
Introduction

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The MS-6362 ATX mainboard is a high-performance computer mainboard based on VIA® VT82C694DP chipset. The MS-6362 is designed for the Intel® Pentium® III (FC-PGA) processor for inexpensive business/personal desktop markets.

The Apollo Pro133A (VT82C694DP) is a Socket-370 system logic north bridge with the addition of 133 MHz capability for both the CPU and SDRAM interfaces. Apollo Pro133A may be used to implement both desktop and notebook personal computer systems from 66MHz to 133MHz based on Socket-370. The primary features of the Apollo Pro133A-North Bridge are: Slot-1 or Socket-370 CPU (Front Side Bus) Interface (66 / 100 / 133MHz), DRAM Memory Interface (66 / 100 / 133MHz), AGP Bus Interface (66MHz), PCI Bus Interface (33MHz), Mobile Power Management.

The VT82C686B PSIPC (PCI Super-I/O Integrated Peripheral Controller) is a high integration, high performance, power-efficient, and high compatibility device that supports Intel and non-Intel based processor to PCI bus bridge functionality to make a complete Microsoft PC99-compliant PCI/ISA system.

Chapter 1 contains the following topics:

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Mainboard Specifications

CPU

- Support dual Intel® Pentium III(FC-PGA) processor.
- Supports 233MHz, 266MHz, 300MHz, 333MHz, 350MHz, 400MHz, 450MHz, 500MHz, 533MHz, 600MHz, 633MHz, 667MHz, 700MHz, 733MHz, 800MHz, 866MHz, 933MHz, or 1GHz.

Chipset

- VIA® 694DP chipset. (510 BGA)
 - P-II FSB @ 133MHz
 - AGP 4x and PCI plus Advanced ECC Memory Controller
 - Support PC100/133 SDRAM & VCM technology
- VIA® VT82C686B chipset. (352 BGA)
 - Advanced Power Management Features
 - DirectSound AC97 Audio
 - Dual bus Master IDE Ultra DMA 33/66/100

Clock Generator

- 66.6MHz , 100MHz and 133Mhz up to 200MHz clocks are supported.

MainMemory

- Support eight memory banks using four 168-pin unbuffered DIMM.
- Support a maximum memory size of 2GB.
- Support ECC (1-bit Error Code Correct) function.
- Support 3.3V SDRAM DIMM.
- Pinouts support 8 banks up to 2GB DRAMs (256Mb DRAM technology) at 100MHz.
(PC133 specifications. However, a limit of 3 DIMMs or 6 banks at 133 MHz for 1.5GB max. memory is recommended.)

Slots

- One AGP (Accelerated Graphics Port) PRO slot.
 - AGP specification compliant
 - One CNR (Communication Network Riser) slot.
 - Five 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.

Onboard Ultra 160 SCSI Connector

- Adaptec AIC-7899
 - supports high performance 160Mbytes/sec Dual Channel Ultra SCSI
 - supports Ultra(SE) devices

On-Board Peripherals

- On-Board Peripherals include:
 - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
 - 2 serial ports (COMA + COMB)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 4 USB ports
 - 1 IR connector for HPSIR/ASK

Audio

- Chip integrated

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.

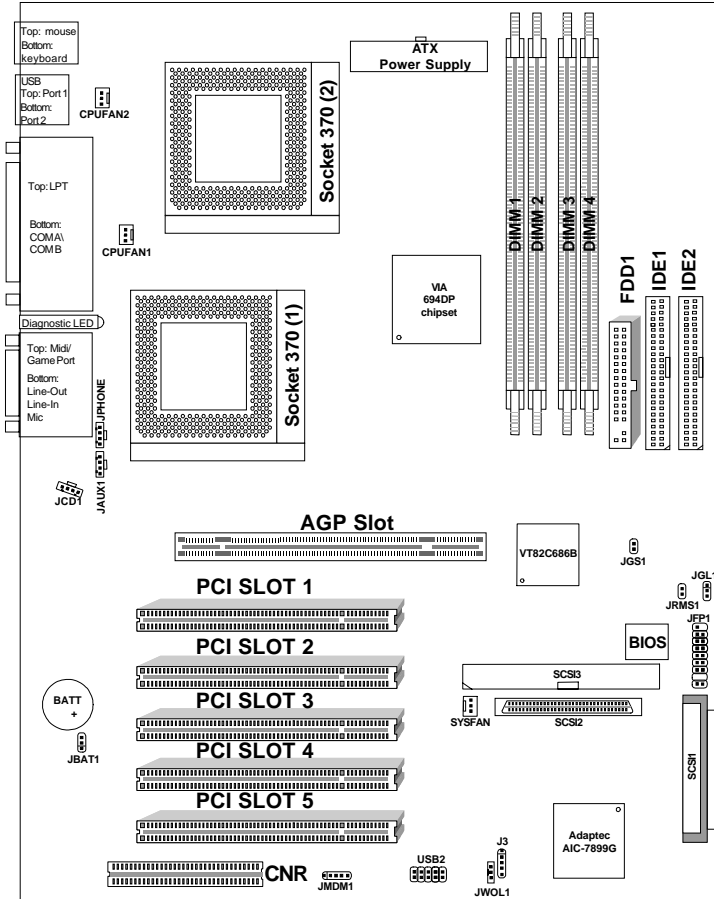
Dimension

- ATX Form Factor 24.9cm x 30.4cm

Mounting

- 9 mounting holes.

Mainboard Layout



MS-6362 ATX Mainboard

Key Features

- PC99 Color Connector
- D-LED™(Diagnostic LEDs)
- ATX Form Factor
- Support Accelerated Graphic Port (AGP) Add-In Card
- Support Dual Intel® Pentium III (FC-PGA) processors at 100MHz and 133MHz System Bus Frequencies
- PC Alert™ III (System Hardware Monitor)
- TCAV (Build-in Trend Micro Anti-Virus Protection on BIOS)
- Support DMI (Desktop Management Interface) through BIOS
- LAN Wake Up Function
- Modem (Internal/External) Ring Wake Up Function
- Support Ultra DMA 100

MSI Special Features

The following MSI special features are designed in-house by MSI R&D which are feature only in MSI mainboards. The MS-6362 mainboard is equipped with PC Alert™ III, TOP Tech.™ III and D-LED™.

TOP Tech.™

The TOP Tech.™ is an extended sensing device that can 100% accurately detect the CPU's temperature.



PC Alert™ III

The PC Alert™ III is a special utility you can find in the CD-ROM. The utility is just like your PC doctor which can detect the following PC hardware status during real time operation:

- * monitor CPU & system temperature
- * monitor fan speed
- * monitor system voltage
- * monitor chassis intrusion



D-LED™

The D-LED™ uses graphic signal display to help you understand your system. There are 4 LEDs embedded in the mainboard which provides up to 16 combination of signals to debug system. The 4 LEDs can debug all problems that fail the system, such as VGA, RAM or other failures. This special feature is very useful for the overclocking users. The users can use this feature to detect if there are any problems or failures while doing the overclocking.



Hardware Installation

2

This chapter provides you with the information about hardware setup procedures. During installation, be careful when handling the components and follow the installation procedures properly. For some components, installing it in a wrong orientation will cause it to become unstable.

Remember to use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

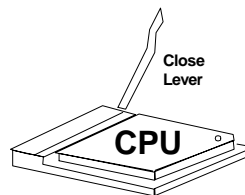
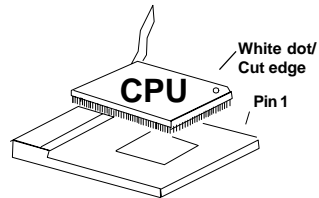
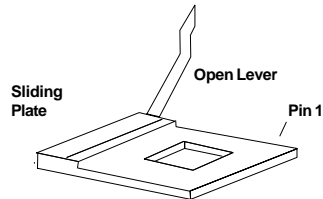
Central Processing Unit (CPU)	2-2
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Central Processing Unit: CPU

The mainboard operates with **Intel® Pentium® III (FC-PGA) processor**. The mainboard uses a CPU socket called Socket 370 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. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge. Then, insert the CPU. It should insert easily.
3. Press the lever down to complete the installation.



- CPU Core Speed Derivation Procedure

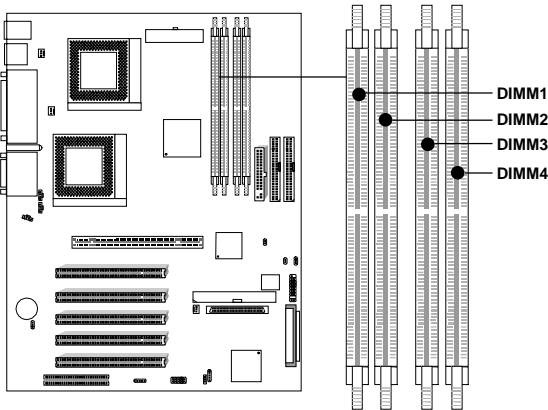
The BIOS can be used to set the CPU Host Bus Frequency Clock.

if	<u>CPU Clock</u>	=	66MHz
	<u>Core/Bus ratio</u>	=	3.5
then	<u>CPU core speed</u>	=	<u>Host Clock</u> x <u>Core/Bus ratio</u>
		=	66MHz x 3.5
		=	233MHz

Memory Installation

• Memory Bank Configuration

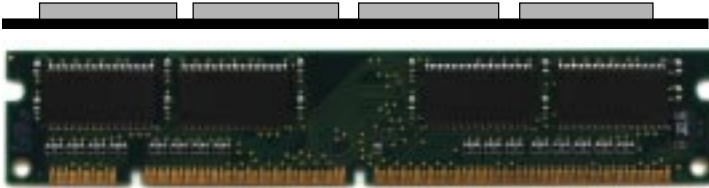
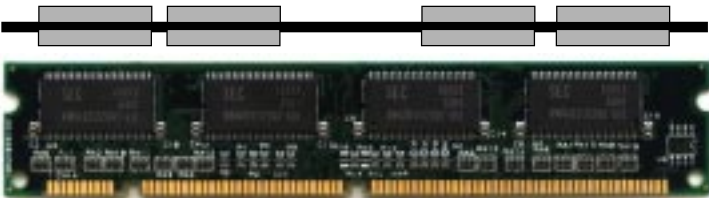
The mainboard supports a maximum memory size of 2GB registered DIMM for SDRAM. It provides four 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 8 MB to 512 Mbytes DIMM memory module.



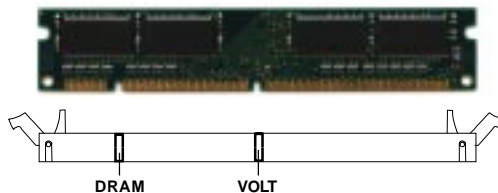
• Memory Population Rules

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 DIMM1, DIMM 2, DIMM 3 or DIMM 4 in any order.
4. Supports 3.3 volt DIMM.

- **Memory Installation Procedures**

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.



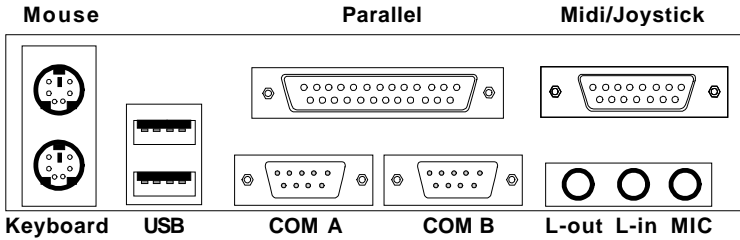
3. The plastic clip at the side of the DIMM slot will automatically close.

• **SDRAM Memory Addressing**

DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		MB/DIMM	
			Row	Column	Single no. Side(S) pcs.	Double no. Side(D) pcs.
16M	1Mx16	ASYM	11	8	8MBx4	16MBx8
	2Mx8	ASYM	11	9	16MBx8	32MBx16
	4Mx4	ASYM	11	10	32MB	64MB
64M	2Mx32	ASYM	11	9	32MBx2	64MBx4
	2Mx32	ASYM	12	8	16MBx2	32MBx4
	4Mx16	ASYM	11	10	32MB	64MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB
	2Mx32	ASYM	12	8	16MB	32MB
64M	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB
	16Mx4	ASYM	13	10	128MB	256MB

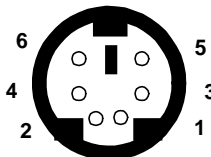
Back Panel

The mainboard provides the following back panel connectors:



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.

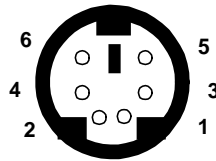


PS/2 Mouse (6-pin Female)

PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock

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.

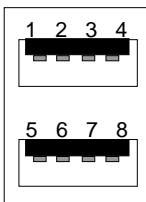


PS/2 Keyboard (6-pin Female)

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

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.

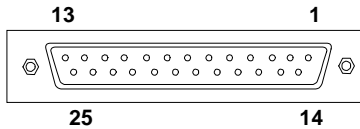


USB Ports

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	GND	Ground
4	+Data 0	Positive Data Channel 0
5	VCC	+5V
6	+Data 1	Positive Data Channel 1
7	-Data 1	Negative Data Channel 1
8	GND	Ground

Parallel Port Connector: LPT1

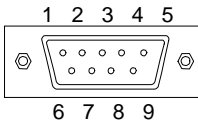
The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended capabilities Parallel Port (ECP). See connector and pin definition below:



PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	FE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground1

Serial Port Connectors: COM A and COM B

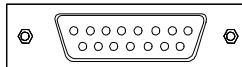
The mainboard provides two 9-pin male DIN connectors for serial port COM A & COM B. These port are 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



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)

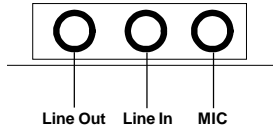
Joystick/Midi Connectors

You can connect joystick or game pad to this connector.



Audio Port Connectors

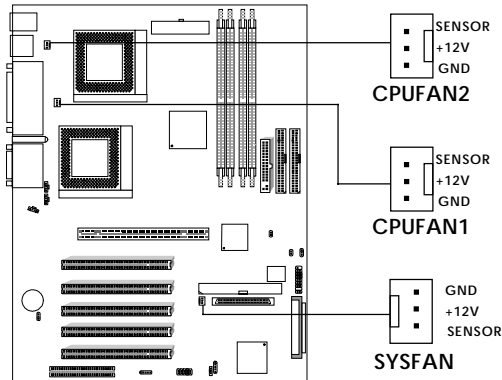
Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for the microphones.



Connectors

Fan Power Connectors: CUFAN1/CUFAN2/SYSFAN

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.



CUFAN1: Processor Fan 1

CUFAN2: Processor Fan 2

SYSFAN: System Fan (Non speed report)

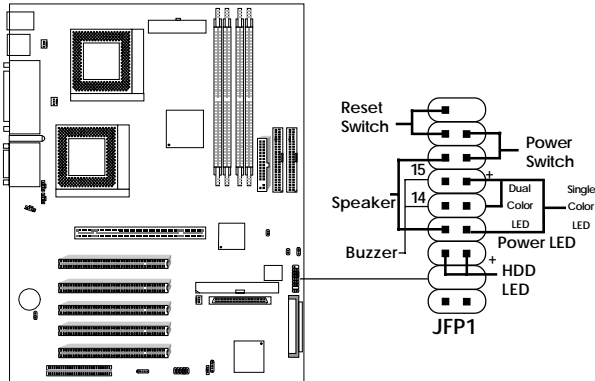
For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

Note:

1. Always consult your reseller 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 Connector: JFP1

The Power Switch, Reset Switch, Power LED, Speaker, and HDD LED are all connected to the JFP1 connector block.



Power Switch

Connect to a 2-pin push button switch. This switch has the same feature with JRMS1.

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.

Power LED

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

There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED (ACPI request).

- a. 3 pin single color LED connect to pin 4, 5, & 6. This LED will lit when the system is on.
- b. 2 pin dual color LED connect to pin 5 & 6.

GREEN Color: Indicate the system is in full on mode.

ORANGE Color: Indicate the system is in suspend mode.

Speaker

Speaker from the system case is connected to this pin.

If on-board Buzzer is available:

Short pin 14-15: On-board Buzzer Enabled.

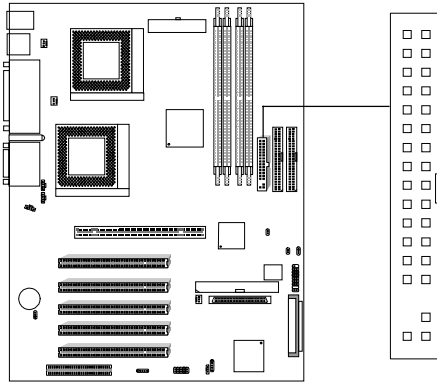
Open pin 14-15: On-board Buzzer Disabled.

HDD LED

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.

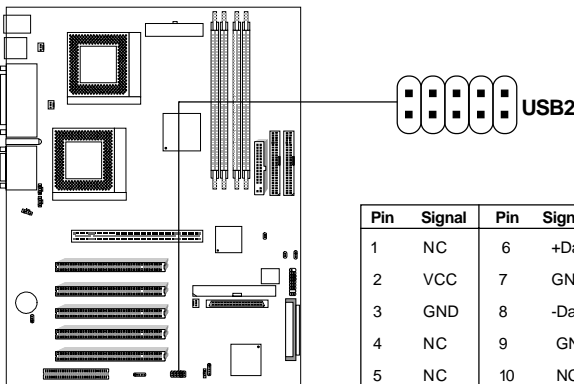
Floppy Disk Connector: FDD

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



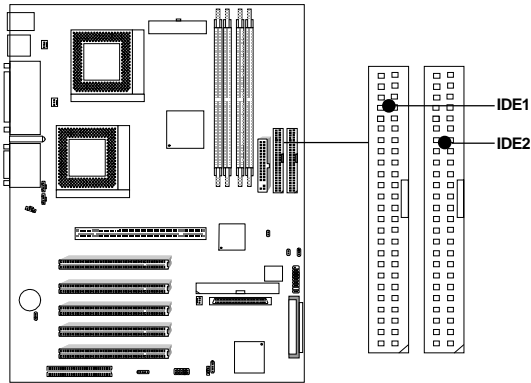
USB Front Connector: USB2

The mainboard provides a **front Universal Serial Bus connector**. This is an optional USB connector for Front Panel.



Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA/100 Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 function. 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)

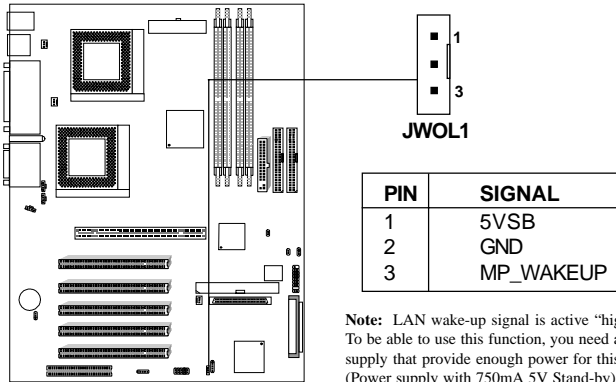
The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

Wake-Up on LAN Connector: JWOL1

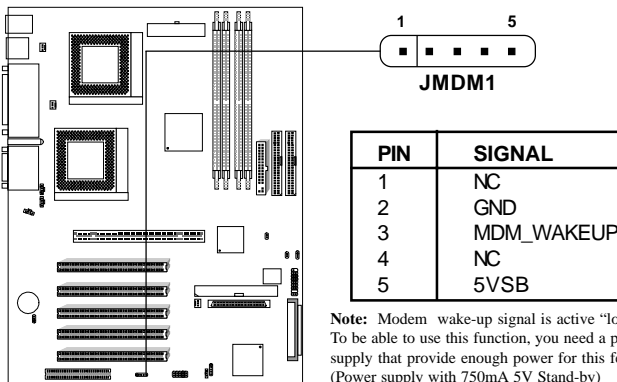
The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function. To use this function, you need to set the “Wake-Up on LAN” to enable at the BIOS Power Management Setup.



Note: LAN wake-up signal is active “high”. To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

Modem Wake Up Connector: JMDM1

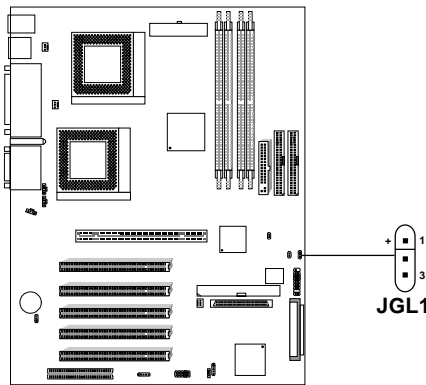
The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function.

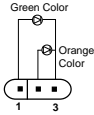
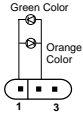


Note: Modem wake-up signal is active “low”. To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

Power Saving LED Connector: JGL1

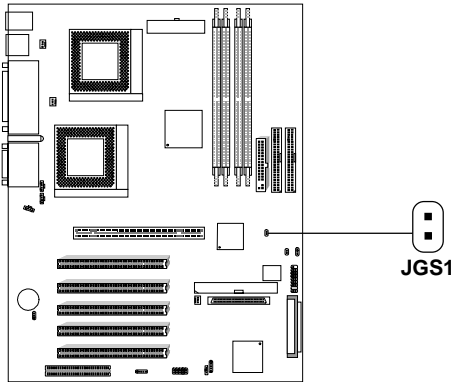
JGL1 can be connected with dual color LED. There are two types of LED that you can use: 3-pin LED or 2-pin LED (ACPI request). When the 2-pin LED is connected to JGL1, the light will turn green, when system is On. During sleep mode, the 2-pin LED will change color from Green to Orange. For 3-pin LED, when LED is connected to JGL1, this will light when the system is On and blinks when it is in suspend/sleep mode.



3-pin LED	2-pin LED
	
<p>1-2 Single Color 1-3 Blink</p>	<p>1-2 Dual Color</p>

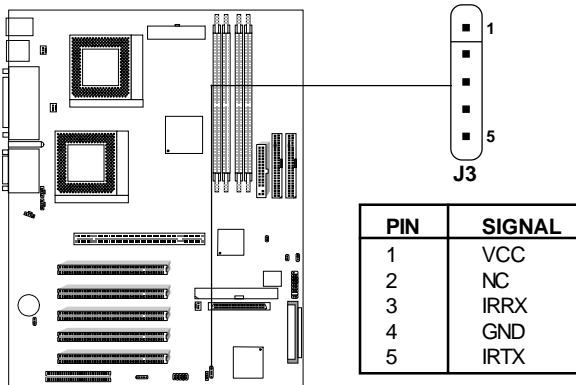
Power Saving Switch Connector: JGS1

Attach a power saving switch to **JGS1**. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up.



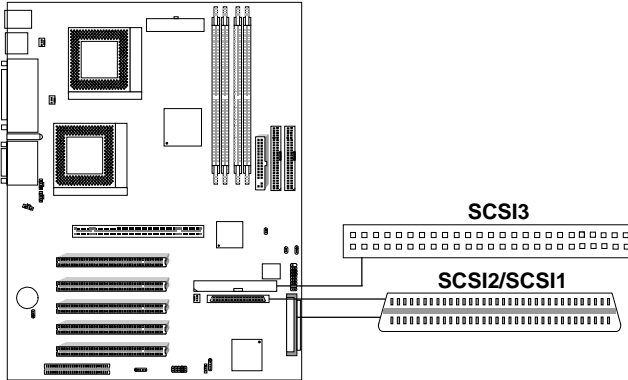
HP Infrared Module Connector: J3

The mainboard provides one infrared (J3) connector for IR modules. This connector is for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



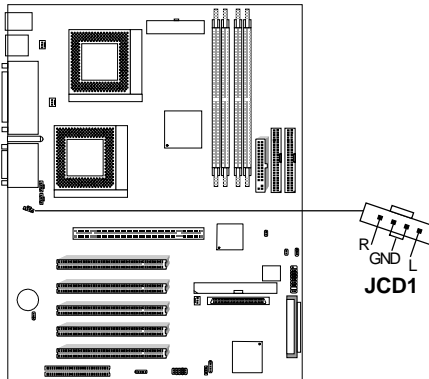
SCSI Connectors: SCSI1, SCSI2 & SCSI3

The mainboard provides an on-board SCSI function. This hardware interface allows user to connect up to 15 peripheral devices.



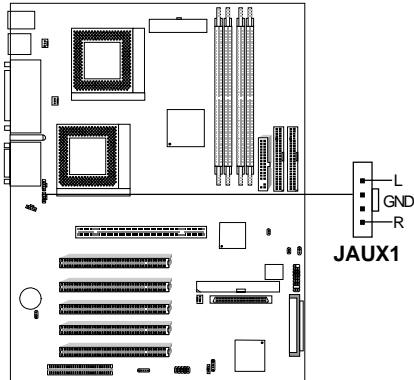
CD-In Connector: JCD1

This connector is for CD-ROM audio connector.



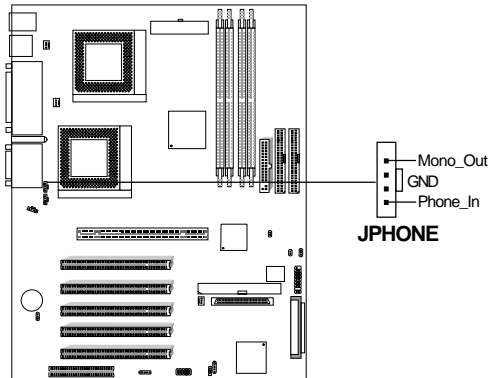
AUX Line In Connector: J AUX1

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



Modem-In: JPHONE

The connector is for Modem with internal voice connector.

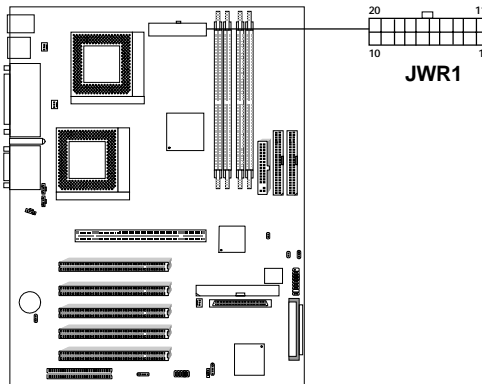


Mono_Out is connected to the Modem Speaker Out connector.
Phone_In is connected to the Modem Microphone In connector.

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.

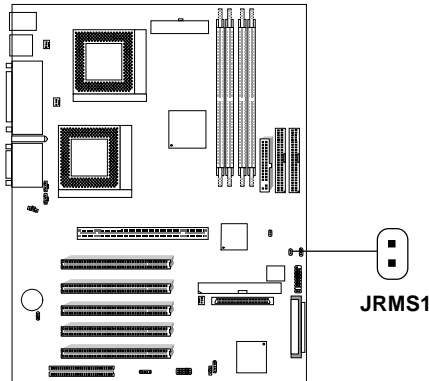


PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

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.

Remote Power On/Off: JRMS1

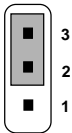
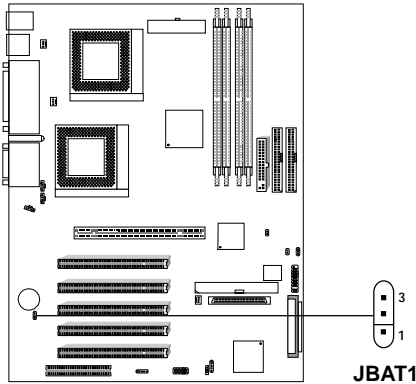
Connect to a 2-pin push button switch. During OFF state, press once and the system turns on. **During ON stage, push once and the system goes to sleep mode: pushing it more than 4 seconds will change its status from ON to OFF.** If you want to change the setup, you could go to the BIOS Power Management Setup. This is only used for ATX type power supply.



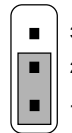
Jumpers

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.



Clear Data



Keep Data



WARNING! *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.*

Slots

AGP Slot (Accelerated Graphics Port)

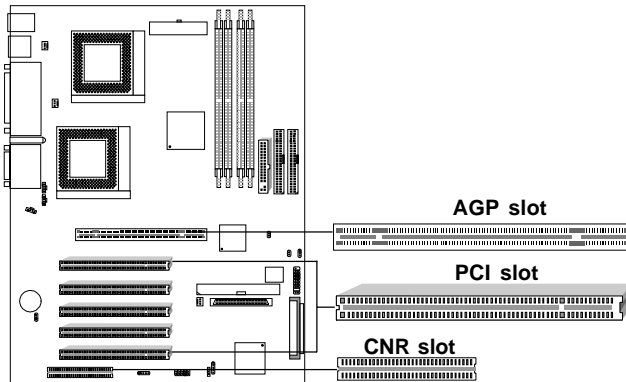
The mainboard provides an AGP slot which you can install the AGP card.

PCI Slots

The mainboard provides 5 PCI slots which you can insert the expansion cards according to your needs.

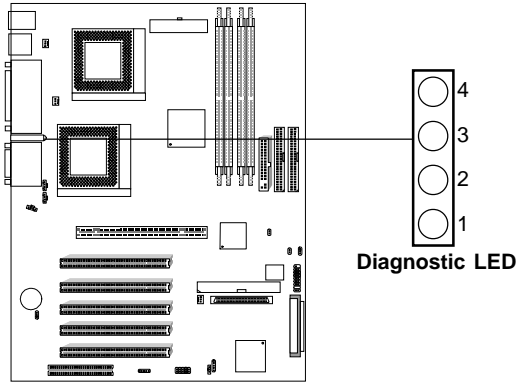
CNR (Communication Network Riser)

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 modem only.



Diagnostic LED

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. The LED helps user determine the problem of the mainboard. Please refer to chapter 2-26 for the Diagnostic LED table.



Diagnostic LED Function

Diagnostic LED 4 3 2 1	Description	Possible Problem/ Solution
0 0 0 0	System Power ON. This will start BIOS Initialization	System D-LED will hang here The Processor might be damage or not installed properly Damage/Discharge Lithium Battery
0 0 0 1	Early Chipset Initialization	***
0 0 1 0	Memory Detection Test Testing Onboard memory size	System D-LED will hang here The Memory module might be damage or not installed properly.
0 0 1 1	Decompressing BIOS image to RAM for fast booting.	***
0 1 0 0	Initializing Keyboard Controller	***
0 1 0 1	Testing VGA BIOS This will start writing VGA sign-on messages to the screen.	System D-LED will produce Beep sound The VGA card might be damage or not inserted properly.
0 1 1 0	Processor Initialization This will show information regarding the processor (like brand name, system bus, etc...)	***
0 1 1 1	Testing RTC (Real Time Clock)	Low Lithium Battery
1 0 0 0	Initializing Video Interface This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter	***
1 0 0 1	BIOS Sign On This will start showing information about Logo, processor brand name, etc.....	***
1 0 1 0	Testing Base and Extended Memory Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.	***
1 0 1 1	Assign Resource to all ISA	***
1 1 0 0	Initializing Hard Drive Controller This will initialize IDE drive and controller	Check IDE cable for proper installation
1 1 0 1	Initializing Floppy Drive Controller This will initialize Floppy Drive and controller	System D-LED will hang here The Floppy Drive Cable might not be installed properly
1 1 1 0	Boot Attempt This will set low stack and boot via INT19h.	***
1 1 1 1	Operating System Booting.	***

1 = GREEN 0 = RED

*** Check local Vendor for possible internal mainboard problem.

*AWARD® BIOS Setup***3**

Award® BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM), so that it retains the Setup information when the power is turned off.

Chapter 3 contains the following topics:

Entering Setup	3-2
Getting Help	3-2
The Main Menu	3-3
Standard CMOS Setup	3-5
Advanced Chipset Features	3-12
Integrated Peripherals	3-17
Power Management Setup	3-21
PnP/PCI Configuration Setup	3-28
PC Health Status (Optional)	3-31
Frequency/Voltage Control	3-33
Load Fail-Safe/Optimized Defaults	3-34
Set Supervisor/User Password	3-35

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>.

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 Configuration

This entry appears if your system supports PnP/PCI.

PC Health Status (Optional)

This entry shows your PC health status. If Hardware Monitor Chipset is installed.

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.

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 Setup

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 19,2000	Item Help
Time(hh:mm:ss):	00:00:00	
IDE Primary Master	Press Enter 4310 MB	Menu Level > Change the day, month, year and century
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	392192K	
Total Memory	393216K	
↑ ↓ → ← 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, depends on the year of the BIOS

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** and **CD-ROM**, the selection should be set to "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 Warning	Disabled	Item Help	
CPU Internal Cache	Enabled		
External Cache	Enabled	Menu Level >	
CPU L2 Cache ECC Checking	Enabled		
Processor Number Feature	Enabled		
Quick Power On Self Test	Enabled		
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	Fast		
Typematic Rate Setting	Disabled		
Typematic Rate (Chars/Sec)	6		
Typematic Delay (Msec)	250		
Security Option	Setup		
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		
↑ ↓ → ← 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 attempt to write date into this area, BIOS will show a warning message on screen and alarm beep.

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

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).

Processor Number Feature

This option is for Pentium® III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

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

Boot Up NumLock Status

On (default)	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. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down. The settings are: 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. The settings are: 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(default) | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. |

MPS Version Control for OS

An MP Platform interface standard that extends the performance of the existing PC/AT platform beyond the traditional single processor limit, while maintaining 100% PC/AT binary compatibility.

OS Selection for DRAM > 64MB

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

Viedo BIOS Shadow

This determines whether the video BIOS will be copied to RAM for faster execution. Video shadow will increase the video performance.

Enabled (default)	Video shadow is enabled.
Disabled	Video shadow is disabled.

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 0/1 DRAM Timing	SDRAM 10ns	Item Help
Bank 2/3 DRAM Timing	SDRAM 10ns	
Bank 4/5 DRAM Timing	SDRAM 10ns	Menu Level >
Bank 6/7 DRAM Timing	SDRAM 10ns	
SDRAM Cas Latency	3	
DRAM Clock	Host CLK	
Memory Hole	Disabled	
P2C/C2P Concurrency	Enabled	
Fast R-W Turn Around	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
AGP Aperture Size	64M	
AGP 4X Mode	Enabled	
AGP 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	Enabled	
AGP Master 1 WS Write	Disabled	
AGP Master 1 WS Read	Disabled	
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 0/1 DRAM Timing/Bank 2/3 DRAM Timing
Bank 4/5 DRAM Timing/Bank 6/7 DRAM Timing**

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

SDRAM CAS Latency

This item allows you to select the number of clock cycles of the SDRAM CAS Latency. The settings are 2 or 3.

DRAM Clock

The chipset support synchronous and asynchronous mode between the host clock and DIMM clock.

Host CLK (default) DIMM clock equal to host clock

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 16 MB.

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

P2C/C2P Concurrency

This item allows you to Enable or Disable the PCI to CPU, CPU to PCI concurrency. The default setting is Enabled.

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. The settings are Enabled or Disabled. The default setting is 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. The settings are: Enabled and Disabled.

Video RAM Cacheable

Select 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. The settings are: Enabled and Disabled.

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 Enabled or Disabled 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. The default setting is Auto.

AGP Driving Value

This item allows you to adjust the AGP driving force.

Onchip USB

Set this option to Enable or Disable the onchip USB controller. The default setting is Enabled.

USB Keyboard Support

Set this option to Enable or Disable the USB keyboard support. The default setting is Disabled.

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. The default setting is Enabled.

PCI Dynamic Bursting

This item allows you to Enable or Disable the PCI dynamic bursting function. The settings are Enabled or Disabled.

PCI Master 0 WS Write

When Enabled, writes to the PCI bus and are executed with zero wait states. The settings are Enabled or Disabled.

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. The settings are Enabled or Disabled.

PCI#2 Access #1 Retry

When Disabled, PCI#2 will not be disconnected until access finishes (default). When Enabled, PCI#2 will be disconnected if max retries are attempted without success. The default setting is Enabled.

AGP Master 1 WS Write

When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait states. The default setting is Enabled.

AGP Master 1 WS Read

When Enabled, reads to the AGP (Accelerated Graphics Port) are executed with one wait states. The default setting is Enabled.

Memory Parity/ECC Check

This item when Enabled detects the memory parity and Error Checking & Correction. The settings are Enabled or Disabled.

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	PCI Slot	
Onboard SCSI Controller	Enabled	
IDE HDD Block Mode	Enabled	
Onboard FDD Controller	Enabled	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
UART 2 Mode	Standard	
X IR Function Duplex	Half	
X TX,RX inverting enable	No, Yes	
Onboard Parallel Port	378/IRQ7	
Onboard Parallel Mode	Normal	
ECP Mode Use DMA	3	
Parallel Port EEP Type	EEP 1.9	
Onboard Legacy Audio	Enabled	
Sound Blaster	Disabled	
SB I/O Base Address	220H	
SB IRQ Select	IRQ 5	
SB DMA Select	DMA1	
MPU-401	Disabled	
MPU-4-1 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. The settings are: Enabled and Disabled.

IDE Prefetch Mode

This item is used to Enabled or Disabled the IDE Read/Write Prefetch buffer. This buffer is used to store data for faster performances.

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. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA/33 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 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

Init Display First

This item allows you to decide to activate whether PCI Slot or AGP Slot. The settings are: PCI Slot, AGP Slot.

Onboard SCSI Controller

This item allows you to Enabled or Disabled the onboard SCSI Controller.

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. The settings are: 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. The settings are: Enabled and Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode

This item allows you to select which mode for the Onboard Serial Port 2. The settings are: Standard, HPSIR, 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. The default setting is 3.

Parallel Port EEP 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

ACPI Function	Enabled	Item Help	
Power Management	Press Enter		
PM Control by APM	Yes	Menu Level >	
Video Off Option	Suspend->Off		
Video Off Method	V/H SYNC+Blank		
MODEM Use IRQ	3		
Soft-Off by PWRBTN	Instant-Off		
State After Power Failure	Auto		
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			

ACPI Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The Settings are Enabled and Disabled.

Power Management

Power Management	User Define	Item Help
HDD Power Down	Disable	
Doze Mode	Disable	
Suspend Mode	Disabled	
		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		

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 four selections for Power Management, three of which have fixed mode setting.

Disable (Default)	No power management. Disables all four modes.
Min. Power Saving	Minimum power management. Doze Mode=1hr. Suspend Mode=1hr.
Max. Power Saving	Maximum power management. -- Only Available For SL CPU's. Doze Mode=1 min. Suspend Mode=1min.
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. and disabled.

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 enter any PM mode

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

Video Off Option

This option is for choosing the setting in which the monitor will turn off.

- All-modes →Off** Monitor will be blanked when the system enters any power saving mode.
- Always On** Monitor will remain On during power saving mode.
- Suspend →Off** Monitor will be blanked when the system enters the suspend mode.

Video Off Method

This determines the manner in which the monitor is blanked.

- V/H SYNC+Blank (default)** 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 in which the MODEM can use.
 The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Soft-Off by PWR-BTTN

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

State After Power Failure

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

LED In Suspend

This item determines which state the Power LED will use. The settings are Blink (default), Dual color, and Single color.

- Blink** Power LED will blink when the system enters the suspend mode.
- Dual Color** Power LED will change its color when the system enters the suspend mode.
- Single Color** Power LED will always remain lit.

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	
Date (of Month)	0	
Resume Time	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 Enabled, you can set the VGA to awaken the system.

LPT & COM I/O Access

When LPT & COM I/O Access is On, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD & FDD I/O Access

When HDD & FDD is I/O Access, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

PCI Master

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

Power On by PCI Card

This item allows the user to Enabled/Disabled the Power On by PCI card.

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 boot up through LAN and ignores any incoming call from the modem. During Enabled, the system can be boot 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) Alarm You can choose which month the system will boot up. Set to 0, to boot every day.

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

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

IRQs Wake Up Event

When this is set to On, any event occurring will awaken a system which has been powered down.

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 (SCSI1) Enabled IRQ11 (SCSI2) Enabled 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, **I**nterrupt **R**e**Q**uests, 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 On, 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 (SCSI1)
- IRQ11 (SCSI2)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **Personal Computer Interconnect**, 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.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PnP/PCI Configuration Setup

PnP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto (ESCD)	Menu Level >
IRQ Resources	Press Enter	
DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for USB	Enabled	
INT Pin 1 Assignment	Auto	
INT Pin 2 Assignment	Auto	
INT Pin 3 Assignment	Auto	
INT Pin 4 Assignment	Auto	
↑ ↓ → ← 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 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.

The settings are: Enabled and 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 “>”). The settings are: 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 resource.

PCI/VGA Palette Snoop

Leave this field at *Disabled*. The settings are Enabled, Disabled.

Assign IRQ for VGA

Leave this field at *Enabled*. The settings are Enabled, Disabled.

Assign IRQ for USB

Leave this field at *Enabled*. The settings are Enabled, Disabled.

PC Health Status (Optional)

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PC Health Status

Current CPU1 Temp.	40°C/104°F	Item Help
Current CPU2 Temp.	30C/ 86F	
Current CPUFAN1 Speed	0RPM	
Current CPUFAN2 Speed	0RPM	
CPU1 Vcore	1.64V	Menu Level >
CPU2 Vcore	1.98V	
3.3V	3.31V	
5V	4.95V	
12V	11.64V	
↑↓ →← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Current CPU1 Temp.

This item shows the current CPU1 temperature.

Current CPU2 Temp.

This item shows the current CPU2 temperature.

Current CPUFAN1 Temp.

This item shows the current CPUFAN1 speed.

Current CPUFAN2 Temp.

This item shows the current CPUFAN2 speed.

CPU1 Vcore/CPU2 Vcore

This item shows the current system voltage.

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	Enabled	Item Help
CPU Host Clock (CPU/PCI)	Default	
CPU1 Clock Ratio	x 3	Menu Level >
CPU2 Clock Ratio	x 3	
CPU1 Vcore Select	Default	
CPU2 Vcore Select	Default	
↑↓ →← 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 allows you to enable/disable auto detect DIMM/PCI Clock. The settings are: Enabled, Disabled.

CPU Host Clock (CPU/PCI)

This item allows you to select the CPU Host/PCI Clock.

CPU1/CPU2 Clock Ratio

This item allows you to set the CPU1/CPU2 Clock Ratio.

CPU1/CPU2 Vcore Select

This item allows you to select the CPU1/CPU2 system voltage .

Type the password, up to eight characters in length, and press <Enter>. The password typed 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 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.

PASSWORD DISABLED.

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 your system is rebooted. This would prevent unauthorized use of your computer.

You 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.

VIA Chipset Driver

4

The MS-6362 mainboard is paired with the VIA VT82C686B south bridge. Highly advanced, the south bridge combines an integrated 2D/3D engine with DVD hardware acceleration, AC-97 audio support for SoundBlaster Pro and FM synthesis legacy audio.

Chapter 4 contains the following topics:

Audio Features	4-2
System Requirements	4-2
Driver Setup & Usage Procedures for Windows® 98	4-3
Driver Setup & Usage Procedures for Windows® NT	4-5

Audio Features

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

System Requirements

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

Computer	Intel® Celeron™/Pentium® III FC-PGA
Monitor	VGA Support, minimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	VIA® 694DP/VT82C686B chipset

Driver Setup & Usage Procedures for Windows® 98

Insert the CD-title into your CD-ROM drive. The CD will auto-run and will display the four icons in the monitor “VIA Chipset Drivers”, “VIA AC97 PCI Sound Drivers” and “Download VIA Drivers”. In order to install the drivers correctly, you must install the “Via Chipset Drivers” first, and then install the “VIA AC97 PCI Sound Drivers”.

VIA Chipset Drivers installation procedure:

- 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. This will show the setup screen.
 - 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 four drivers “VIA Atapi Vendor Support Driver”, “AGP VxD Driver”, “VIA Chipset Function’s Registry” and “IRQ Routing Miniport Driver”. Select all four drivers and click on “Next”.
 - Step 5:** The setup program will request you to choose “Install VIA Atapi Vendor Support Driver”. Please select “Install” and click “Next” to continue.
 - Step 6:** Click to enabled DMA Mode, Please select “Install” and click “Next” to continue.
 - Step 7:** 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 8:** The setup program will let you choose between “Install VIA Chipset Functions Registry” or “Uninstall VIA Chipset Functions Registry”. Please select “Install VIA Chipset Functions Registry” and then click “Next”.
- Step 9:** The setup program will let you choose between “Install VIA IRQ Routing Miniport Driver” or “Uninstall VIA IRQ Routing Miniport Driver”. Please select “Install VIA IRQ Routing Miniport Driver”
- 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.

VIA AC97 PCI Sound Drivers installation procedure:

- 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. This will show the setup screen.
- Step 3:** Click on “VIA AC97 PCI Sound Drivers” icon and the screen will show “VIA AC97 PCI Sound Drivers”.
- Step 4:** Click “Next” to proceed and the screen will show “Install”, or “Remove”. Select “Install” and then click on “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 AC97 Audio Drivers Installation.

Driver Setup & Usage Procedures for Windows® NT

Install Windows® NT 4.0 Service Pack 3 or the latest version before installing the VIA drivers.

Insert the CD-title in the CD-ROM drive. The CD will auto-run and will display four icons on the screen “VIA Chipset Drivers”, “VIA AC97 PCI Sound Drivers” and “Download VIA Drivers”. In order to install the drivers properly, install the “VIA Chip Drivers” first and then install the “VIA AC97 PCI Sound Drivers”.

VIA Chipset Drivers Installation Procedure:

- 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. This will show the setup screen.
- Step 3:** Click on “VIA Chipset Drivers” icon and the screen will show “VIA Service Pack 4.XX”.
- Step 4:** Click “Next” to proceed and the screen will show “Install”, “Uninstall” or “Enable/Disable Ultra DMA for IDE Driver”. Select “Install” and then click on “Next”.
- Step 5:** Please click on “Yes, I want to restart my computer”.

VIA AC97 PCI Sound Drivers Installation Procedure:

- 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. This will show the setup screen.
- Step 3:** Click on “VIA AC97 PCI Sound Drivers” icon and the screen will show the “VIA PCI Audio Drivers” setup screen. Click “Next” to continue
- Step 4:** The setup program will show “Install” or “Remove” in the screen. Select “Install” and click “Next”
- Step 5:** The setup program will show the following on the screen:

Please choose “Add” from the next window and add the following device:
VIA AC97 PCI Audio Device
VIA MIDI External Port

Then click “OK”.

- Step 6:** Follow the steps shown in **Step 5** to finish the VIA AC97 PCI Audio Drivers Installation.

Ultra160 SCSI Driver

5

The Adaptec Ultra160 is a storage I/O solution ideally matched to the ever-increasing demands of bandwidth-hungry applications. The Ultra160 SCSI (LVD) technology, delivers twice the speed of Ultra2 SCSI and four times that of Ultra Wide SCSI. It is 240% faster than UDMA's maximum data rate of just 66 MBytes/sec.

To ensure data integrity and reliability with high performance, Ultra160 SCSI includes two new additional features—CRC (Cyclical Redundancy Checking) and Domain Validation. CRC checks all transferred data, adding significantly to data integrity. Domain Validation intelligently verifies system configuration for improved reliability.

The Adaptec Ultra160 SCSI cards protect the integrity of your data and provide reliable connectivity. The advanced new features of the Ultra160 SCSI cards, such as CRC, detect and minimize such errors during data transfer, thereby providing the most reliable solution.

Chapter 5 contains the following topics:

Device Drivers	5-2
System Requirements	5-2
Driver Setup & Usage Procedures for Windows® 95	5-3
Driver Setup & Usage Procedures for Windows® 98	5-8
Driver Setup & Usage Procedures for Windows® NT v4.0	5-12
Installing the DOS Mode CD-ROM Drivers	5-14

Device Drivers

The Ultra160 provides one driver file for each operating system. Use the table below to determine the correct driver for your operating system.

Windows NT	adpu160m.sys
Windows 95/98	adpu160m.mpd

System Requirements

The following are the minimum and recommended requirements needed to install the Ultra160 SCSI driver.

Computer	Intel® Celeron™/Pentium® III FC-PGA
Monitor	VGA Support, minimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98 or Windows® NT 4.0
CD-ROM	Double Speed or Higher
Chipset	VIA® 694DP/VT82C686B chipset

Driver Setup & Usage Procedures for Windows® 95

If you are performing a first time Windows 95 installation, see the “Installing the Driver When Installing Windows 95” section. If Windows 95 is already installed on your system, see the “Updating the Driver for Windows 95” section.

Note: Windows 95 shipped in two different version - the Retail Edition and the OEM Service Release 2 (or OSR2) Edition. Both versions function the same, but the process of installing drivers is different.

To determine which version you have, follow these steps:

- Step 1:** Select Control Panel under Settings from the Start Menu.
- Step 2:** Double-click the “System” icon.
- Step 3:** Under the “General” tab, it will display the version number of Windows 95 under the System category.
- Step 4:** If it displays “4.00.950”, you have the Retail Edition installed. If it displays “4.00.950 B” or “4.00.950 C”, you have OSR2.x installed.

Installing the Driver When Installing Windows 95

Note: Follow the Windows 95 installation manual to install Windows 95.

If your Windows 95 CD came with a Windows 95 Boot Diskette, you will need to update the Windows 95 Boot Disk. Copy the file `ASPI8U2.SYS` and `ASPICD.SYS` from the DOS directory of the Adaptec Ultra160 driver diskette to the Windows 95 Boot Disk. Refer to the sections “**Update Windows 95/98 installation diskettes**” and “**Install CD-ROM drivers on a DOS bootable diskette or hard drive**” on page 5-15/5-16 if you are unsure how to do this.

- Step 1:** If “New Hardware Found” is displayed, select “Driver from disk provided by hardware manufacturer”.
- Step 2:** Insert the Adaptec Ultra160 diskette into the floppy drive and type `a:\win95` as the path; follow the on-screen instructions.
- Step 3:** If you are prompted to reboot the system, select “no” if you have a dual channel adapter or if you have multiple Ultra160 adapters. Then repeat steps 1 through 3 for each SCSI channel until all Ultra160 adapters are found. Otherwise, select “Yes” to reboot the system.

Updating the Driver for Windows 95 (Retail version)

To update or install the ADPU160M.MPD driver if Windows 95 is already installed, follow these instructions:

Step 1: Start Windows 95.

Step 2: Click the Start button on the Windows 95 task bar, and then point to Settings.

Step 3: Click Control Panel.

Step 4: Double-click the System icon.

Step 5: On the Device Manager tab, click the plus sign next to the SCSI controller icon.

Note: If Windows 95 cannot determine the type of host adapter installed in your computer, a yellow question mark labeled Other devices appears instead of the SCSI controller icon. To continue, click the plus sign next to the question mark; a yellow question mark labeled PCI SCSI Bus Controller then appears.

Step 6: Double-click the Ultra160 Family host adapter you wish to update, or if a yellow question mark labeled PCI SCSI Bus Controller is displayed, double-click the question mark.

Step 7: Insert the Adaptec Ultra160 Family Manager Set Diskette into drive A:.

Step 8: Select the Driver tab.

Note: If the version of Windows 95 you are using now displays a window with a Update Driver button instead of a Change Driver button, the remainder of your install procedure is covered in Updating the Driver for Windows 95, Version OSR 2.x

Step 9: Click Change Driver. You may be asked to select the hardware type; if so, select SCSI Controllers.

Step 10: Click the Have Disk button and enter a:\win95 as the path.

Step 11: Click OK.

Step 12: Select the Adaptec Ultra160 Family host adapter, and click OK.

Step 13: Again, click OK. The driver is now installed.

Step 14: You must restart your computer for the changes to take effect. Click Yes to restart your computer. Click No to return to the system properties window.

Updating the Driver for Windows 95 (OSR2.x)

This section covers the remaining steps to updating the driver on Windows 95 OSR2.x.

Note: If you have not already done so, follow the instructions in "Updating the Driver for Windows 95" section above.

Step 1: Click Update Driver.

Step 2: Insert the Adaptec Ultra160 Family Manager Set diskette into drive A:.

Step 3: In the Update Device Driver Wizard, select Yes, and click Next.

- Step 4:** Select Other locations.
- Step 5:** Under the Location edit box, type a:\win95, then click OK.
- Step 6:** Click the Finish button.
- Step 7:** At the message “Please insert the disk labeled ‘Ultra160 Family Manager Set Installation Disk’”, insert the Adaptec Ultra160 Family Manager Set diskette for Windows 95 and click OK.
- Step 8:** Another dialog box, Copying Files, appears with the message “The file ‘ADPU160M.MPD’ on Ultra160 Family Manager Set Installation Disk could not be found ...”. Type a:\win95 in the Copy Files from the edit box and click OK. The driver is now installed.
- Step 9:** You must restart your computer for the changes to take effect. Click Yes to restart your computer. Click No to return to the system properties window.

Note: If you attempt to re-update the driver again, at step 3 above you will need to select No, click Next, and follow the on-screen instructions to re-update.

Driver Setup & Usage Procedures for Windows® 98

If you are performing a first time Windows 98 installation, see the “Installing the Driver When Installing Windows 98 section. If Windows 98 is already installed on your system, see the “Updating the Drive r for Windows 98” section.

Installing the Driver When Installing Windows 98

Step 1: You will need to update the Windows 98 Boot Disk that came with your Windows 98 CD. Copy the file ASPI8U2.SYS and ASPICD.SYS from the DOS directory of the Adaptec Ultra160 Family Manager Set driver diskette to the Windows 98 boot Disk. Refer to the sections “**Update Windows 95/98 installation diskettes**” and “**Install CD-ROM drivers on a DOS bootable diskette or hard drive**” on page 5-15/5-16 if you are unsure how to do this.

Step 2: Power on the system, insert the updated Windows 98 Boot Disk into the floppy drive and the Windows 98 CD into the CD-ROM drive. Wait for the system to boot from the floppy.

Step 3: At the “Microsoft Windows 98 Startup Menu” screen, select,

“1. Start Windows 98 setup from CD-ROM.” Follow the on-screen instructions to continue Windows 98 setup. Setup will run and restart your computer. If you are given an option, always select option “1. Start Windows 98 setup from CD-ROM.” Windows 98 installation will continue for some time.

Note: If at any time during installation Windows 98 needs files from the CD and it is not able to find the CD-ROM, cancel all file copies until you can install the driver for your SCSI device. You will be able to reinstall these cancelled devices after the SCSI driver and operating system is installed.

- Step 4:** When you see the “Add New Hardware Wizard” screen and “PCI SCSI Bus Controller” is displayed, click Next.
- Step 5:** Select “Search for the best driver...”, click Next.
- Step 6:** Select “Specify a location” and enter A:\WIN98 in the space provided. Insert the Adaptec Ultra160 Family Manager Set diskette into the floppy drive and click Next.
- Step 7:** When you see “Adaptec Ultra160 PCI SCSI Controller”, click Next.
- Step 8:** When you see “Windows has finished installing the software that your new hardware device requires.”, click Finish.
- Step 9:** If you are prompted to reboot the system, select “no” if you have a dual channel adapter or if you have multiple Ultra160 adapters. Then repeat steps 4 through 8 for each SCSI channel until all Ultra160 adapters are found. Otherwise, select “Yes” to reboot the system.
- Step 10:** Follow the on-screen instructions to complete the Windows 98 installation if needed.

Updating the Driver for Windows 98

To update or install the Adaptec Ultra160 Family Manager Set driver if Windows 98 is already installed, follow these instructions:

- Step 1:** Start Windows 98.
- Step 2:** Click the Start button on the Windows 98 task bar, and then point to Settings.
- Step 3:** Click Control Panel.
- Step 4:** Double-click the System icon.
- Step 5:** On the Device Manager tab.
- Step 6:** Click the plus sign next to the SCSI controller icon.

Note: If Windows 98 cannot determine the type of host adapter installed in your computer, a yellow question mark labeled "Other devices" appears instead of the SCSI controller icon. To continue, click the plus sign next to the question mark; a yellow question mark labeled "PCI SCSI Bus Controller" then appears.

- Step 7:** Double-click the Ultra160 Family host adapter you wish to update, or if a yellow question mark labeled "PCI SCSI Bus Controller" is displayed, double-click the question mark.
- Step 8:** Select the Driver tab.
- Step 9:** Click Update Driver.
- Step 10:** Insert the Adaptec Ultra160 Family Manager Set diskette into drive A:.

Step 11: In the Update Device Driver Wizard, click Next.

Step 12: Select the button for “Search for a better driver than the one your device is using now. (Recommended)”. Click Next.

Step 13: Select “Specify a location”.

Step 14: In the “Specify a location” edit box, type “a:\win98”, then click Next.

Step 15: When Windows indicates “Location of driver: A:\WIN98\ADPU160M.INF”, click Next.

Step 16: Windows will now copy the files for your host adapter.

Step 17: Click “Finish”.

Step 18: You must restart your computer for the changes to take effect.

Driver Setup & Usage Procedures for Windows® NT v4.0

This section describes installing and using the Adaptec Ultra160 SCSI Driver for Windows NT. If you are performing a first time Windows NT installation, see “Completing a Fresh Windows NT v4.0 Installation from CD-ROM” section below. If Windows NT is already installed on your system, see the “Updating the Adaptec driver under Windows NT v4.0” section.

Completing a Fresh Windows NT v4.0 from CD-ROM

- Step 1:** Ensure your Windows NT v4.0 CD is inserted into the CD-ROM drive.
 - Step 2:** Start your system. Immediate press and release the F6 key when you see the following message:
“Setup is inspecting your computer’s hardware configuration...”
 - Step 3:** When prompted, press S to specify an additional device.
 - Step 4:** Press Enter to select Others; insert the Adaptec Ultra160 Family Manager Set for Windows NT diskette in your floppy drive.
 - Step 5:** Use the arrow keys to highlight and select the desired driver, then press Enter.
 - Step 6:** To add other host adapters that are not part of the Ultra160 Family, press S and repeat from Step 4 for each additional adapter and insert the appropriate driver disk.
 - Step 7:** Press Enter to continue with the Windows NT operating system setup. Follow the instructions onscreen and in the Windows NT documentation to complete the installation.
-

Updating the Adaptec driver under Windows NT v4.0

Follow these instructions only if Windows NT v4.0 is already installed.

- Step 1:** Click the Start button on the Windows NT task bar, and the point to Settings.
- Step 2:** Open the Control Panel, double-click on SCSI Adapters.
- Step 3:** Select the Drivers tab, and click the Add button.
- Step 4:** In the “Install Driver” window, click the Have Disk button.
- Step 5:** Insert the Adaptec Ultra160 Family Manager Set for Windows NT diskette.
- Step 6:** At the “Copy manufacturer’s files from” text box, type a:\nt4, and click OK.
- Step 7:** At the Install Driver window, select the driver, then click OK.
- Step 8:** In response to “Do you want to use the currently installed driver(s) or install new one(s)”, select the New button.
- Step 9:** Type a:\nt4 and click continue. The driver is now installed.
- Step 10:** You must restart your computer for the changes to take effect. Click Yes to restart your computer. Click No to return to the SCSI Adapters window.

Installing the DOS Mode CD-ROM Drivers

Install the CD-ROM drivers only if DOS mode access to a SCSI CD-ROM drive is required. DOS mode access is needed during certain Windows 95 and Windows 98. If Windows 95, Windows 98, is already installed, or if the CD-ROM drive is not connected to a SCSI adapter, these drivers do not need to be copied or installed. However, you may choose to install these drivers if you are having trouble accessing your CD-ROM from Windows 95/98.

Note: You do not need these drivers for Windows NT or UNIX.

The following CD-ROM driver files are provided on the Adaptec Ultra160 Family Manager Set driver diskette:

`\DOS\ASPI8U2.SYS`

`\DOS\ASPICD.SYS`

You might also need the file MSCDEX.EXE available from MS-DOS 6.0 or higher, Windows boot diskettes, or the Microsoft website.

Update Windows 95/98 Installation Diskettes

To update the Windows 95 or 98 Boot Diskette that came with your Windows 95 or 98 CD, make a backup of the Boot Diskette. Then copying ASPI8U2.SYS and ASPICD.SYS from the DOS directory of the Adaptec Ultra160 Family Manager Set driver diskette to the root directory of the Windows 95 or Windows 98 Boot Diskettes. The steps to do this will depend on your system setup. This is easier to do on a system that has DOS, Windows 95, or Windows 98 already installed. Here is one example:

Insert the Adaptec Ultra160 Family Manager Set driver diskette in drive a: and at the DOS prompt type:

```
copy a:\dos\aspi8u2.sys c:\
copy a:\dos\aspicd.sys c:\
```

Then insert the backup Windows Boot Disk in drive a: and type:

```
copy c:\aspi8u2.sys a:\
copy c:\aspicd.sys a:\
```

To begin installation, follow the section titled "Microsoft Windows 95/98 Installation".

Install CD-ROM Drivers on a DOS Bootable Diskette or Hard Drive

Follow these steps if you want to enable SCSI CD-ROM access from either a bootable DOS diskette or a bootable hard drive.

The following systems files will be modified:

- CONFIG.SYS
- AUTOEXEC.BAT

Step 1: Copy the files ASPI8U2.SYS and ASPICD.SYS from the DOS directory of the Adaptec Ultra160 Family Manager Set driver diskette to the appropriate drive (either A: or C:) and directory in which they will be used (for example c:\SCSI).

Step 2: Modify the CONFIG.SYS file for loading ASPI8U2.SYS and ASPICD.SYS.

If you do not currently have a CONFIG.SYS file, create this file in the A:\ or C:\ directory. Otherwise, add these lines to the existing CONFIG.SYS.

Below is an example of what the command strings should look like:

```
DEVICE=C:\SCSI\ASPI8U2.SYS/D
DEVICE=C:\SCSI\ASPICD.SYS/D:ASPICD0
```

Note: Make sure you customize the command strings above to reflect the actual location or path of the ASPI8U2.SYS and ASPICD.SYS files.

Step 3: Modify the AUTOEXEC.BAT file for loading MSCDEX. If you do not currently have an AUTOEXEC.BAT file, create this file in the A:\ or C:\ directory. Otherwise, add these lines to the existing AUTOEXEC.BAT.

```
C:\DOS\MSCDEX.EXE /D:ASPICD0 /M:12
```

This will assign the CD-ROM to the next available driver letter, typically D: if there is only one DOS drive.

Note: Make sure you customize the command strings above to reflect the actual location or path of the MSCDEX.EXE file. For example if your MSCDEX.EXE file is located in the c:\windows\command directory, either copy the MSCDEX.EXE file to the DOS directory above or change C:\DOS to reflect the new path.

Note: If you are using MS-DOS 5.0 and do not already have MSCDEX.EXE, you will need to either upgrade to MS-DOS 6.0 or above, or download MSCDEX.EXE from Microsoft BBS or CompuServe forum.

Step 4: Reboot your system. You are now able to access your CD-ROM drive from the command line and from Windows or Netware.