND
3	Right Channel Input
2	GND
1	Left Channel Input

1.7.2 Telephony Connector (J15)



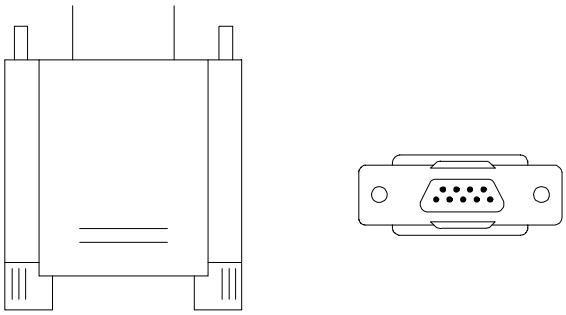
Pin No.	Assignment
1	MONO_IN
2	GND
3	GND
4	MONO_OUT

1.8 Serial and Parallel Interface Ports

This system equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

The Serial Interface Port

The serial interface port is sometimes referred to as a RS-232 port or an asynchronous communications port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer with another computer system. If you wish to transfer the contents of your hard disk to another system it can be accomplished by using each machine's serial port.



The serial ports on this system have two types of connectors, one 9-pin and one 25-pin. Some older computer systems and peripherals may only have a 25-pin connector. Should you need to connect your 9-pin serial port to a 25-pin serial port, you can purchase a 9-to-25 pin adapter.

Connectivity

The many ways that a serial port can be used make it necessary to be familiarized with the pinout diagram. The following chart gives you the function of each pin on the 9-pin connector. This information can be used when configuring certain software programs to work with the serial port.

Signal	Name	DB9 PIN	DB25 PIN
DCD	Data Carrier Detect	1	8
RX	Receive Data	2	3
TX	Transmit Data	3	2
DTR	Data Terminal Ready	4	20
GND	Signal Ground	5	7
DSR	Data Set Ready	6	6
RTS	Request to Send	7	4
CTS	Clear to Send	8	5
RI	Ring Indicator	9	22

Special Applications

There are two types of serial devices that can be connected to a serial port. One of the devices is called the “DTE” (Data Terminal Equipment) and the other device is called the “DCE” (Data Communications Equipment). If a modem is connected to a computer, for example, the modem is called the DCE and the computer is called the DTE. In situations such as this, the pins on the serial ports can be connected straight through.

In instances when there are two DTE devices connected together, such as a computer and a printer, a special adapter called a “Null Modem” is needed to make communication between the two devices possible.

When using the serial port to communicate between devices, one problem in particular may arise. Some manufacturers use one set of signals to begin communication with another device and other manufacturers do not use these signals to begin communication. If you encounter a communication problem that cannot be resolved using a null modem, it can generally be assumed that one device is using the initialization signals and the other device is not. This can

usually be resolved by wiring the RTS, CTS, and DCD pins together.

Serial Ports/COM Ports

The two serial ports on the computer are called COM1 and COM2, respectively. If you wish, two more serial ports can be added onto the computer using optional hardware. Should you choose to add the extra Serial ports (COM ports), they would be called COM3 and COM4.

When using serial ports to communicate with a peripheral devices, be sure to assign only one COM port number to each device. For example, if a printer and a scanner are both connected to your computer through serial ports the printer must be assigned one COM port (i.e. COM1) and the scanner must be assigned the other COM port (i.e. COM2). No two devices can be assigned to one COM port. Each peripheral must have its own COM port.

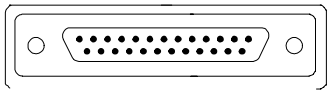
NOTE: Four serial ports may be installed on the computer. However, no more than two ports can be used simultaneously.

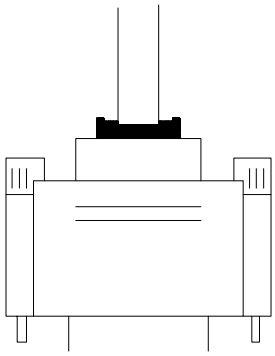
*If you have installed an internal modem, be careful not to assign a COM port number that has already been assigned to another device. This error is common.

When installing a device that is going to require the use of a serial port, use a diagnostic program to find out which ports are available. It may be necessary to remove expansion cards that have serial ports in order to check their jumper settings. The jumper settings will indicate which COM port the card has been assigned. Checking the expansion card will eliminate mistakes in overlapping COM ports. Once you have completed the installation of peripheral devices using the serial ports, be sure that the communication parameters such as baud rate, parity bit, etc. are matching. If your computer is set for a baud rate of 9600 and your modem is set for a baud rate of 2400, you will not be able to send messages. The manuals that accompany the peripheral devices will inform you on the procedure for setting their parameters. Software manuals will also have instructions on setting parameters.

Parallel Interface Ports

Unlike the serial port, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on you system has a 25-pin, DB5 connector (see picture below). The pinouts for the parallel port are shown in the table below.





Signal	Pin
-Strobe	1
Data 0	2
Data 1	3
Data 2	4
Data 3	5
Data 4	6
Data 5	7
Data 6	8
Data 7	9
-Ack	10
Busy	11
Paper Empty	12
+Select	13
-Auto FDXT	14
-Error	15
-Init	16
-SLCTN	17
Ground	18
Ground	19
Ground	20
Ground	21
Ground	22
Ground	23
Ground	24
Ground	25
Ground	26

2. BIOS Setup

Entering Setup

Power on the computer and press <**Del**> immediately allowing you to enter Setup. The other way to enter Setup is to power on the Computer, and when the message below appears briefly at the bottom of the screen during the POST (Power On Self Test), press the <**Del**> key or simultaneously press the <**CTRL**>, <**Alt**>, and <**Esc**> keys.

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

If the message disappears before you respond and you still wish to enter Setup, restart the system again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the < **CTRL**>, <**Alt**>, and <**Delete**> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed, and you will again be asked to:

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

Main Menu

The on line description of the highlighted setup function 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 <**Esc**>.

Control Keys

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item at left
Right arrow	Move to the item at right
Esc key	Main Menu:make a space Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu: Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color to one of 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

2.1 Main Menu

Once you enter AWARD BIOS CMOS Setup Utility, the Main Menu(**Figure 1**) will appear on the screen. The Main Menu allows you to select an item and press <**Enter**> to accept or enter its sub-menu.

■ **Figure 1. Main Menu**

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

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

Standard CMOS Setup

This setup page includes all the items in a standard compatible BIOS.

BIOS Features Setup

This setup page includes all the items for the BIOS special enhanced features.

Chipset Features Setup

This setup page includes all the items for chipset special features.

Power Management Setup

This setup page includes all the items for power management features.

PnP / PCI Configuration

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.

Load Setup Defaults

Chipset defaults indicates the values required by the system for maximum performance. The OEM manufacturer may change to defaults through MODBIN before the binary image burn into the ROM.

Integrated Peripherals

This setup page includes all the items for Integrated Peripherals features.

Supervisor Password / User Password Setting

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

IDE HDD Auto Detection

Automatically configure hard disk parameters.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

2.2 Standard CMOS Setup Menu

The items in the Standard CMOS Setup Menu are divided into categories. Each category includes no, one, or more than one setup item. Use the arrow keys to highlight the item and then use the **<PgUp>** or **<PgDn>** keys to select the value you want in each item.

■ **Figure 2. Standard CMOS Setup Menu**

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

Date (mm:dd:yy) : Thu, Jun 14 1999
Time (hh:mm:ss) : 11 : 37 : 30

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LAND	SECTOR	MODE
Primary Master :	Auto	0	0	0	0	0	0	Auto
Primary Slave :	Auto	0	0	0	0	0	0	Auto
Secondary Master :	Auto	0	0	0	0	0	0	Auto
Secondary Slave :	Auto	0	0	0	0	0	0	Auto

Drive A :1.44MB, 3.5 in.
Drive B :None

Video :EGA/VGA

Halt On :All, But Keyboard

Base Memory :	640K
Extended Memory :	191488
Other Memory :	384K
Total Memory :	1925128

Esc : Quit ↑ ↓ → ← : Select Item PU/PD/+/-:Modify
F1 : Help (Shift) F2 : Change Color

Date

The Date format is **<day><month><date><year>**.

Day	The day, from Sun to Sat, is determined by the BIOS and is display-only
Date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan through Dec

year	The year, from 1994 through 2079

Time

The time format is **<hour><minute><second>**. The time is calculated based on the 24-hour military-time clock. For example, 2 p.m. is 14:00:00.

Hard Disk Type

This categories identifies the types of hard disk(s) that have been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 45 are predefined. Type "User" is user-definable. Type "Auto" is automatically defined by BIOS.

Press **<PgUp>** or **<PgDn>** to select a numbered hard disk type or type the number and press **<Enter>**. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not listed, you can use Type "User" to define your own drive type manually.

If you select type "User", related information is asked to be entered for several items. Enter the information directly from the keyboard and press **<Enter>**. This information should be provided in the documentation from your hard disk vendor or the system manufacturer. Most new drives will also have the parameters given on the label on top of the drive.

CYLN	number of cylinders
HEAD	number of heads
WPCOM	write precom pensation
SEC	number of sectors
LBA MODE	type of LBA mode
BLK MODE	type of Block mode
PIO MODE	type of PIO
32BIT MODE	type of 32-Bit transfer mode

If a hard disk has not been installed select "NOT Installed" and press **<Enter>**.

Drive A Type/Drive B Type

The category identifies the types of floppy disk drive A / drive B that have been installed in the computer.

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

Video

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

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, 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

The category determines whether the computer will stop if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All errors	The system boot will not stop 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 which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for system with 512K memory installed on the motherboard, or 640K for system with 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.

Other Memory

This refers to the memory located in the 640K address space. This is the memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free application programs. The most common use for this area is Shadow RAM.

2.3 BIOS Features Setup

!! WARNING !! **The information about BIOS defaults in the manual** (Figure 3.4.5.6.8) **is just for reference, please refer to the BIOS installed on board, for update information.**

■ **Figure 3. BIOS Features Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warring	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled		
External Cache	: Enabled		
CPU L2 Cache ECC Checking	: Disabled		
Quick Power On Self Test	: Enabled		
Boot From LAN First	: Disabled		
Boot Sequence	: A,C,SCSI		
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Disabled		
Boot Up NumLock Status	: On		
IDE HDD Block Mode	: Enabled		
Gate A20 Option	: Fast		
Memory Parity / ECC Check	: Disabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit ↑ ↓ → ←	: Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values	<Shift> F2 : Color
Report No FDD For WIN 95	: Yes	F7 : Load Setup Defaults	

Virus Warning

This category flashes on the screen. During and after the system boot up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and an error message will appear. In the mean time, you can run an anti-virus program to locate the problem.

Disabled (default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default)	Enable cache
Disabled	Disable cache

External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). Most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

Enabled (default)	Enable cache
Disabled	Disable cache

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC (error check correction). Using 66MHz CPU BUS Deschute processor, set to Enabled or Disabled. 100MHz CPU BUS Deschute processor, always set to Enabled. Klamath processor always set to Disabled.

Quick Power On Self Test

This option enables the level 2 external cache memory.

Enabled (default)	Enable quick POST
Disabled	Normal POST

Boot from LAN First

During Enabled, If there's a LAN card onboard the priority from booting will be from the LAN.

Boot Sequence

This option determines which drive the computer searches the OS at boot-up. The settings are “A, C, SCSI”, “C, A, SCSI”, “C, CDROM, A”, “CDROM, C, A”, “D, A, SCSI”, “E, A, SCSI”, “F, A, SCSI”, “SCSI, A, C”, “SCSI, C, A” or “C only”,etc. **The default is “A, C, SCSI”.**

Swap Floppy Drive

Switches the floppy disk drive between being designated as A and B. **Default is Disabled.**

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 720K, 1.2M, and 1.44M are all 80 tracks.

Enabled (default)	BIOS searches for the floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS cannot tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

The default value is On.

On (default)	Numpad is number keys.
Off	Numpad is arrow keys.

IDE HDD Block Mode

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

Enabled (default)	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

Gate A20 Option

Gate A20 refers to the way the system addresses memory above 1MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

Fast (default)

Memory Parity / ECC Check

This item allows you to select between three methods of memory error checking, Auto, Enabled and Disabled.

Typematic Rate Setting

This determines the typematic rate.

Enabled	Enable typematic rate and typematic delay programming.
Disabled (default)	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these 2 items and the default is controlled by keyboard.

Typematic Rate (Chars/Sec)

6 (default)	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)

Choose the length of delay from the time you press a key and the character repeating. (units are mil-sec)

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

PCI / VGA Palette Snoop

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

Disabled (default)	Disables the function.
Enabled	Enables the function.

OS Selection for DRAM > 64MB

Allows OS/2 to be used with > 64MB of DRAM. Settings are Non-OS/2 (default) and OS/2. Set to OS/2 if using more than 64MB and running OS/2.
DEFAULT is Non-OS2.

Report No FDD for Win 95

This function is only use when you are testing SCT for Windows 95 Logo.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM for faster execution.

Enabled	Optional ROM is enabled.
Disabled (default)	Optional ROM is disabled.

2.4 Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

■ **Figure 4. Chipset Feature Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing	:SDRAM 10ns		
Bank 2/3 DRAM Timing	:SDRAM 10ns		
Bank 4/5 DRAM Timing	:SDRAM 10ns		
SDRAM Cycle Length	:Auto	CPU Warrring Temperature	:Disabled
DRAM Clock	:Host CLK	Current CPU Temperature	:
Memory Hole	:Disabled	Shutdown Temperature	:60℃/140℉
Concurrent PCI/Host	:Enabled	Current System Temp	
Video RAM Cacheable	:Enabled	Current CPUFAN1 Speed	:
AGP Aperture Size	:64M	Vcore : xxV	:
OnChip USB	:Enabled	+3.3V : +xxV	
Onboard PCI Sound Chip	:Enabled	+5.0V :+xxV	
		+12.0V:+xxV	
		-12.0V :-xxV	
		ESC : Quit ↑ ↓ → ← : Select Item	
		F1 : Help PU/PD/+/- : Modify	
		F5 : Old Values <Shift> F2 : Color	
		F7 : Load Setup Defaults	

Bank 0/1, 2/3, 4/5 DRAM Timing

This value in this field is set by the system board manufacturer, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.

The Choice: Bank 0/1, 2/3, 4/5.

SDRAM Cycle Length

This item allows you to set the SDRAM Latency Timer. The Choice:2, 3, Auto

DRAM Clock

This item determines DRAM Clock following the CPU host clock, or 66MHz..

Memory Hole

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

Enabled	Memory hole supported.
Disabled (default)	Memory hole not supported.

Concurrent PCI / Host

This item allows PCI masters for both PCI or CPU buses active at same time to have optimal system performance.

Video RAM Cacheable

The default value is 1.

Disabled	Disable this function.
Enabled (default)	Enable this function to get better VGA performance; while some brands of VGA must be disabled this function (e.g.ET4000W32P)

AGP Aperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

The Choice: 4M, 8M, 16M, 32M, 64M (default), 128M, 256M.

OnChip USB

Select Enabled if your system contains a Universal Serial Bus(USB) Controller and you have a USB peripheral.

The Choice: Enabled (default), Disabled.

Onboard PCI Sound Chip

This item allows you detemine to use the function of PCI Sound chip built on board.

Enabled (default)

Current CPU Temperature

Detect CPU Temperature automatically. If there is no Hardware Monitor IC, then next item will not show.

Shutdown Temperature (℃/°F)

(This function will be effective only for the operating systems that support ACPI Function.)
The default value is 60℃/140°F

Disabled	Normal Operation
60℃/140°F(default)	Monitor CPU Temp. at 60℃/140°F, if Temp. > 60℃/140°F system will automatically power off.

Current CPUFAN1 Speen

Detect CPU Fan speed status automatically.

Current CPU Vcore +3.3V ,±12V, +5V

Detect system's voltage status automatically.

2.5 Power Management Setup

■ **Figure 5. Power Management Setup Menu**

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

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM2)	: Primary
Video Off Option	: Suspend ->Off	IRQ4 (COM1)	: Primary
Video Off Method	: DPMS	IRQ5 (LPT2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-Off by PWRBIN	: Instant-Off	IRQ7 (LPT1)	: Primary
PWRON After PW-Fail	: Former-Sts	IRQ8 (RTC Alarm)	: Disabled
HDD Power Down	: Disabled	IRQ9 (IRQ2 Readir)	: Secondary
Doze Mode	: Disabled	IRQ10 (Reserved)	: Secondary
Suspend Mode	: Disabled	IRQ11 (Reserved)	: Secondary
		IRQ12 (PS/2 Mouse)	: Primary
** PM Events **		IRQ13 (Coprocessor)	: Primary
VGA	: OFF	IRQ14 (Hard Disk)	: Primary
LPT & COM	: LPT / COM	IRQ15 (Reserved)	: Disabled
HDD & FDD	: ON		
DMA / master	: OFF		
Wake Up On LAN	: Disabled	ESC : Quit ↑ ↓ → ← : Select Item	
Modem Ring Resume	: Disabled	F1 : Help PU/PD/+/- : Modify	
RTC Alarm Resume	: Disabled	F5 : Old Values <Shift> F2 : Color	
		F7 : Load Setup Defaults	

Power Management

Disable (Min. Saving)	Global Power Management will be disabled.
User Define (Max. Saving)	Users can configure their own power management.
Min Saving	Pre-defined timer values are used such that all timers are at their MAX value.
Max Saving	Pre-defined timer values are used such that all timers are at their MIN value.

PM Control by APM

No	System BIOS will ignore APM when Power Management is on.
Yes (default)	System BIOS will wait for APM's prompt before it enters any PM mode.

Video Off Option

Selects the power-saving modes during which the monitor goes blank:

Always On	Monitor remains on during power-saving modes.
Suspend→ Off (default)	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.
Blank Screen	System only writes blanks to the video buffer.

Video Off Method

Blank Screen	The system BIOS will only blank the screen when disabling video.
V/HSYNC+Blank	In addition to the above, BIOS will also turn off the V-SYNC & H-SYNC signals from VGA card to monitor.
DPMS	This function is enabled only for a VGA card supporting DPMS.

MODEM Use IRQ

Set the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

3 (default)

Soft-Off by PWRBIN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung.".

The Choices: Delay 4 Sec, Instant-Off (default)

PWRON After PW-Fail

AC Power Supply provides power for whole system. ATX Power Supply "ON" and "OFF" can be controlled by motherboard. It is saved in south bridge chipset CMOS area are 3 sources provide current save this area; Mother board battery (3V), Power Supply (5VSB), Power Supply (3.3V). Before AC power cables not plug in, CMOS use motherboard (3V). After AC power connects in and Power Supply not open, CMOS use 5VSB in this mean time. Later, when we power ON Power Supply, CMOS use 3.3V.

Whit above controlled function CMOS, there CMOS 3 options which we can select from BIOS setup: "Formor-Sts", "On", "Off". "Formor-Sts" means follow last status of CMOS setting when AC power lost; failed "On", "Off". "Formor-Sts" means follow last status of CMOS setting when AC power lost; failed. "On" means always set CMOS in "On" status when AC power lost; failed. "Off" means always set CMOS in "Off" status when AC power lost; failed. For example: BIOS setup to "Formor-Sts". If AC power lost when system in power on "status, then after AC power retrieved, system will automatic power on. If AC power lost when system in "power off" status, then after AC power retrieved, system will still in power off status.

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.

Disabled (default)
Enabled

Doze Mode

This option specifies how long the CPU is continuously idle before entering the doze mode. When the system is in Doze mode, the screen will be blank.

Suspend Mode

This options allows the user to indicate how long the system will be idle before entering the suspend mode, which turns off the CPU and saves the energy of the system

HDD Power Down

After the selected period of drive inactivity, the hard disk drive powers down while all other devices remain active.

Disabled (default)

VGA

When Enabled, any video activity restarts global timer for Standby mode.

Disabled (default)

LPT & COM

When Enabled, any LPT&COM activity restarts global timer for Standby mode.

Disabled (default)

HDD & FDD

When Enabled, any HDD&FDD activity restarts global timer for Standby mode.

Disabled (default)

DMA / master

When set to On (default), any event occurring to the DMA controller will awaken a system which has been powered down.

Wake Up On LAN

To use this function, you need a LAN add-on card which support power on functions. It should also support the wake-up on LAN jumper.

Disabled (default) Wake up on LAN not supported.

Modem Ring Resume

When set to Enabled, any event occurring to the Modem Ring will awaken a system which has been powered down.

RTC Alarm Resume

This function is for setting date and time for your computer to boot up.
During Disabled, you cannot use this function.

Primary INTR

When set to On (default), any event occurring at will awaken a system which has been powered down.

The following is a list of IRQ's, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operforms system is ready to respond to request, it interrupts itself and performs the service.
As above, the choices are On and Off. Off is the default.

When set On, activity will neither prevent the system form going into a power management mode nor awaken it.

IRQ3 (COM2)
IRQ4 (CON1)
IRQ5 (LPT2)
IRQ6 (Floppy Disk)
IRQ7 (LPT1)
IRQ8 (RTC Alarm)
IRQ9 (IRQ2 Redir)
IRQ10 (Reserved)
IRQ11 (Reserved)
IRQ12 (PS2/Mouse)
IRQ13 (Coprocessor)
IRQ14 (Reserved)
IRQ15 (Reserved)

2.6 PNP / PCI Configuration Setup

■ **Figure 6. PNP / PCI Configuration Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
PNP / PCI FUNCTION SETUP
AWARD SOFTWARE, INC.

PNP OS Installed		: No	CPU to PCI Write Buffer	: Enabled
Resources Controlled BY		: Manual	PCI Dynamic Bursting	: Enabled
Reset Configuration Data		: Disabled	PCI Master 0 WS Write	: Enabled
			PCI Delay Transation	: Enabled
IRQ-3	assigned to	: PCI / ISA PnP	AGP Master 1 WS Write	: Enabled
IRQ-4	assigned to	: PCI / ISA PnP	AGP Master 1 WS Read	: Disabled
IRQ-5	assigned to	: PCI / ISA PnP		
IRQ-7	assigned to	: PCI / ISA PnP	PCI IRQ Actived By	: Level
IRQ-9	assigned to	: PCI / ISA PnP	Assign IRQ for VGA	: Enabled
IRQ-10	assigned to	: PCI / ISA PnP	Assign IRQ for USB	: Enabled
IRQ-11	assigned to	: PCI / ISA PnP		
IRQ-12	assigned to	: PCI / ISA PnP		
IRQ-14	assigned to	: PCI / ISA PnP		
IRQ-15	assigned to	: PCI / ISA PnP		
DMA-0	assigned to	: PCI / ISA PnP		
DMA-1	assigned to	: PCI / ISA PnP	ESC : Quit ↑↓→← : Select Item	
DMA-3	assigned to	: PCI / ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-5	assigned to	: PCI / ISA PnP	F5 : Old Values	<Shift> F2 : Color
DMA-6	assigned to	: PCI / ISA PnP	F7 : Load Setup Defaults	
DMA-7	assigned to	: PCI / ISA PnP		

PnP OS Installed

When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows™95. When set to NO, BIOS will initialize all the PnP cards. Therefore for non-PnP operating system (DOS, Netware™), this option must set to "NO".

Resources Controlled By "Auto" or "Manual"

By Choosing "Auto" the system BIOS will detect the system resource and automatically assign the relative IRQ and DMA channel for each peripheral.
By Choosing "Manual"(default), the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O ports conflict.

Resources Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and protect resources from conflict. Every peripheral device has a node which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS.
If Disabled (default) is chosen, the system's ESCD will update only when the new configuration varies from the last one.
If Enabled is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

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
IRQ-9	assigned to : PCI / ISA PnP
IRQ-10	assigned to : PCI / ISA PnP
IRQ-11	assigned to : PCI / ISA PnP
IRQ-12	assigned to : PCI / ISA PnP
IRQ-14	assigned to : PCI / ISA PnP
IRQ-15	assigned to : PCI / ISA PnP
DMA-0	assigned to : PCI / ISA PnP
DMA-1	assigned to : PCI / ISA PnP
DMA-3	assigned to : PCI / ISA PnP
DMA-5	assigned to : PCI / ISA PnP
DMA-6	assigned to : PCI / ISA PnP
DMA-7	assigned to : PCI / ISA PnP

The above settings will be shown on the screen only if "Manual" is chosen for the Resources Controlled By function.

Legacy is the term which signifies that a resource is assigned to the ISA Bus and provides for non PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

CPU to PCI Write Buffer

When enabled, up to four D word of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data..

The choice : Enabled (default), Disabled.

PCI Dynamic Burstin

When Enabled, data transfers on the PCI bus, where possible, make use of the high-performance PCI bust protocol, in which greater amounts of data are transferred at a single command..

The choice : Enabled (default), Disabled.

PCI Master 0 WS Write

When Enabled, writes to the PCI bus are command with zero wait states.
The choice : Enabled (default), Disabled.

PCI Delay Transation

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

The choice: Enabled (default), Disabled.

AGP Master 1 WS Write

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

The choices: Enabled (default), Disabled.

AGP Master 1 WS Read

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

The choices: Enabled (default), Disabled.

PCI IRQ Actived By

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system's manufacturer.

The choice : Level (default), Edge.

Assign IRQ For VGA

Lets the user choose which IRQ to assign for VGA card.

Assign IRQ For USB

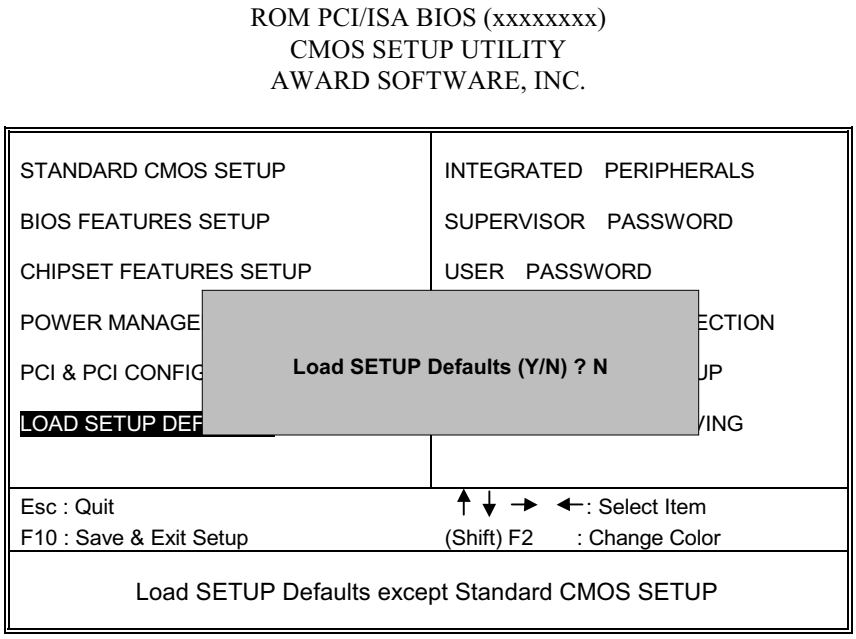
Set to Enabled when USB port will be used. Set to Disable if the USB port will not be used.

Enabled (default)	Assign a specific IRQ for USB.
Disabled	No IRQ is assigned for USB.

2.7 Load Setup Defaults

Chipset defaults indicate the values required by the system for maximum performance.

■ **Figure 7. Load Setup Defaults Screen**



If you wish to load the SETUP Defaults, change the prompt to <**Y**> and press <**ENTER**>.

2.8 Integrated Peripherals Setup

■ **Figure 8. Integrated Peripherals Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

On Chip IDE Channel 0	: Enabled	Parallel Port Mode	: SPP
On Chip IDE Channel 1	: Enabled		
IDE Prefetch Mode	: Enabled		
Primary Master PIO	: Auto		
Primary Slare PIO	: Auto		
Secondary Master PIO	: Auto		
Secondary Slave PIO	: Auto		
Primary Master UDMA	: Auto		
Primary Slave UDMA	: Auto		
Secondary Master UDMA	: Auto		
Secondary Slave UDMA	: Auto		
Init Display First	: AGP		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3	ESC : Quit ↑ ↓ → ← : Select Item	
UART2 Mode	: Standard	F1 : Help PU/PD/+/- : Modify	
		F5 : Old Values <Shift> F2 : Color	
		F7 : Load Setup Defaults	
Onboard Parallel Port	: 378/IRQ7		

OnChip IDE Channel 0

This chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the first and/or second IDE interface. Select Disabled to deactivate this interface, if you install a first and/or second add-in IDE interface IDE interface.

OnChip IDE Channel 1

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

Enabled (default)

IDE Prefetch Mode

Enable prefetchung for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit the IDE subsystem, this field may not appear, and it does not appear, when the Internal PCI/IDE filed, above, is Disabled.

The choices : Enabled (default), Disabled.

Primary Master PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

Primary Slave PIO

The default value is Auto.

Auto BIOS will automatically detect the IDE HDD Accessing mode.

Secondary Master PIO

The default value is Auto.

Auto BIOS will automatically detect the IDE HDD Accessing mode.

Secondary Slave PIO

The default value is Auto.

Auto BIOS will automatically detect the IDE HDD Accessing mode.

Primary Master UDMA

The default value is Auto.

Auto BIOS will automatically detect the IDE HDD Accessing mode.

Primary Slave UDMA

The default value is Auto.

Auto BIOS will automatically detect the IDE HDD Accessing mode.

Secondary Master UDMA

The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.

Secondary Sleve UDMA

The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.

Init Display First

This item allows you to decide to active PCI Slot or AGP first.

The choice : PCI Slot, AGP (default).

Onboard FDC Controller

Enabled / Disabled The system has an onboard Super I/O chip with a FDD controller that supports 2 FDDs for 360K / 720K / 1.2M / 1.44M / 2.8M. Choose "Enabled" to use the onboard FDD controller for accessing the FDD. Otherwise choose "Disabled" to use the off-board FDD controller.

Onboard Serial Port 1

Disabled / (3F8 / IRQ4) / (2F8 / IRQ3) / (3E8 / IRQ4) / (2E8 / IRQ3)

Onboard Serial Port 2

Disabled / (3F8 / IRQ4) / (2F8 / IRQ3) / (3E8 / IRQ4) / (2E8 / IRQ3)
The system has an Onboard Super I/O chipset with 2 serial ports.
The Onboard serial ports can be selected as:

Disabled	
3F8 / IRQ4	COM1 uses IRQ4
2F8 / IRQ3	COM2 uses IRQ3
3F8 / IRQ4	COM3 uses IRQ4
2F8 / IRQ3	COM4 uses IRQ3

UART2 Mode

This item allow you to determine which Infra Red(IR) function of onboard I/O chip.

Onboard Parallel Port

Disabled	There is a built-in parallel port on the on-board Super I/O
(3BCH/IRQ7)	Chipset that provides Standard, ESP, and EPP features.
(278H/IRQ5)	It has the following options:
Disable	3BCH/IRQ7 Line Printer port 0 278H/IRQ5 Line Printer port 2 378H/IRQ5 Line Printer port 1

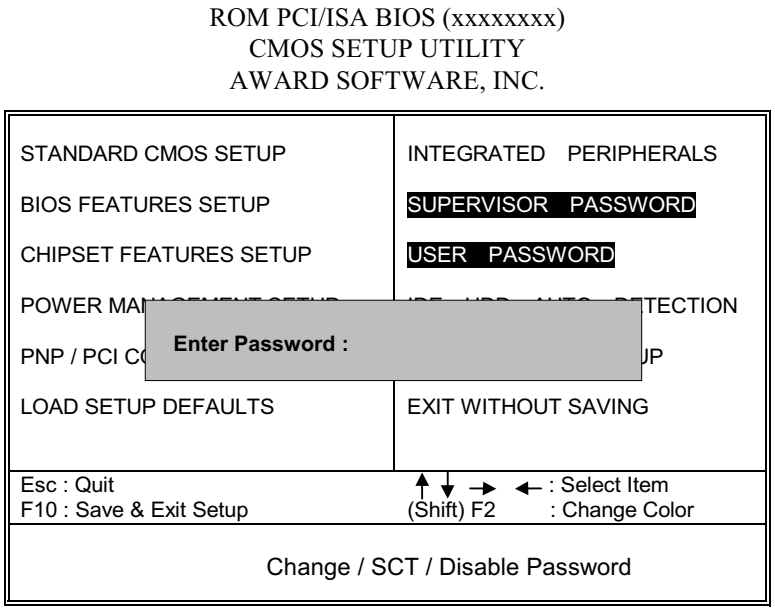
Parallel Port Mode

SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port

To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the ECP and SPP modes simultaneously, choose "ECP/SPP." By choosing "ECP" the onboard parallel port will operate in ECP mode only. Choosing "ECP/EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use a DMA channel so choose the onboard parallel port with the ECP feature. After selecting it the following message will appear: "ECP Mode Use DMA". At this time the user can choose between DMA channels 3 or 1. The onboard parallel port is EPP Spec. Compliant so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "Parallel port EPP Type." At this time either EPP 1.7 spec. Or EPP 1.9 spec. Can Be chosen.

2.9 Supervisor / User Password Setting

■ **Figure 9. Supervisor Password Setting**



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, and press <**Enter**>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <**Enter**>. You may also press <**ESC**> to abort the selection and not enter a password. To disable password, just press <**Enter**> when you are prompted to enter password. A message will confirm that you wish to disable the password. Once the password is disabled, the system will boot and you can enter setup freely.

PASSWORD DISABLED

If you select "System" at the Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select "Setup" at Security Option of BIOS Feature Setup Menu, you will be prompted only when you try to enter Setup.

2.10 IDE HDD Auto Detection

Automatically configure hard disk parameters. The parameters shown below are only examples.

- **Figure 10. Auto Configuration with Optimal Settings Screen**

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

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LAND	SECTOR	MODE
Primary Master	:User	343	665	16	65535	664	63	NORMAL

Select Primary Slave Option (N=Skip) N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1(Y)	0	0	0	0	0	0	NORMAL

Note : Some Oses (like SCO-UNIX) must use “NORMAL” for installation

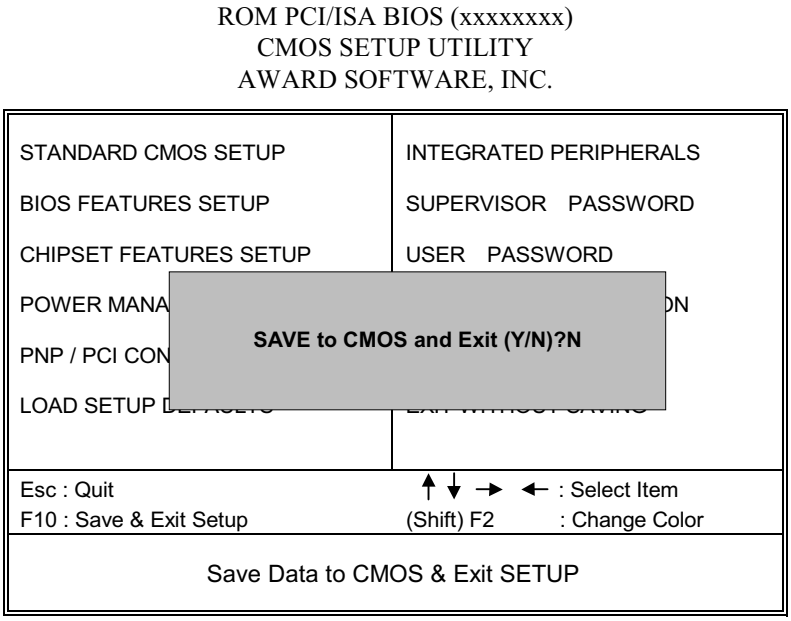
ESC : Skip

When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter **“Y”** to confirm and then press <**Enter**> to check next hard disk. This function allows you to check four hard disks and you may press the <**Esc**> after the <**Enter**> to exit this function and go back to the Main Menu.

2.11 Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

■ **Figure 11. Save & Exit Setup Screen**



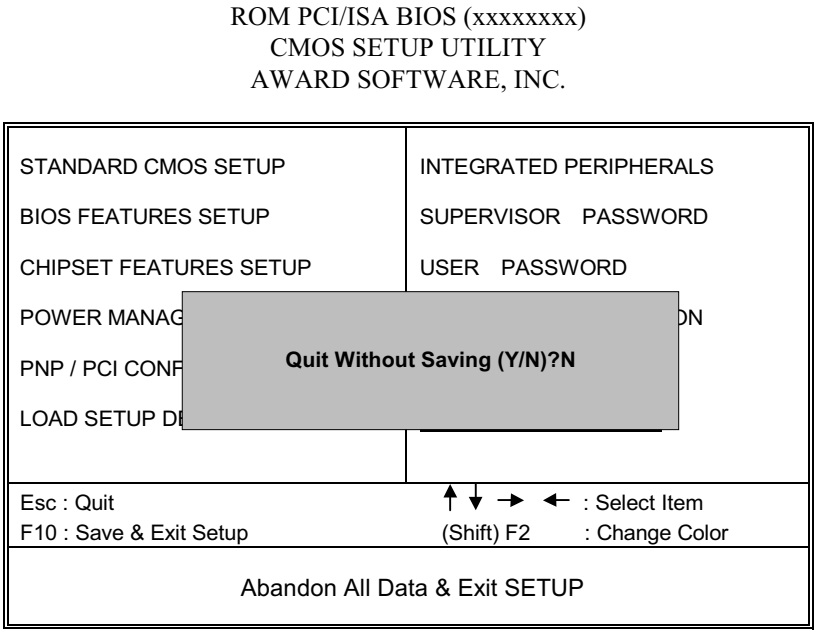
Pressing **<N>** and **<ENTER>** will return you to the Main Menu.

Pressing **<Y>** and **<ENTER>** will save the system parameters and continue with the booting process.

2.12 Exit Without Saving

Abandon all CMOS value changes and exit setup.

■ **Figure 12. The Save Settings and Exit Screen**



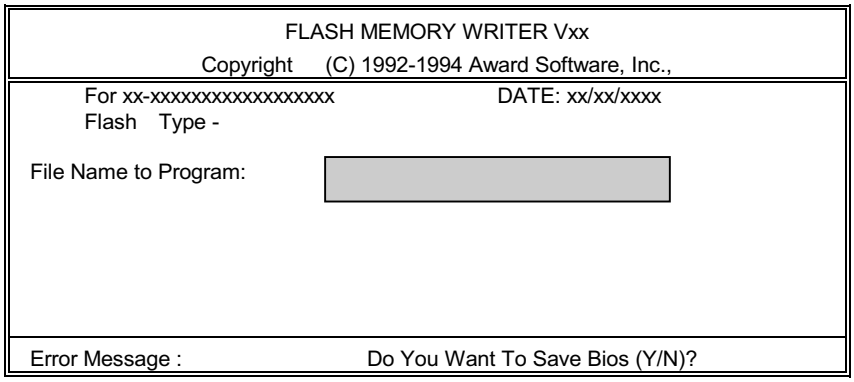
Pressing **<N>** and **<ENTER>** will return you to the Main Menu.

Pressing **<Y>** and **<ENTER>** will continue with booting process without saving any system parameters.

2.13 Application Software

– Please use the "BIOS Utility" diskette to setup Flash Memory.
– The diskette contains the intelligent installation utility **AWDFLASH.EXE**, displayed below.

■ **Figure 13. Flash Memory Writer**



3. Driver Setup

3.1 ESS Solo-1 (on-board) Software

3.1.1 Software List

NOTE: The mark * means it can be installed directly from CD by using CD Installation Utility (i.e. START.EXE).

Drivers

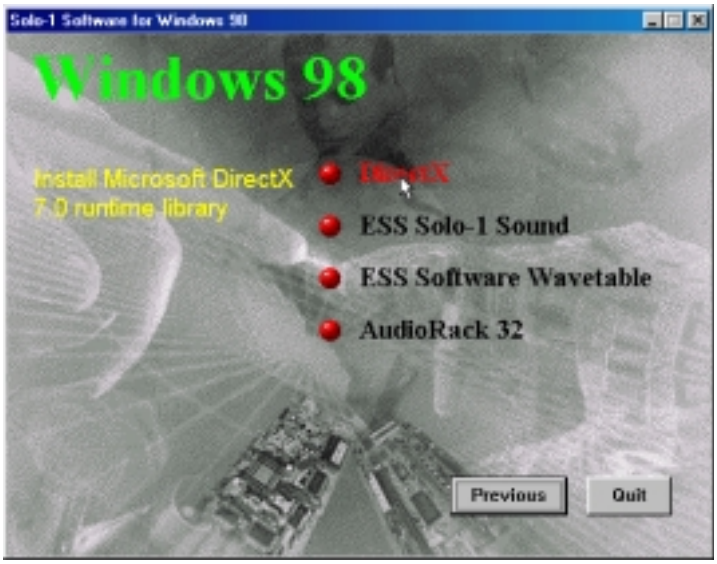
Category	Location in CD
Windows 95 / 98 *	\Solo1\Win9x
Windows NT 4.0 *	\Solo1\WinNT40
Windows 2000	\Solo1\WinNT50

Applications

Name	Location in CD	Platform
AudioRack 32 *	\Solo1\Arakp311	Windows 95 / 98

3.1.2 Software Installation

There is an installation wizard, **Driver CD Installation Utility** (START.EXE), located in the root of the CD to let users install drivers directly and conveniently.



Note: The above figure is for example. The options and layout of interface may be changed in next versions of Driver CD.

3.1.3 Using Software

- **Using AudioRack 32**
  After the AudioRack 32 Software Installation completed, please refer to Readme.txt and On-line Help come with AudioRack 32 for the detailed information before using AudioRack 32.

3.2 Motherboard Software

NOTE: The mark * means it can be installed directly from CD by using CD Installation Utility (i.e. START.EXE).

3.2.1 Software List

Category	Description	Platform	Location in CD
VIA IRQ Routing Miniport Patch *	Used for enable PCI bus IRQ Steering function.	Windows 95/98	\Mb_drv\Nirq
Chipset Function' Registry Utility *	Used for patching Windows 95's Registry System to let Windows 95 recognizes new devices.	Windows 95	\Mb_drv\Registry
VIA AGP VxD Driver *	Install the drivers to support AGP Interface VGA Card	Windows 95/98	\Mb_drv\Agp
HighPoint Xstore Pro *	Install the drivers to support Ultra DMA mode Hard Drive	Windows 95/98	\Mb_drv \XStore
VIA Bus Master IDE Drivers *	Install the drivers to support Ultra DMA mode Hard Drive	Windows NT 4.0	\Mb_drv\Ide
Award Flash Utility	Used for updating BIOS. (Please refer to chapter 2.13 Application Software.)		\Flash

3.2.2 Software Installation

There is an installation wizard, **Driver CD Installation Utility** (START.EXE), located in the root of Driver CD to let users install some common used drivers conveniently.

Note: The above figure is for example. The options and layout of interface may be changed in next versions of Driver CD.

- **The drivers can be installed from CD by using CD Installation Utility:**
  You can simply put Driver CD into CD-ROM drive and the Installation Utility will autorun or you can run the Driver CD Installation Utility directly by using mouse cursor to click the proper option on the page. Utility will invoke other applications to complete the rest of installation.

- **The drivers CAN NOT be installed directly from CD by using CD Installation Utility:**
  Please read the README.TXT located in the root directory on Multimedia CD to get drivers' location and then refer to the INSTALL.TXT or README.TXT files located in each driver directory on the Driver CD to install drivers.

3.2.3 Using Software

In general, you can get more detailed information in the on-line help or readme for the softwares.

4. Troubles hooting

PROBLEM

No power to the system at all. Power light does not illuminate, fan inside power supply does not turn on. Indicator light on keyboard does not turn on.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Power cable is unplugged.	Visually inspect power cable	Make sure power cable is securely plugged in
Defective power cable.	Visually inspect the cable; try another cable.	Replace cable.
Power supply failure.	Power cable and wall socket are OK, but system is still dead.	Contact technical support.
Faulty wall outlet; circuit Breaker or fuse blown.	Plug in device known to work in socket and test	Use different socket, repair outlet, reset circuit breaker or replace fuse.

PROBLEM

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is spinning.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Memory DIMM is partially dislodged from the slot on the motherboard.	Turn off computer. Take cover off system unit. Check the DIMM to ensure it is securely seated in the slots.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

PROBLEM

System does not boot from hard disk drive, can be booted from ROM drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Connector between hard drive and system board unplugged.	When attempting to run the FDISK utility you get a message, INVALID DRIVE SPECIFICATION.	Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.
Damaged hard disk or disk controller.	Format hard disk; if unable to do so the hard disk may be defective.	Contact technical support.
Hard disk directory or FAT is scrambled.	Run the FDISK program, format the hard drive (see HARD DRIVE section of manual). Copy data that was backed up onto hard drive.	Backing up the hard drive is extremely important. All hard disk are capable of breaking down at any time.

PROBLEM

System only boots from CD-ROM. Hard disk can be read and applications can be used but booting from Hard Disk is impossible.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Hard disk boot program has been destroyed.	A number of causes could be behind this.	Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

PROBLEM

Error message reading "SECTOR NOT FOUND" or other error messages not allowing certain data to be retrieved.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
A number of causes could be behind this.	Use a filebyfile backup instead of an image backup to backup the hard disk.	Back up any salvageable data. Then lowlevel format, partition, and highlevel format the hard drive. Re-install all saved data when completed.

PROBLEM

Screen message says "Invalid Configuration" or "CMOS Failure."

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Incorrect information entered into the configuration (setup) program.	Check the configuration program. Replace any incorrect information.	Review system's equipment . Make sure correct information is in setup.

PROBLEM

Screen is blank.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
No power to monitor.		Check the power connectors to monitor and to system. Make sure monitor is connected to display card.
Monitor not connected to computer.		See instructions above.

PROBLEM

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Memory problem.		Reboot computer. Reinstall memory, make sure that all memory modules are installed in correct sockets.
Computer virus.		Use anti-virus programs to detect and clean viruses.

PROBLEM

Screen goes blank periodically.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Screen saver is enabled.		Disable screen saver.

PROBLEM

Keyboard failure.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keyboard is disconnected.		Reconnect keyboard. Check keys again, if no improvement replace keyboard.

PROBLEM

No color on screen.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Faulty Monitor.		If possible, connect monitor to another system. If no color replace monitor.
CMOS incorrectly set up.		Call technical support.

PROBLEM

C: drive failure.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Hard drive cable not connected properly.		Check hard drive cable.

PROBLEM

Cannot boot system after installing second hard drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Master/slave jumpers not set correctly.		Set master/slave jumpers correctly.
Hard drives not compatible / different manufacturers.		Run SETUP program and select correct drive types. Call drive manufacturers for compatibility with other drives.

PROBLEM

Missing operating system on hard drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
CMOS setup has been changed.		Run setup and select correct drive type.

PROBLEM

Certain keys do not function.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keys jammed or defective.		Replace keyboard.

PROBLEM

Keyboard is locked, no keys function.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keyboard is locked.		Unlock keyboard

10/21/1999
MADE IN TAIWAN
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