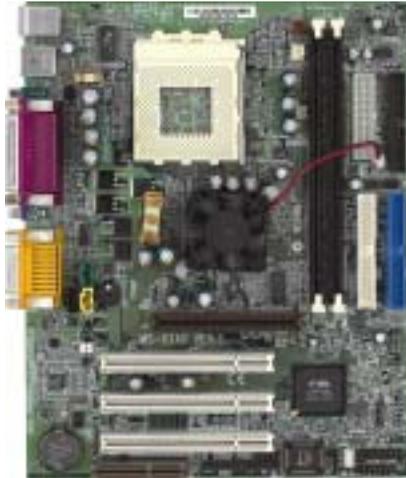


MSI

MICRO-STAR INTERNATIONAL

MS-6340M Micro-ATX Mainboard



Version 5.0
G52-MA00449

Manual Rev: 5.0
Release Date: September 2001



FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

**VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER
AU RESEAU.**



Edition

September 2001

Copyright Notice

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Revision History

Revision	Revision History	Date
5.0	First Release for PCB5.X	September 2001

Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. **DO NOT COVER THE OPENINGS.**
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
 - The power cord or plug is damaged
 - Liquid has penetrated into the equipment
 - The equipment has been exposed to moisture
 - The equipment has not work well or you can not get it work according to User's Manual.
 - The equipment has dropped and damaged
 - If the equipment has obvious sign of breakage
12. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60⁰ C (140⁰F), IT MAY DAMAGE THE EQUIPMENT.**



CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

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Introduction

1

Thank you for purchasing the MS-6340M (v5.X) Micro-ATX motherboard. The mainboard, based on **VIA® KM133A (VT8365A & VT82C686B)** chipset, is a high-performance computer mainboard designed for AMD® Duron™/Athlon™/Athlon XP processor in the 462 pin package that provides a cost-effective, high energy efficient and high quality desktop platform solution.

This chapter includes the following topics:

Mainboard Features	1-2
Mainboard Layout	1-4
Quick Components Guide	1-5

Chapter 1

Mainboard Features

CPU

- Socket A for AMD® PGA Duron™/Athlon™/Athlon XP processor
- Supports 800MHz~1.4GHz or higher processor

Chipset

- VIA® KM133A VT8365A chipset (552 BGA)
 - FSB @200MHz/266MHz
 - AGP 4x and PCI Advanced high performance memory controller
 - Supports PC100/133 SDRAM technology
- VIA® VT82C686B chipset (352 BGA)
 - Enhanced Power Management Features
 - Integrated Super I/O (FDC, LPT, COM 1, VGA and IR)
 - Dual bus Master IDE Ultra DMA33/66/100
 - Integrated Hardware Sound Blaster
 - Direct Sound AC97 Audio
 - ACPI
 - Supports 4 USB Ports

Clock Generator

- 100MHz/133MHz clocks are supported. (200MHz/266MHz Internal System Bus)

Main Memory

- Supports four memory banks using two 168-pin unbuffered DIMM
- Supports a maximum memory size of 1GB (32M x 8)
- Supports 3.3v SDRAM DIMM

Slots

- One AGP (Accelerated Graphics Port) slot
 - AGP specification compliant
 - Supports AGP 2.0 1x/2x/4x
- One CNR (Communication Network Riser) slot
- Three 32-bit Master PCI Bus slots
- Supports 3.3v/5v PCI bus Interface

On-Board IDE

- An IDE controller on the VIA® VT82C686B chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66/100 operation modes.
- Can connect up to four IDE devices

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
 - 1 serial port & 1 VGA port
 - 1 parallel port supports SPP/EPP/ECP mode
 - 4 USB ports (2 Rear Connectors/USB Front Pin Header)
 - 1 IrDA connector for SIR/CIR/FIR/ASKIR/HPSIR
 - 1 Audio/Game port

Audio

- Chip Integrated
 - Direct Sound AC97 Audio

BIOS

- The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.

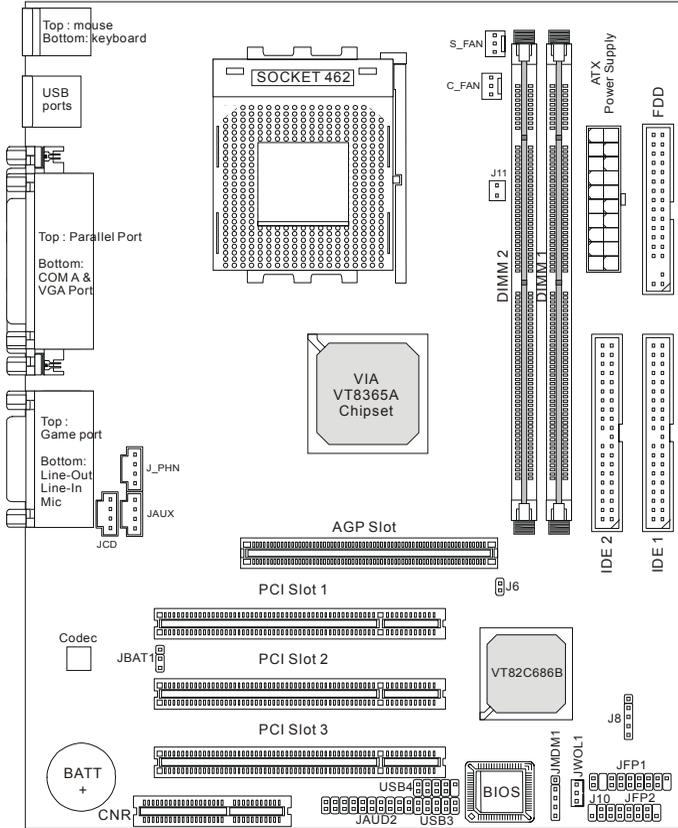
Dimension

- Micro ATX Form Factor: 19.2cm x 24.4cm

Mounting

- 6 mounting holes

Mainboard Layout



MS-6340M (V5.X) Micro-ATX Mainboard

Quick Components Guide

Component	Function	Reference
DIMM1~2	Installing SDRAM modules	See p. 2-4~2-5
Socket 462	Installing CPU	See p. 2-2~2-3
C_FAN	Connecting to CPUFAN	See p. 2-14
S_FAN	Connecting to SYSTEM FAN	See p. 2-14
ATX Power Supply	Installing power supply	See p. 2-7
IDE1 & IDE2	Connecting to IDE hard disk drive	See p.2-18
FDD	Connecting to floppy disk drive	See p.2-17
USB3 & USB4	Connecting to USB interfaces	See p. 2-22
PCI Slot 1~3	Installing expansion cards	See p. 2-29
AGP Slot	Installing AGP cards	See p. 2-29
CNR Slot	Installing expansion cards	See p. 2-29
JMDM1	Connecting to modem module	See p. 2-21
JWOL1	Connecting to LAN card	See p. 2-20
JBAT1	Clearing CMOS data	See p. 2-27
JFP1 & JFP2	Connecting to case	See p. 2-15
J8 & J10	Connecting to IR modules	See p. 2-19
JAUD2	Connecting to audio connector	See p. 2-24
J11	Connecting to chipset's fan	See p. 2-26
J6	Setting CPU FSB frequency	See p. 2-28

Hardware Setup

2

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

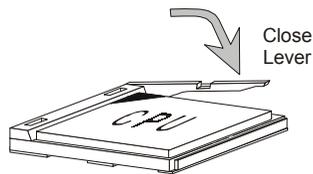
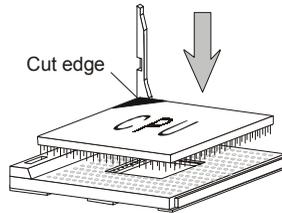
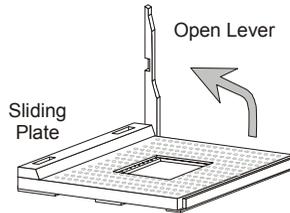
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Memory	2-4
Power Supply	2-7
Back Panel	2-8
Connectors	2-14
Jumpers	2-27
Slots	2-29

Central Processing Unit: CPU

The mainboard operates with **AMD® Duron™/Athlon™/Athlon XP processor**. The mainboard uses a CPU socket called Socket 462 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

CPU Installation Procedures

1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.
2. Look for the cut edge. The cut edge should point towards the lever pivot. The CPU will only fit in the correct orientation.
3. Hold the CPU down firmly, and then close the lever to complete the installation.



WARNING!

Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

CPU Core Speed Derivation Procedure

The mainboard CPU bus frequency can be set through BIOS setup.

If	CPU Clock	= 100MHz
	Core/Bus ratio	= 7
then	CPU core speed	= Host Clock x Core/Bus ratio
		= 700MHz



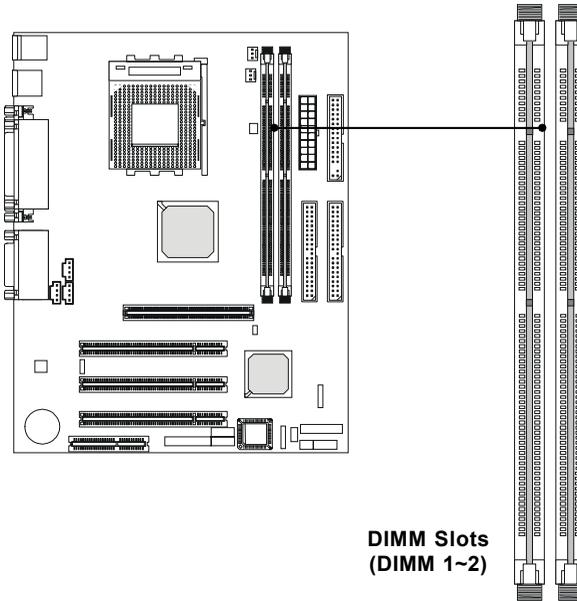
WARNING!

Overclocking

*This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Memory

The mainboard supports a maximum memory size of 1 GB. It provides two 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets.



**DIMM Slots
(DIMM 1~2)**

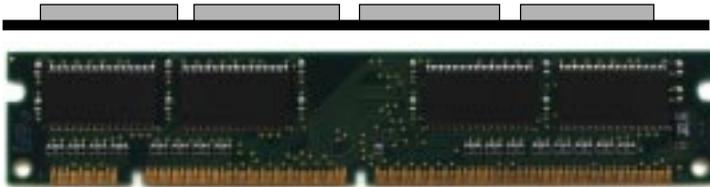


WARNING!

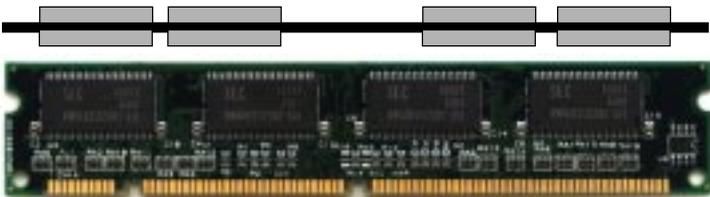
There are two kinds of DIMM specifications supported by this mainboard: PC133 and PC100. If you use 100MHz CPU Bus Frequency, you can use PC100 or PC133 DIMM Spec. If you use 133 MHz CPU bus frequency, only PC133 DIMM Spec is recommended.

Memory Installation Procedures

A. How to install a DIMM Module

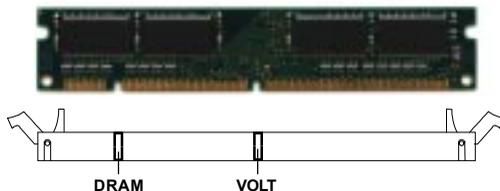


Single Sided DIMM



Double Sided DIMM

1. The DIMM slot has 2 Notch Keys “VOLT and DRAM”, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.



3. The plastic clip at each side of the DIMM slot will automatically close.

Chapter 2

Memory Population Rules

1. Supports only SDRAM DIMM.
2. To operate properly, at least one 168-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM 1 or DIMM 2 in any order.
4. Supports 3.3 volt DIMM.
5. The single-/double-sided memory modules supported by each DIMM slot are shown below:

SDRAM DIMM Module Combination

Socket	Memory Module	Total Memory
DIMM 1 (Bank0 & Bank1)	S/D	32MB ~ 512MB
DIMM 2 (Bank2 & Bank3)	S/D	32MB ~ 512MB
Maximum System Memory Supported		32MB ~ 1GB

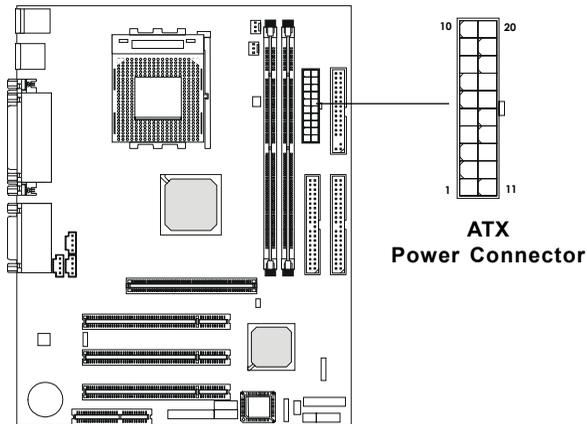
S (Single Side)

D (Double Side)

Power Supply

ATX 20-pin Power Connector: JWR1

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported by this mainboard. This power connector supports instant power on function which means that system will boot up instantly when the power connector is inserted on the board.



PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

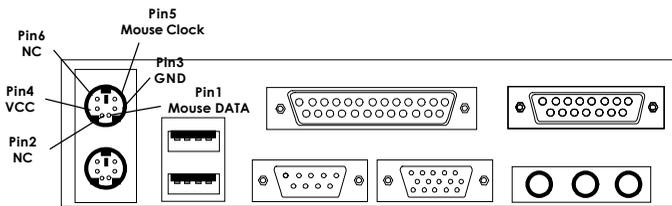


Warning: Since the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power connector to ensure that no damage will be done.

Back Panel

Mouse Connector: JKBMS1

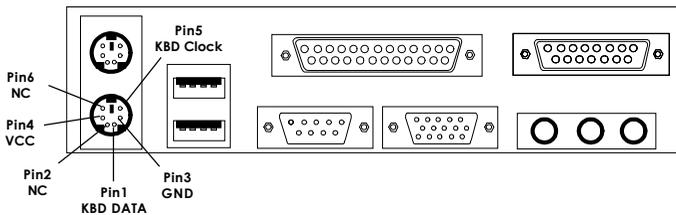
The mainboard provides a standard PS/2[®] mouse mini DIN connector for attaching a PS/2[®] mouse. You can plug a PS/2[®] mouse directly into this connector. The connector location and pin definition are shown below:



PS/2 Mouse (6-pin Female)

Keyboard Connector: JKBMS1

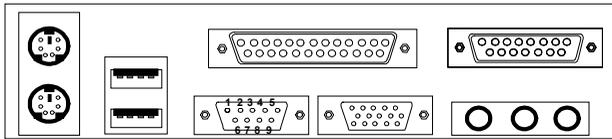
The mainboard provides a standard PS/2[®] keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



PS/2 Keyboard (6-pin Female)

Serial Port Connector: COM A

The mainboard provides one 9-pin male DIN connector for serial port COM A. The port is 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



COM A

Serial Port (9-pin Male)

PIN DEFINITION

PIN	SIGNAL
1	DCD (Data Carry Detect)
2	SIN (Serial In or Receive Data)
3	SOUT (Serial Out or Transmit Data)
4	DTR (Data Terminal Ready)
5	GND
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicate)

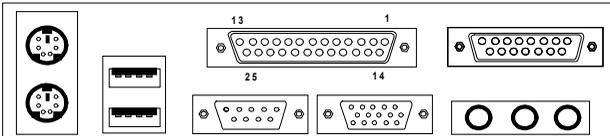
Chapter 2

Parallel Port Connector: LPT1

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended capabilities Parallel Port (ECP). See connector and pin definition below:

Parallel Port (25-pin Female)

LPT 1

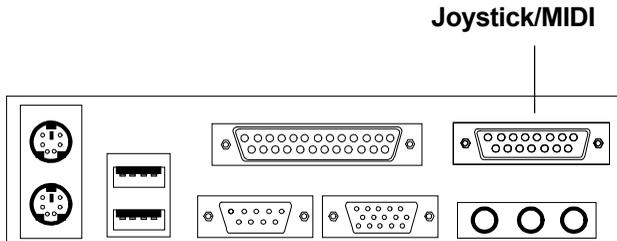


PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	STROBE	14	AUTO FEED#
2	DATA0	15	ERR#
3	DATA1	16	INIT#
4	DATA2	17	SLIN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

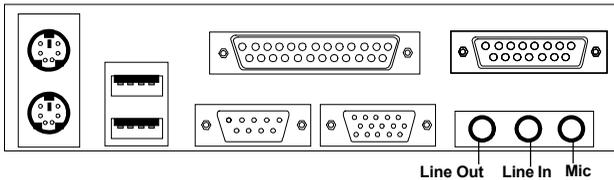
Joystick/Midi Connectors

You can connect joystick or game pad to this connector.



Audio Port Connectors

Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape layer, or other audio devices. **Mic** is a connector for the microphones.

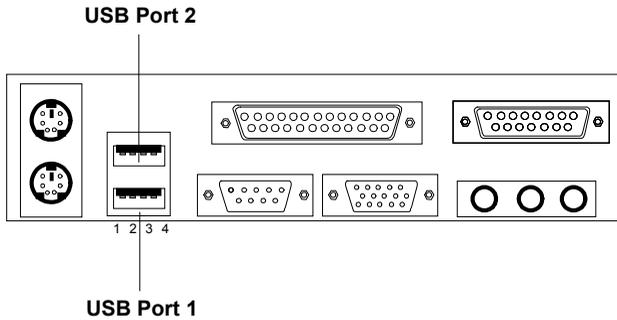


1/8" Stereo Audio Connectors

Chapter 2

USB Connectors

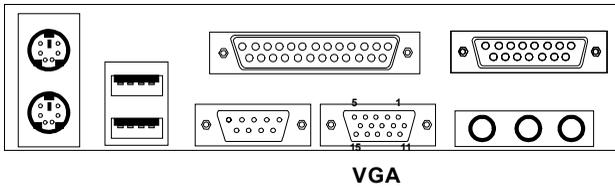
The mainboard provides a **UHCI(Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



PIN	SIGNAL
1	VCC
2	-Data
3	+Data
4	GND

VGA DB 15 Pin Connector

The mainboard provides a DB 15-pin connector to connect to a VGA monitor.

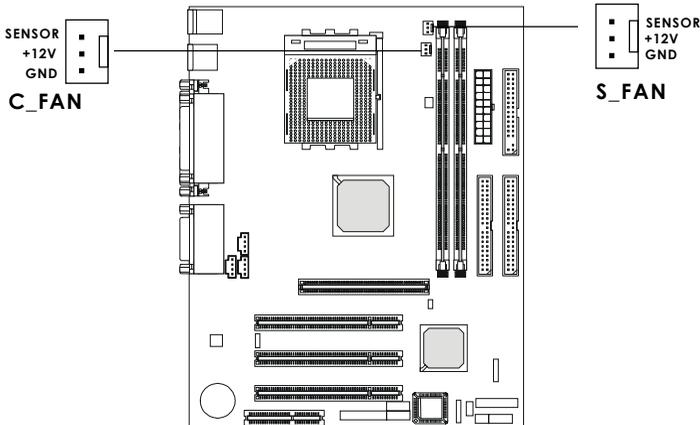


Analog Video Display Connector(DB15-S)	
Pin	Signal Description
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Power
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Connectors

Fan Power Connectors: C_FAN/S_FAN

These connectors support system cooling fan with +12V. It supports three pin head connector. When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.



C_FAN: Processor Fan

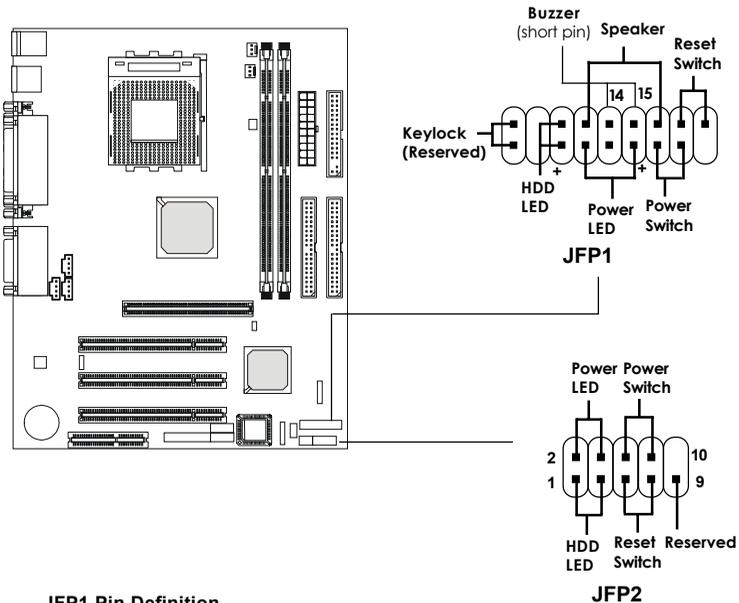
S_FAN: System Fan

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

Note: 1. Always consult vendor for proper CPU cooling fan.
2. CPU FAN supports the FAN control. You can install PC Alert utility. This will automatically control the CPU FAN Speed according to the actual CPU temperature.

Case Connectors: JFP1 & JFP2

The Keylock (reserved), Power Switch, Reset Switch, Power LED, Speaker, and HDD LED are all connected to the JFP1 connector block. The other case connector block **JFP2 is compliant to Intel Front Panel I/O Connectivity Design Guide** and can connect to the the Power Switch, Reset Switch, Power LED and HDD LED on the case.



JFP1 Pin Definition

Pin	Description	Pin	Description
1	Keylock	10	Keylock
2	NC	11	NC
3	HDD_LED+	12	HDD_LED-
4	GND	13	CASE_SPK
5	PWR_LED Y	14	CASE_SPK
6	PWR_LED G	15	CASE_SPK
7	PWR_SW+	16	CASE_SPK
8	PWR_SW-	17	RESET+
9	NC	18	RESET-

JFP2 Pin Definition

Pin	Description	Pin	Description
1	*HDD_LED+	2	PWR_LED G
3	HDD_LED-	4	PWR_LED Y
5	RESET-	6	PWR_SW+
7	RESET+	8	PWR_SW-
9	RSVD_DNU	10	NC

* Hard disk LED pullup (330 ohm) to +5V

Chapter 2

Power Switch

Connect to a 2-pin push button switch.

Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

PowerLED

The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin.

Speaker (JFP1)

Speaker from the system case is connected to this pin.

HDDLED

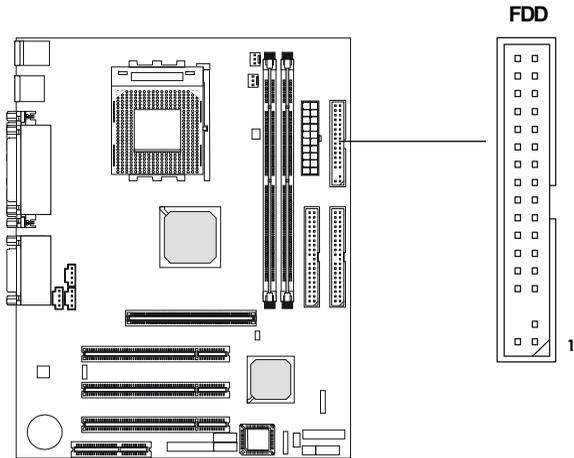
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD LED is lit. You can connect the HDD LED from the system case to this pin.

Keylock (JFP1)

Keylock allows you to disable the keyboard for security purpose. You can connect the keylock to this connector.

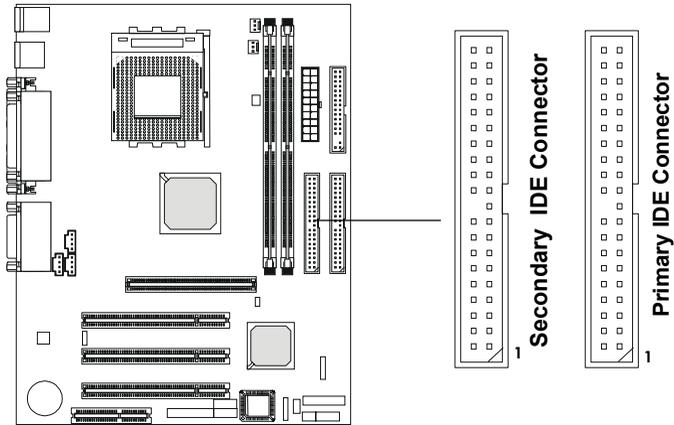
Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector FDD which supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



Hard Disk Connectors: IDE1 & IDE2

The mainboard uses an IDE controller on the Intel® ICH2 chipset that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 modes. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the provided IDE hard disk cable.



IDE1 (Primary IDE Connector)

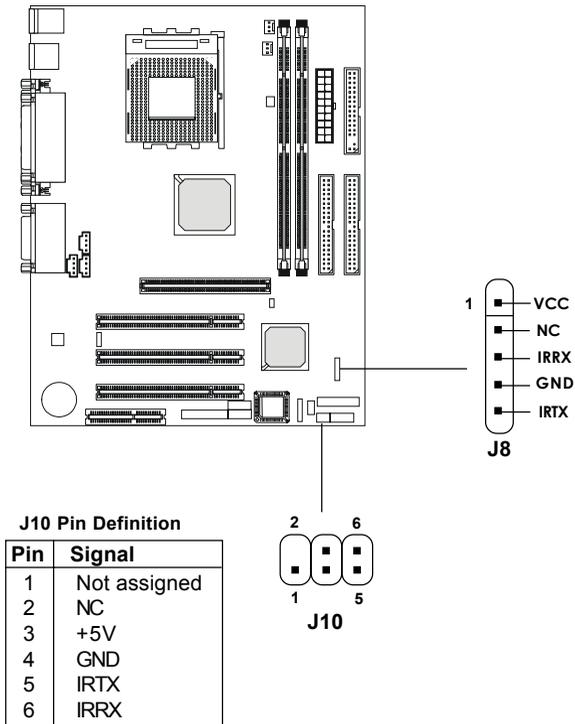
The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

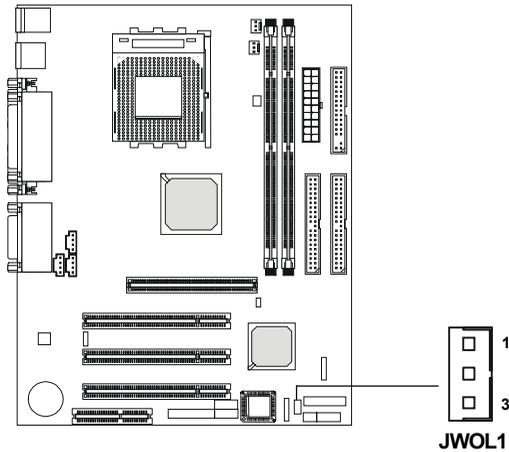
IrDA Infrared Module Connectors: J8 & J10

The mainboard provides two infrared connectors (J8 & J10) for IR modules. **J10 is compliant to Intel Front Panel I/O Connectivity Design Guide.** These connectors are for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function. To use this function, you need to enable the Wake-Up on LAN function in the BIOS setup utility.



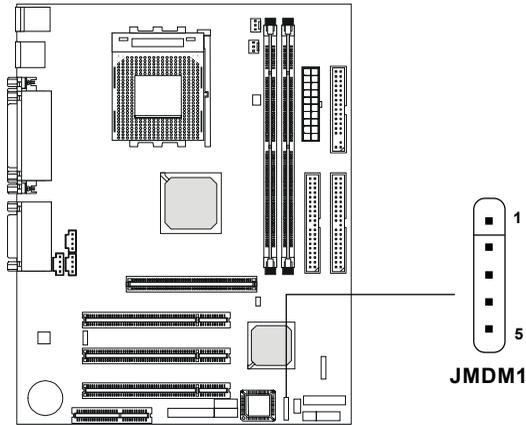
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active “high”.

Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)

Modem Wake Up Connector: JMDM1

The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function. To use this function, you need to enable Wake-Up on Ring function in the BIOS setup utility.



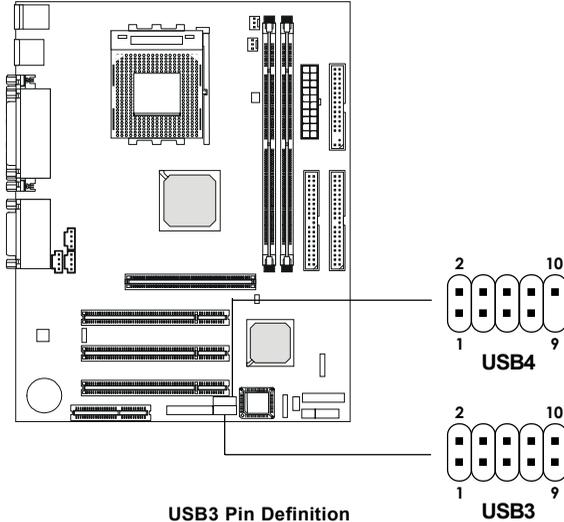
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

Note: Modem wake-up signal is active “low”.

Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)

USB Front Connectors: USB3 & USB4

The mainboard provides two **front Universal Serial Bus connectors**. You can connect optional USB connectors for Front Panel. **USB4 is compliant to Intel Front Panel I/O Connectivity Design Guide.**



USB3 Pin Definition

Pin	Description	Pin	Description
1	VCC	6	USBD2+
2	GND	7	GND
3	USBD3-	8	USBD2-
4	GND	9	GND
5	USBD3+	10	VCC

USB4 Pin Definition

Pin	Description	Pin	Description
1	VCC	6	USBD3+
2	VCC	7	GND
3	USBD2-	8	GND
4	USBD3-	9	NC
5	USBD2+	10	USB_FP_OC0

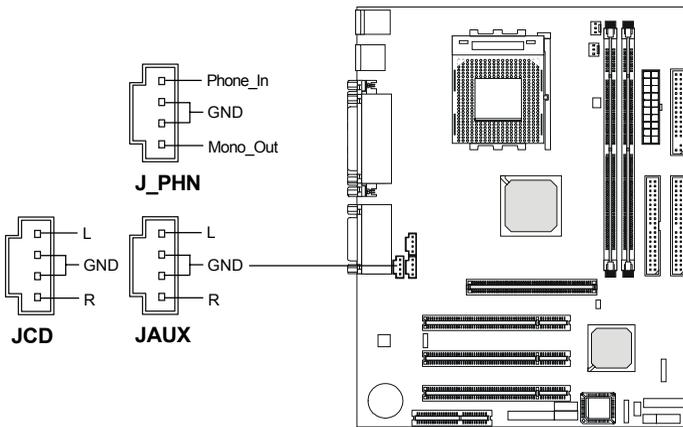
*USB_FP_OC0 is Front Panel USB Overcurrent signal (Ports 2 & 3)

CD-In/AUX Line-In/Modem-In Connector: JCD/JAUX/J_PHN

JCD connector is for CD-ROM audio connector.

JAUX connector is used for DVD Add on Card with Line In connector.

J_PHN connector is for Modem with internal voice connector.

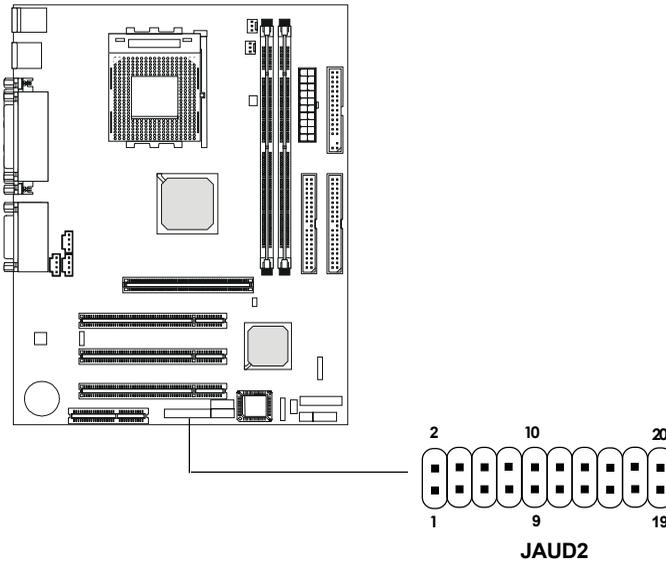


Mono_Out is connected to the Modem Speaker Out connector.

Phone_In is connected to the Modem Microphone In connector.

Front Panel Audio Connector: JAUD2

You can connect an optional audio connector to the Front Panel Audio Header. **Pin number 1 to 10 of the audio pin header is compliant to Intel Front Panel I/O Connectivity Design Guide.**



JAUD2 Pin Definition (1~10)

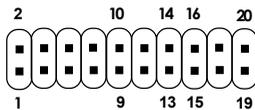
Pin	Signal	Description
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal Return from Front Panel
7	HP_ON	RSVD for future use to control Headphone Amplifier
8	NC	No Connection
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

JAUD2 Pin Definition (11~20)

Pin	Signal	Description
11	AUD_MIC	Front Panel Microphone input signal
12	AUD_GND	Ground used by Analog Audio Circuits
13	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
14	AUD_RET_R	Right Channel Audio signal Return from Front Panel
15	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
16	AUD_RET_L	Left Channel Audio signal Return from Front Panel
17	AUD_GND	Ground used by Analog Audio Circuits
18	NC	No Connection
19	LINE-IN-R	Line in Right
20	LINE-IN-L	Line in Left

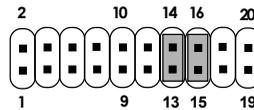


Note: To have the Line-out connector on the back panel work properly, you need to place the jumper on the pin# 13~16 of the JAUD2 connector. Otherwise, this Line-out connector will not function and nothing can be heard through speakers or headphones attached to the connector. But MSI front panel audio connector is enabled at this time and allows you to connect speakers or headphones.



(Open)

- Disable Line-out connector on the back panel
- Enable MSI Front Panel Audio Connector



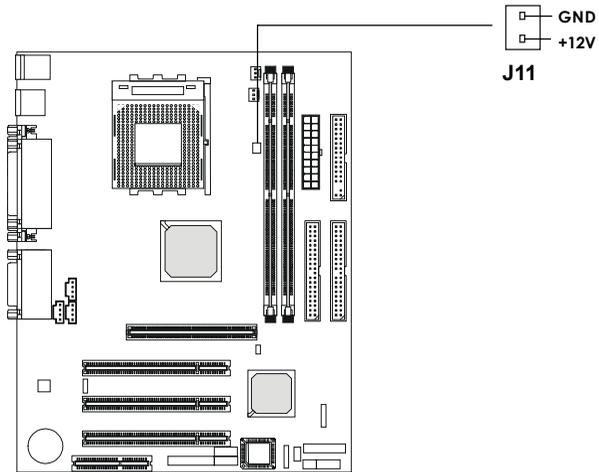
(Short)

- Enable Line-out connector on the back panel
- Disable MSI Front Panel Audio Connector

Chapter 2

Chipset FAN Power Connector: J11

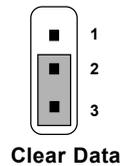
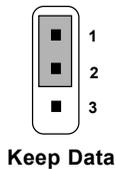
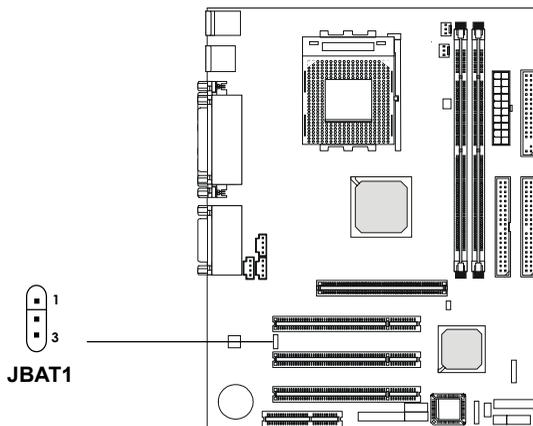
You can connect the fan installed on top of the chipset to the connector for power supply.



Jumpers

Clear CMOS Jumper: JBAT1

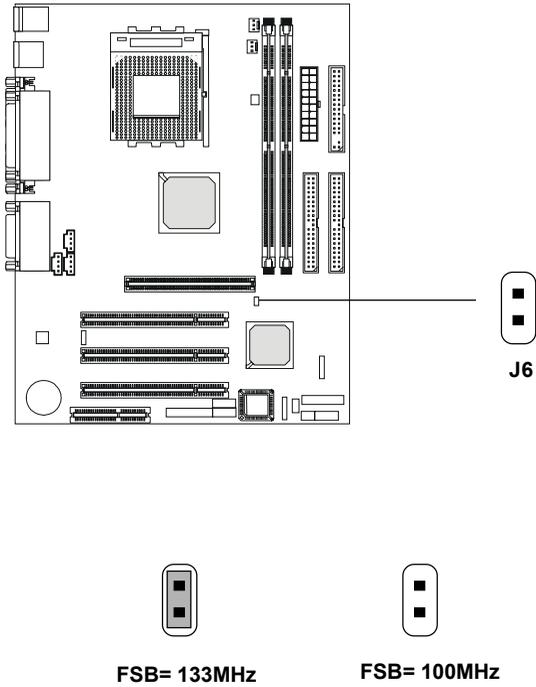
A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT1 to store the CMOS data.



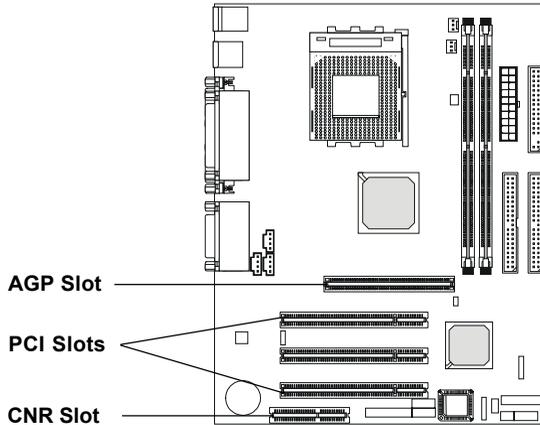
Note: You can clear CMOS by shorting 2-3 pin, while the system is off. Then, return to 1-2 pin position. Avoid clearing the CMOS while the system is on, it will damage the mainboard. Always unplug the power cord from the wall socket.

CPU FSB Frequency Jumper: J6

This jumper is used to specify the CPU FSB (Front Side Bus) frequency.



Slots



AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory and provides three levels of throughputs: 1x (266Mbps), 2x (533Mbps) and 4x (1.07Gbps).

PCI Slots

Three PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

CNR (Communication Network Riser) Slot

The Communication Network Riser specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which **supports audio and modem only**.

Chapter 2

PCI Interrupt Request Routing

The IRQ, abbreviation of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The “AGP/PCI” IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows:

	Order 1	Order 2	Order 3	Order 4
AGP	INT A#	INT B#		
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#

AGP & PCI Slot 1 shared.

PCI Slot 1~3: Bus Master

AWARD® BIOS Setup

3

The mainboard uses AWARD® BIOS ROM that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off.

The chapter contains the following topics:

Entering Setup	3-2
Getting Help	3-2
The Main Menu	3-3
Standard CMOS Features	3-5
Advanced BIOS Features	3-7
Advanced Chipset Features	3-11
Integrated Peripherals	3-16
Power Management Setup	3-20
PnP/PCI Configurations	3-26
Frequency/Voltage Control	3-28
Load Fail-Safe/Optimized Defaults	3-29
Set Supervisor/User Password	3-30

Entering Setup

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

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

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <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 TO ENTER SETUP

Getting Help

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>.

The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the 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
› Frequency/Voltage Control	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

Standard CMOS Features

Use this Menu for basic system configurations.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Chapter 3

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Set Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. 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.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Standard CMOS Setup

Date(mm:dd:yy):	Fri,May 5,2000	Item Help
Time(hh:mm:ss):	00:00:00	
IDE Primary Master	Press Enter27326MB	Menu Level >
IDE Primary Slave	Press Enter None	
IDE Secondary Master	Press Enter None	
IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All, But Keyboard	
Based Memory	640K	
Extended Memory	64512K	
Total Memory	1024K	
↑↓ →← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Date

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

- Day** Day of the week, from Sun to Sat, determined by BIOS. Read-only.
- Month** The month from Jan. through Dec.
- Date** The date from 1 to 31 can be keyed by numeric function keys.
- Year** The year can be adjusted by users.

Chapter 3

Time

The time format is <hour> <minute> <second>.

PrimaryMaster/PrimarySlave

SecondaryMaster/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. 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 matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be “None”.

If the controller of HDD interface is CD-ROM, the selection shall be “None”.

Access Mode	The settings are Auto, Normal, Large,LBA.
Cylinder	number of cylinders
Head	number of heads
Precomp	write precom
Landing Zone	landing zone
Sector	number of sectors

Advanced BIOS Features

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced BIOS Features

Anti-Virus Protection	Disabled	Item Help	
CPU Internal Cache	Enabled		
External Cache	Enabled	Menu Level >	
CPU L2 Cache ECC Checking	Enabled		
Quick Power On Self Test	Disabled		
First Boot device	Floppy		
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		
Gate A20 Option	Normal		
Typeomatic Rate Setting	Disabled		
x Typeomatic Rate (Chars/Sec)	6		
x Typeomatic Delay (Msec)	250		
Security Option	Setup		
APIC Mode	Enabled		
MPS Version Control For OS	1.1		
OS Select for DRAM > 64MB	Non-OS2		
Video BIOS Shadow	Enabled		
C8000-CBFFF Shadow	Disabled		
CC000-CFFFF Shadow	Disabled		
D0000-D3FFF Shadow	Disabled		
D4000-D7FFF Shadow	Disabled		
D8000-DBFFF Shadow	Disabled		
DC000-DFFFF Shadow	Disabled		
Full Screen LOGO Show	Enabled		
↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults			

Anti-Virus Protection

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep.

Disabled

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.

Chapter 3

CPU Internal Cache

Enabled Enable cache

Disabled Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC (error check correction).

Quick Power On Self Test

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

Enabled Enable quick POST

Disabled Normal POST

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B.

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 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

On Keypad is numeric keys.

Off Keypad is arrow keys.

Gate A20 Option

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

Settings: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down. Settings: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke. Settings: 250, 500, 750, 1000.

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.

APIC Mode

This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance to PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQs resources for the system. Settings: Enabled/Disabled.

Chapter 3

MPS Version Control For OS

This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system. Settings: *1.4* and *1.1*.

OS Selection for DRAM > 64MB

Allows OS2[®] to be used with > 64 MB of DRAM. Settings are Non-OS/2 and OS/2. Set to OS/2 if using more than 64MB DRAM and running OS/2[®].

Video BIOS Shadow

This item sets if the Video BIOS will be copied to RAM and increase video speed accordingly. Settings: Enabled/Disabled.

C8000-CBFFF/CC000-CFFFF/D0000-D3FFF/D4000-D7FFF/D8000-DBFFF/DC000-DFFFF Shadow

These items specify whether the contents of the adapter ROM named in the items will be copied into RAM to improve the performance of ROM firmware for adapters. You need to know the address of each adapter ROM occupies to shadow (copy) it into the correct area of RAM. Settings: Enabled/Disabled.

Full Screen LOGO Show

This item enables you to show the company logo on the bootup screen.

Settings are:

- | | |
|----------|--|
| Disabled | Shows the POST messages at boot. |
| Enabled | Shows a still image (logo) on the full screen at boot. |

Advanced Chipset Features

The Advanced 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.

Choose the “ADVANCED CHIPSET FEATURES” from the Main Menu and the following screen will appear.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced Chipset Features

Bank Interleave	Enabled	Item Help
DRAM Timing by SPD	Yes	
SDRAM CAS Latency	Auto	Menu Level >
DRAM Clock	Auto	
Memory Hole	Disabled	
P2C/C2P Concurrency	Enabled	
Fast R-W Turn Around	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Frame Buffer Size	8M	
AGP Aperture Size	64M	
AGP-4X Mode	Enabled	
xAGP Driving Control	Auto	
AGP Driving Value	DA	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
OnChip Sound	Auto	
OnChip Modem	Auto	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Enabled	
PCI Master 0 WS Write	Enabled	
PCI Delay Transaction	Enabled	
PCI#2 Access #1 Retry	Disabled	
AGP Master 1 WS Write	Enabled	
AGP Master 1 WS Read	Enabled	
Memory Parity/ECC Check	Disabled	
↑↓ → ← Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Note: Change these settings only if you are familiar with the chipset.

Bank Interleave

If you set this item to Enabled, BIOS will set the bank interleave in 2 way or 4 way based on the configuration of SPD EEPROM.

DRAM Timing by SPD

If the setting is set to “Yes”, the BIOS will set “SDRAM CAS Latency” and “DRAM Clock” to follow the SPD configuration of memory modules automatically. If the setting is set to “No”, you can change the settings of “SDRAM CAS Latency” and “DRAM Clock” as you want.

SDRAM CAS Latency

The option controls the CAS latency, which determines the timing delay before SDRAM starts a read command after receiving it. Settings: Auto, 2, 3 (clock cycles). 2 increases system performance while 3 provides more stable system performance. Auto allows BIOS to determine the best CAS latency length.

DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DIMM clock.

HostCLK	DIMM clock equal to host clock
HostCLK+33M	DIMM clock equal to 133MHz

If you install the CPU with 133MHz FSB, the item will not appear in the BIOS.

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	Memory hole not supported.

P2C/C2P Concurrency

This item allows you to enable or disable the PCI to CPU, CPU to PCI concurrency.

Fast R-W Turn Around

This item controls the DRAM timing. It allows the user to enable or disable the fast read, write turn around. Settings: Enabled/Disabled.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Settings: Enabled/Disabled.

Video RAM Cacheable

Selecting Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Settings: Enabled/Disabled.

Frame Buffer Size

This item allows you to adjust on board frame buffer size from 4MB, 8MB, 16MB to 32MB.

AGP Aperture Size

Select the size of the 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.

AGP-4X Mode

This item is used to enable or disable the AGP support for AGP 4x mode.

AGP Driving Control

This item allows you to adjust the AGP driving force. Choose Manual to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system.

AGP Driving Value

This item allows you to adjust the AGP driving force.

Chapter 3

OnChip USB

Set this option to enable or disable the onchip USB controller.

USB Keyboard Support

Set this option to enable or disable the USB keyboard/mouse support.

OnChip Sound

This item allows you to control the onboard AC 97 audio.

OnChip Modem

This item allows you to control the onboard MC 97 Modem.

CPU to PCI Write Buffer

When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another cycle.

PCI Dynamic Bursting

This item allows you to enable or disable the PCI dynamic bursting function. Settings: Enabled/Disabled.

PCI Master 0 WS Write

When set to Enabled, writes to the PCI bus are executed with zero wait state.

PCI Delay Transaction

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

PCI#2 Access #1 Retry

When Disabled, PCI#2 will not be disconnected until access finishes. When Enabled, PCI#2 will be disconnected if max retries are attempted without success.

AGP Master 1 WS Write

When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait state.

AGP Master 1 WS Read

When Enabled, reads to the AGP (Accelerated Graphics Port) are executed with one wait state.

Memory Parity/ECC Check

This item, when enabled, detects the memory parity and Error Checking & Correction.

Integrated Peripherals

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Integrated Peripherals

Onchip IDE Channel0	Enabled	Item Help
Onchip IDE Channel1	Enabled	
IDE Prefetch Mode	Enabled	Menu Level >
Primary Master PIO	Auto	
Primary Slave 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	
IDE HDD Block Mode	Enabled	
Onboard FDD Controller	Enabled	
Onboard Serial Port 1	Auto	
UART 2 Mode	Disable	
x IR Function Duplex	Half	
x TX,RX inverting enable	No, Yes	
Onboard Parallel Port	378/IRQ7	
Onboard Parallel Mode	Normal	
x ECP Mode Use DMA	3	
x Parallel Port EPP Type	EPP 1.9	
Onboard Legacy Audio	Enabled	
Sound Blaster	Disabled	
SB I/O Base Address	220H	
SB IRQ Select	IRQ 5	
SB DMA Select	DM1	
MPU-401	Disabled	
MPU-401 I/O Address	330-333H	
Game Port (200-207H)	Enabled	
↑↓→← Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Onchip IDE Channel0/Onchip IDE Channel1

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

IDE Prefetch Mode

This item is used to enable or disable the IDE Read/Write Prefetch buffer. This buffer is used to store data for faster performance.

Primary/Secondary Master/Slave 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. Settings: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA Mode implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, 66 or 100, select Auto to enable BIOS support. Settings: Auto and Disabled.

Init Display First

This item allows you to decide to activate the VGA device on the PCI Slot or AGP Slot. Settings: PCI Slot and AGP Slot.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. Settings: Enabled/Disabled.

Onboard FDD Controller

Select Enabled if your system has a floppy disk controller (FDD) installed on the system board and you wish to use it. If you install add-on FDC or the system has no floppy drive, select Disabled in this field. Settings: Enabled/Disabled.

Onboard Serial Port 1

Select an address and corresponding interrupt for the first serial port. Settings: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled and Auto.

Chapter 3

UART 2 Mode

This item allows you to select the operation mode for the Onboard Serial Port 2 if any. Settings: Disable, Standard, HPSIR and ASKIR.

IR Function Duplex

This item allows you to select the IR half/full duplex function.

TX, RX inverting enable

This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.

Onboard Parallel Port

There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

Disable

3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

Onboard Parallel 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 the 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: “EPP

Mode Select.” At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode. The settings are 3 or 1.

Parallel Port EPP Type

Select EPP port type 1.7 or 1.9.

Onboard Legacy Audio

This fields controls the onboard legacy audio.

- Sound Blaster
- SB I/O Base Address
- SB IRQ Select
- SB DMA Select
- MPU-401
- MPU-401 I/O Address
- Game Port (200-207H)

Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Power Management Setup

ICPA Function	Enabled	Item Help
▶ Power Management	Press Enter	
ACPI Sleep Type	S1(POS)	
PM Control by APM	Yes	
Video Off Option	Suspend->Off	
Video Off Method	V/H SYNC+Blank	Menu Level >
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
State After Power Failure	Off	
CPU Fan In Suspend	On	
LED In Suspend	Blink	
▶ Wake Up Events	Press Enter	
↑ ↓ ← → Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

ICPA Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). Settings: Enabled/Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are three selections for Power Management, two of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr., and Doze Mode = 1 hr.
Max. Power Saving	Maximum power management — Suspend Mode = 1 min., and Doze Mode = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min.

ACPI Sleep Type

This item specifies the power saving mode for ACPI function. If your operating system supports ACPI, such as Windows 98SE, Windows ME and Windows 2000, you can choose to enter the Standby mode in S1(POS) or S3 (STR) fashion through the setting of this field. Options are:

<i>S1(POS)</i>	The S1 sleep mode is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system context.
<i>S3(STR)</i>	The S3 sleep mode is a power-down state in which power is supplied only to essential components such as main memory and wake-capable devices and all system context is saved to main memory. The information stored in memory will be used to restore the PC to the previous state when an “wake up” event occurs.

PM Control by APM

No	System BIOS will ignore APM when power managing the system.
Yes	System BIOS will wait for APM's prompt before it enters any PM mode

Note : Enable this for O.S. with APM like Windows® 98, Windows® NT, etc.

Video Off Option

The settings are Always On, Suspend and All Modes. This option is for choosing the setting in which the monitor will be turned off.

- Always On** Always turn on.
- Suspend** During Suspend mode, the monitor will be turned off.
- All Modes** The monitor is turned off during Doze, Standby or Suspend mode.

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 and write blanks to the video buffer.
- Blank Screen** This option only writes blanks to the video buffer.
- DPMS** Initial display power management signaling.

Modem Use IRQ

This determines the IRQ which the MODEM can use. Settings: 3, 4, 5, 7, 9, 10, 11 and NA.

Soft-Off by PWRBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. Settings: Delay 4 Sec, Instant-Off.

State After Power Failure

This option will determine how the system will power on after a power failure.

CPU Fan In Suspend

Selecting On will enable the CPU Fan to stop after the system enters the suspend mode. Settings: On, Off.

LED In Suspend

This item sets how the system uses Power LED on the case to indicate the suspend/sleep state. Settings are:

- Blinking* The Power LED blinks to indicate the suspend state.
- Single* The Power LED remains the same color.
- Dual* The Power LED changes its color to indicate the suspend state.

Wake Up Events

VGA	Off	Item Help
LPT & COM I/O ACCESS	LPT/COM	
HDD & FDD I/O ACCESS	On	Menu Level >
PCI Master	Off	
Power On by PCI Card	Disabled	
Wake Up On LAN/Ring	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	0:0:0	
IRQs Wake Up Event	ON	
▶ IRQs Activity Monitoring	Press Enter	
↓ → ← Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

VGA

When ON, you can set the VGA to awaken the system.

LPT & COM I/O Access

The settings are NONE, LPT, COM and COM/LPT. You can set which port is used to wake up the system when there is any activity detected from one of the listed ports.

HDD & FDD I/O Access

When HDD & FDD is On, any activity detected from one of the listed system peripheral devices or IRQs wakes up the system

PCI Master

When PCI Master is On, any activity from the listed system peripheral devices or IRQs wakes up the system.

Wake Up On LAN/Ring

To use this function, you need a LAN add-on card or Modem which supports power on functions. During Disabled, the system cannot be booted up through LAN and ignores any incoming call from the modem. During Enabled, the system can be booted up through LAN and modem.

RTC Alarm Resume

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date (of month) You can choose which date the system will boot up. Set to 0, to boot every day.

Resume Time (hh:mm:ss) You can choose what hour, minute and second the system will boot up.

Note: If you have changed the setting, you must let the system boot up until it enters the operating system and turn off the system. Next time when you power on the system, the modified settings will come into effect.

IRQs Wake Up Event

When On, any activity from one of the IRQs wakes up the system

IRQs Activity Monitoring

<pre> IRQ3 (COM 2) Enabled IRQ4 (COM 1) Enabled IRQ5 (LPT 2) Enabled IRQ6 (Floppy Disk) Enabled IRQ7 (LPT 1) Enabled IRQ8 (RTC Alarm) Disabled IRQ9 (IRQ2 Redir) Disabled IRQ10 (Reserved) Disabled IRQ11 (Reserved) Disabled IRQ12 (PS/2 Mouse) Enabled IRQ13 (Coprocessor) Enabled IRQ14 (Hard Disk) Enabled IRQ15 (Reserved) Disabled </pre>	<p>Item Help</p> <hr/> <p>Menu Level ></p>
<p>↑↓ → ← Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults</p>	

The following is a list of IRQ's, Interrupt **Re**Quests, 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 operating system is ready to respond to the request, it interrupts itself and performs the service.

When set to Disabled, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ3 (COM 2)
- IRQ4 (COM 1)
- IRQ5 (LPT 2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

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PnP/PCI Configurations

PnP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto (ESCD)	Menu Level >
x IRQ Resources	Press Enter	
x DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for USB	Enabled	
↑ ↓ ← → Move Enter:Select +/-/PU/PD=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

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 or 98. When set to NO, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware®), this option must set to Yes.

Reset Configuration Data

Normally, you should leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. Settings: Enabled/Disabled .

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “>”). Settings: Auto (ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

DMA Resources

This sub menu can let you control the DMA resources.

PCI/VGA Palette Snoop

Leave this field at Disabled. Settings: Enabled, Disabled.

Assign IRQ for VGA

Leave this field at Enabled. Settings: Enabled, Disabled.

Assign IRQ for USB

Leave this field at Enabled. Settings: Enabled, Disabled.

Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk CPU Host/PCI/Spread Spec	Enabled Default	Item Help
		Menu Level >
↑ ↓ → ← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Auto Detect DIMM/PCI CLK

This item is used to auto detect the DIMM/PCI slots. When set to *Enabled*, the system will remove (turn off) clocks from empty DIMM/PCI slots to minimize the electromagnetic interference (EMI). Settings: Enabled and Disabled.

CPU Host/PCI/Spread Spec.

This item allows you to select the CPU Host bus and PCI Clock, and set Spread Spectrum feature.

Load Fail-Safe/Optimized Defaults

Load Fail-Safe Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N)? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password : can enter and change the options of the setup menus.

User password : Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTERPASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will replace 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 a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORDDISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time when your system is rebooted. This would prevent unauthorized use of your computer.

You can determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Installing Drivers

4

The MS-6340M is paired with the VIA VT82C686B south bridge. Highly advanced, the north bridge combines ProSavage4 VGA, and the south bridge combines an integrated 2D/3D engine with DVD hardware acceleration. Besides, the mainboard comes with support for AD1881 audio codec. To have these functions work properly, you need to install appropriate drivers. Make sure you install chipset drivers prior to any other drivers such as audio and VGA driver.

This chapter includes the following topics:

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Driver Installation for Windows® 98SE & ME	4-3
Driver Installation for Windows® 2000	4-5
Driver Installation for Windows® NT4.0	4-7

Overview

Audio Features

- AC'97 audio support for SoundBlaster Pro
- FM synthesis legacy audio

System Requirements

This section describes system requirements for the VGA Driver installation and Usage.

CPU	AMD® Duron™/Athlon™/Athlon XP processor
Monitor	VGA Support, minimum 640x480 resolution
Operating System	DOS 5.0 or higher, Windows® 95/98SE, Windows® NT 3.51 or 4.0, Windows® ME, Windows® 2000 or Windows® XP
CD-ROM	Double Speed or Higher
Chipset	VIA® KM133A/VT82C686B chipset

Driver Installation for Windows® 98SE & ME

VIA Chipset Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “Via Chipset Drivers” icon and the screen will show “VIA Service Pack 4.XX”.
- Step 4:** Click “Next” and the screen will show a “VIA Service Pack 1 README” dialog box.
- Step 5:** Click “Yes” and you can see “4in1 Setup Mode Option” with “Normally Install” and “Quickly Install”. If you choose “Quickly Install”, the drivers will be installed automatically. Then go to step 10. If you choose “Normally Install”, go to step 6.
- Step 6:** Click “Next” and the screen will show four drivers “VIA Atapi Vendor Support Driver”, “AGP VxD Driver” and “VIA INF Driver 1.XX”. Select all drivers and click on “Next”.
- Step 7:** The setup program will request you to choose “Install VIA Atapi Vendor Support Driver”. Please select “Install” and click “Next” to continue.
- Step 8:** Select “Click to enable DMA Mode” and click “Next” to continue.
- Step 9:** The setup program will request you to choose “Install VIA AGP VxD in turbo mode”, “Install VIA AGP VxD in normal mode” or “Uninstall VIA AGP VxD”. Please select “Install VIA AGP VxD in turbo mode” and click on “Next”.
- Step 10:** The setup program will request you to choose whether to restart the computer or not. Please select “Yes, I want to restart my computer now” and click “Finish”. The computer will restart and finish the VIA Chipset Drivers installation.

AD1881 Audio Driver Installation (for Windows 98SE):

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “ADI SoundMax Drivers” icon and then click on “Next”.
- Step 4:** Please select “Yes, I want to restart the computer now” and click “Finish”.
- Step 5:** After the computer restarts, you can see a window “Add New Hardware Wizard”. Please click “Next” to add “SoundMax Integrated Digital Audio” device.
- Step 6:** Click “Next” to let the system search for the best driver.
- Step 7:** After the driver of “SoundMax Integrated Digital Audio” device is found, click “Next” and then click “Finish” to complete installation.

AD1881 Audio Driver Installation (for Windows ME):

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “ADI SoundMax Drivers”.
- Step 4:** Click “OK” to restart the computer and finish the installation.

VIA KM133A VGA Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “VIA KM/KL/PM/PL 133 VGA Driver” icon and the screen will show “Pro Savage Driver Setup”. Click “Next”.
- Step 4:** The screen will show a “Start Copying Files” dialog box. Click “Next”.
- Step 5:** The setup program will request you to choose whether to restart the computer or not. Please select “Yes, I want to restart my computer now” and click Finish. The computer will restart and finish the VIA ProSavage Driver installation.

Driver Installation for Windows® 2000

VIA Chipset Drivers Installation:

- Step 1:** Insert the provided CD_ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD_ROM icon. The setup screen will appear.
- Step 3:** Click on “Via Chipset Drivers” icon and the screen will show “VIA Service Pack 4.XX”.
- Step 4:** Click “Next” and the screen will show a “VIA Service Pack 1 README” dialog box.
- Step 5:** Click “Yes” and you can see “4in1 Setup Mode Option” with “Normally Install” and “Quickly Install”. If you choose “Quickly Install”, the drivers will be installed automatically. Then go to step 9. If you choose “Normally Install”, go to step 6.
- Step 6:** Click “Yes” and the screen will show three drivers “VIA Driver (Windows 2000)”, “AGP VxD Driver” and “VIA INF Driver 1.XX.” Select all and click “Next” to proceed to next step.
- Step 7:** The screen will show a “VIA PCI IDE Bus Driver 1.XX” dialog box. Select “Install VIA PCI IDE Bus Driver” and click “Next”.
- Step 8:** The screen will show a “VIA_GART AGP Driver 4.XX” dialog box. Select “Install AGP 4X/133 driver” and click “Next”.
- Step 9:** Select “Yes” and then click “Finish” to restart the system.

AD1881 Audio Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “ADI SoundMax Drivers” icon and then click on “Next”.
- Step 4:** The setup program will request you to choose whether to restart the computer or not. Please select “Yes, I want to restart the computer now” and click “Finish”. The computer will restart and finish installation.

VIA KM133A VGA Driver installation procedure:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “VIA KM/KL/PM/PL133 VGA Driver” icon and the screen will show “ProSavage Driver Setup”. Click “Next”.
- Step 4:** The screen will show a “Start Copying Files” dialog box. Click “Next”.
- Step 5:** A window “Digital Signature Not Found” will appear and ask you “Do you want to continue the installation of the S3 Graphics Inc. Pro Savage?” Please click “Yes” to proceed.
- Step 6:** Click “Finish” to restart your computer and complete setup.

Driver Installation for Windows® NT 4.0

Make sure you install Windows® NT 4.0 Service Pack 6 or the latest version before installing the VIA drivers.

VIA Chipset Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Look for the CD-ROM drive, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “VIA Chipset Drivers” icon and the screen will show “VIA Service Pack 4.XX”.
- Step 4:** Click “Next” and the screen will show the “VIA Service Pack 1 README” dialog box.
- Step 5:** Click “Yes”. You can see “4in1 Setup Mode Option” with “Normally Install” and “Quickly Install”. If you choose “Quickly Install”, the drivers will be installed automatically. Then go to step 9. If you choose “Normally Install”, go to step 6.
- Step 6:** Click “Yes” to proceed and then select “Install” to enable (Ultra) DMA for IDE Driver.
- Step 7:** The “Choose Destination Location” dialog box appears. Click “Next”.
- Step 8:** The “Select Program Folder” dialog box appears. Click “Next”.
- Step 9:** Please click on “Yes, I want to restart my computer” and then click “Finish” to restart your computer and complete installation.

AD1881 Audio Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Go to “My Computer”, double click on the CD-ROM icon. The setup screen will appear.
- Step 3:** Click on “ADI SoundMax Drivers” icon and then click on “Next”.
- Step 4:** Click “OK” in the “About SoundMax Integrated Digital Audio” window.
- Step 5:** The setup program will request you to choose whether to restart the computer or not. Please select “Yes, I want to restart the computer now” and click “Finish”. The computer will restart and finish installation.

VIA KM133A VGA Driver Installation:

- Step 1:** Insert the provided CD-ROM disk into the CD-ROM drive.
- Step 2:** Look for the CD-ROM drive, double click on the CD_ROM icon. The setup screen will appear.
- Step 3:** Click on “VIA KM/KL/PM/PL133 VGA Driver” icon and the screen will show “ProSavage Driver Setup”. Click “Next”.
- Step 4:** The screen will show a “Start Copying Files” dialog box. Click “Next”.
- Step 5:** Click “Finish” to restart your computer and complete installation.