

VL-603



MAINBOARD USER'S MANUAL

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VL-603

SAMPLE MAINBOARD JUMPER SETTINGS (v.1.1)

RELEASE DATE : February, 1998

Handling Precautions

WARNING:

1. Static electricity may cause damage to the integrated circuits on the mainboard.
Before handling any mainboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced.
Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.

Observe the following basic precautions when handling the mainboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, boards and modules with the "gold finger" connectors plugged into the expansion slot. It is best to handle system components by their mounting bracket.

The above methods prevent static build-up and cause it to be discharged properly.

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This User's Manual

This manual is designed to guide you and facilitate your use of the VL-603 mainboard. It contains a description of the design and features of the mainboard, and also includes useful information for changing the configuration of the board and the system it is installed in. The manual is divided into three chapters, which contains the main body of information normally referred to by users.

- **Chapter 1 – Overview**
gives an overview of the mainboard and describes its major components and features.
- **Chapter 2 – Installation Procedures**
gives instructions on how to set up the mainboard, including jumper settings and CPU installation guides.
- **Chapter 3 – BIOS Setup**
briefly explains the mainboard's BIOS system setup in general and tells you how to run it and change the system configuration settings.
- **Chapter 4 – Software Utilities**
briefly explains the mainboard's supporting software utilities and provides the necessary information to improve system performance and introduces each of them with detailed installation procedures.

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| <p>NOTE : The material in this manual is for information only and is subject to change without notice. We reserve the right to make changes in the product design without reservation and without notification to its users. We shall not be liable for technical or editorial omissions made herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.</p> |
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The manual provides useful information that you will need to know should you decide to modify or upgrade the configuration of the mainboard and the system it is installed in. If you do not have the confidence to upgrade the mainboard

Notice

yourself, we advise that you consult a qualified service technician for assistance.

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Overview

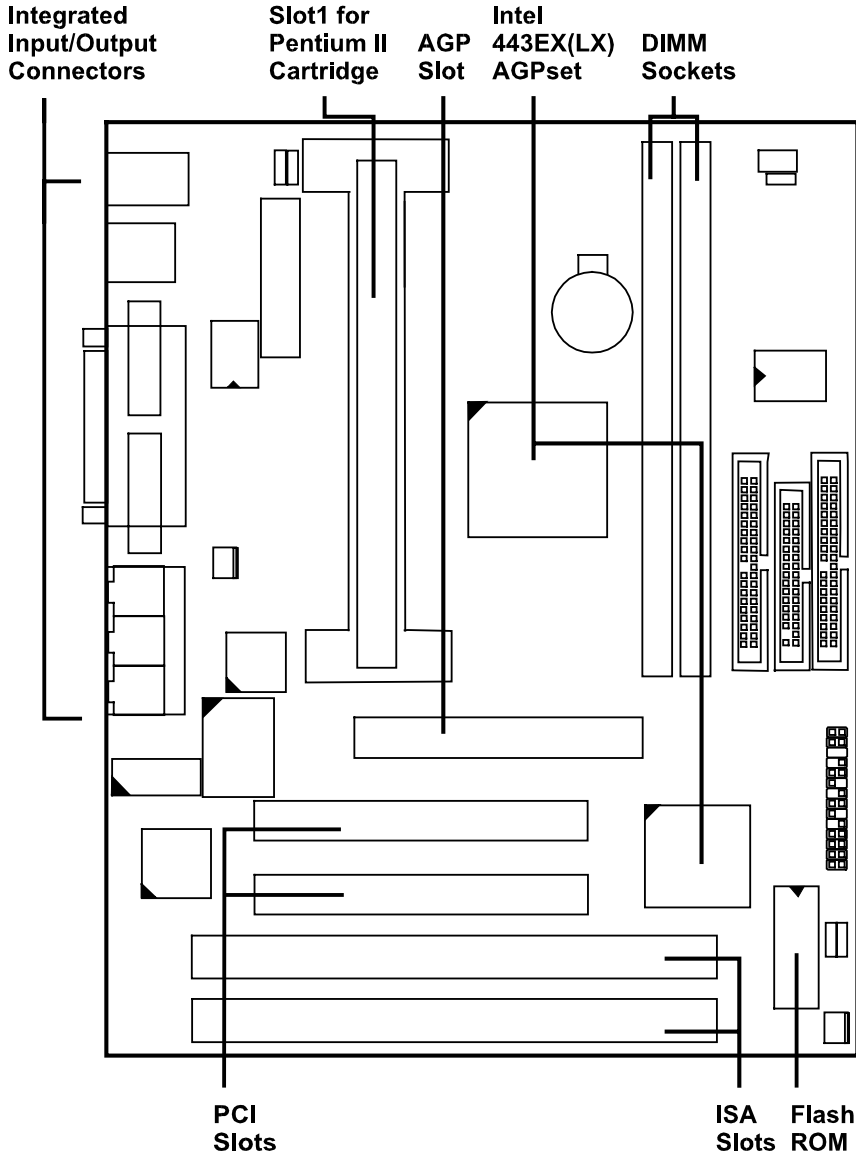
Based on the advanced Intel 443EX(LX) AGPset, the VL-603 combines blistering Pentium® II processor performance with support for the new Accelerated Graphics Port (AGP) interface which provides a dedicated path for memory-intensive graphics applications – delivering faster system performance and arcade-quality 3D graphics. Also, it has a host bus frequency of 66MHz to run a range of Intel Pentium® II processors. Compliant with the Microsoft PC97 standard at both the hardware and BIOS levels, the VL-603 comes with support for ISMP™ which continuously checks the thermal (available on the Deschutes CPU) and voltage status of your system and adjusts, when necessary, and reports any discrepancies to the network administrator. The VL-603 reduces the total cost of ownership with support for DMI (Desktop Management Interface) and Intel LANDesk® Client Manager (LDCM) software which allows for optimized system manageability across a network.

Package Checklist

Please check that your package contains all the items listed below. If you discover any item is damaged or missing, please contact your vendor.

- The VL-603 mainboard
- This user's manual
- One IDE ribbon cable
- One floppy disk drive ribbon cable
- Retention mechanism and heat sink support brace
- Software utilities

The VL-603 Mainboard



Main Features

The VL-603 mainboard comes with the following high-performance features:

- **Easy Installation**
BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, MS Windows™ 95, Windows™ NT, and OS2™.
- **Flexible Processor Support**
Onboard 242-pin Slot1 supports leading-edge processors:
Intel Pentium® II processors 233/266/300MHz, Deschutes™ 333MHz or Celeron™ 266MHz with MMX™ technology.
- **Leading Edge Chipset**
Intel 82443EX(LX) AGPset includes a CPU interface controller, integrated SDRAM controller, synchronous ISA bus controller, integrated power management unit, concurrent PCI (PCI v.2.0 and 2.1), and USB.
- **Ultra-fast Level II Cache on CPU Card**
Supports 256KB (with Pentium® II CPU) / 512KB (with Pentium® II or Deschutes CPU) / 0KB (Celeron™ CPU) cache memory.
- **Versatile Main Memory Support**
Accepts up to 256MB DRAM in two banks using DIMMs of 8, 16, 32, 64, 128MB with support for SDRAM or EDO memory.
- **Onboard Accelerated Graphics Port (AGP)**
One 32-bit AGP slot supports 1x/2x AGP VGA cards for superior 3D video and graphics performance with transfer speeds up to 264MB/second under 1x AGP transfer mode and up to 528MB/second under 2x AGP transfer mode.
- **ISA and PCI Expansion Slots**
Two 16-bit ISA and two 32-bit PCI expansion slots provide all the room you need to install a full range of add-on cards.
- **USB Support**
Two USB ports integrated in the rear I/O panel allow convenient, high-speed Plug and Play connections to the growing number of USB compliant external peripheral devices on the market.
- **IrDA Connector**
An onboard IR connector for wireless infrared connection is available.

- **Enhanced PCI Bus Master IDE Controller Support**
Integrated enhanced PCI bus master IDE controller features two dual-channel connectors that accept up to four enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives.
- **Super Multi Input/Output (I/O) Support**
Integrated ITE IT8679F-A or IT8671F/RF Plug and Play multi-I/O chipset features two high-speed UART 16550 compatible serial ports, one IR connector, one EPP/ECP capable parallel port, and one FDD connector.
- **Remote Wake-Up Support**
One LAN wake-up connector supports LAN cards equipped with either the Intel SB82558B or Intel SB82557 chipsets, etc. for remote wake-up functionality.
- **Intel LANDesk® Client Manager (LDCM) Software Support**
LDCM is a Desktop Management Interface (DMI)-compliant application for local and network management of desktop client systems. The application reduces the number of help desk calls by supplying the user with self diagnostics such as a PC health meter and local alert for potential problems.
- **SB-LINK™ for the Audio Card with PCI Bus**
The 2x3 pin SB-LINK™ header accepts the Creative CT4600 series PCI audio cards with PCI solution to connect the Legacy Sound Blaster® compatible audio to the PCI bus.

Advanced Features

- **Optimized Intel Pentium II® Processor Performance**
The mainboard utilizes the advanced features of the Intel 443EX(LX) AGPset to optimize the unrivaled performance of the Intel Pentium® II processor with MMX™ technology, allowing you to enjoy a richer video, audio, digital imaging and communications experience from the latest generation of multimedia software.

■ **Onboard Accelerated Graphics Port (AGP)**

The 32-bit AGP bus provides a dedicated 66MHz/133MHz path from the graphics card to the system memory offering a much greater bandwidth than the 32-bit PCI bus does which currently operates at a speed of 33MHz. AGP enabled 3D graphics cards can directly access main memory across this fast path instead of using local memory. This is especially important for memory-intensive 3D graphics applications so as to produce a more detailed 3D texture, greater clarity and higher levels of resolution without compromising system performance. This mainboard is fully compliant with the AGP 1.0 specification. To make use of the improved AGP performance, the mainboard should be installed with SDRAM type memory and the VGA card and drivers should also be fully AGP compliant. Using Microsoft's forthcoming versions of Microsoft Windows™ 98 and Windows™ NT v.5.0 which implement DirectDraw™ will allow the system to take full use of AGP's benefits without the need to install additional drivers.

■ **CPU Thermal Monitoring Alert (optional, available on the Deschutes CPU only)**

A special heat sensor monitors the CPU temperature to make sure that the system is operating at a safe heat level. If the temperature is too high, the sensor automatically generates an SMI (System Management Interrupt) to slow down the CPU clock frequency. At the same time, the system warns you that the CPU is overheating (if LDCM is installed). CPU utilization is restored to normal levels when the temperature returns to a safe level.

■ **System Over-Voltage Report (optional)**

System voltage levels are monitored to ensure a stable current to critical mainboard components. The monitored range for system voltage is -12V, -5V, +12V, +5V, +3.3V ± 10%.

DMI (Desktop Management Interface)

DMI (Desktop Management Interface) is a standard for organizing system configuration information. Using DMI, computer configuration can be made much simpler, quicker, and easier. Computer system configuration information can be read and modified from remote locations, permitting remote configurations and boot up. (Requires DMI-enabled components.)

Intel LANDesk® Client Manager (optional)

The mainboard comes with optional Intel LANDesk® Client Manager, a Desktop Management Interface (DMI) compliant application that simplifies local and network management of desktop client systems by monitoring PC health, and by alerting local and designated remote users of potential problems. For example, the application will indicate when memory usage is high or hardware components are likely to fail. This capability provides new levels of manageability to deliver a lower cost of PC ownership by maximizing system uptime, increasing user productivity and reducing the number of help desk calls. Because it is industry-standard DMI compliant, Intel LANDesk® Client Manager can be used with other DMI-based network management tools.

The LANDesk® Client Manager, including the client interface and the administrator's console used by the network administrator or manager, has a graphical user interface for ease-of-use and understanding and can be used for monitoring PC health, configuring key system files and viewing inventory. Please read Chapter 4 of this manual for more information.

Installation Procedures

The VL-603 has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you must complete the following steps:

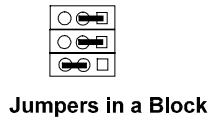
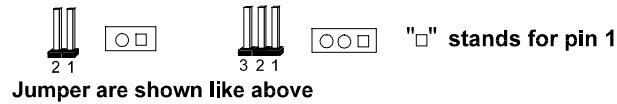
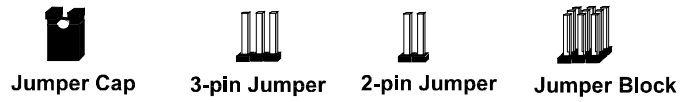
- Step 1 -
Set system jumpers
- Step 2 -
Install system RAM modules
- Step 3 -
Install the Central Processing Unit (CPU)
- Step 4 -
Install expansion cards
- Step 5 -
Connect ribbon cables, cabinet wires, and power supply
- Step 6 -
Set up BIOS software (see Chapter Three)
- Step 7 -
Set up supporting software tools (see Chapter Four)

WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm. Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

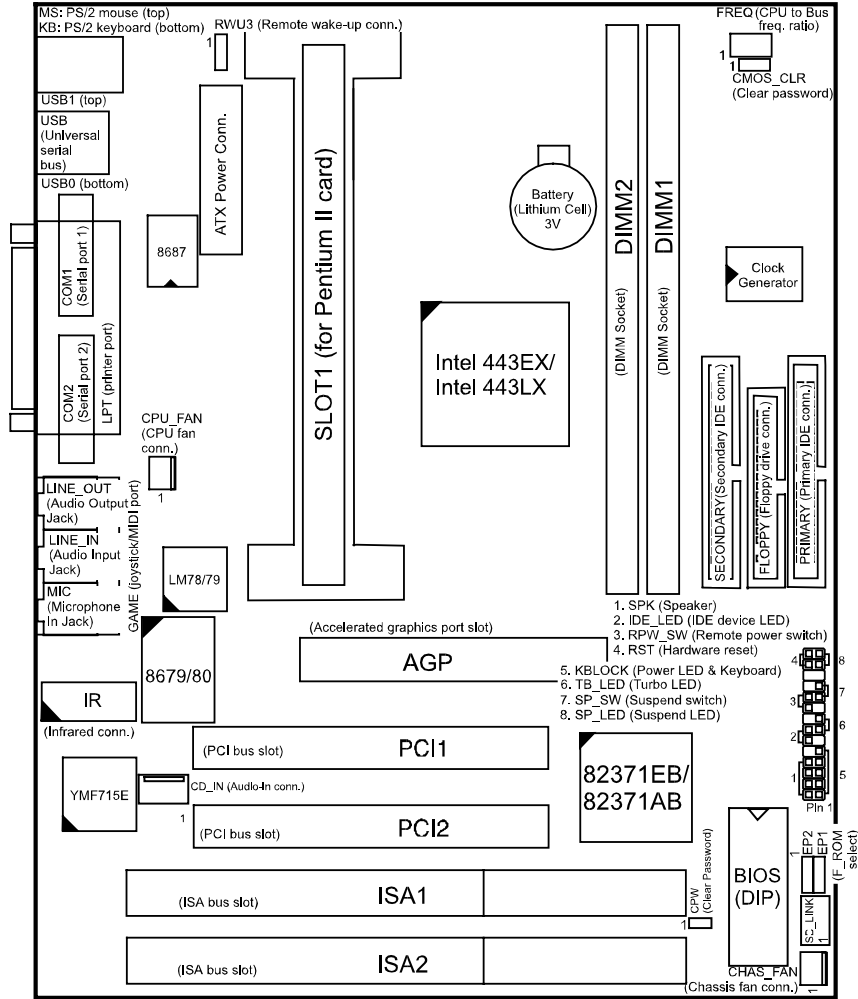
1). Set System Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A "1" is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:



NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

Components That Concern Installation



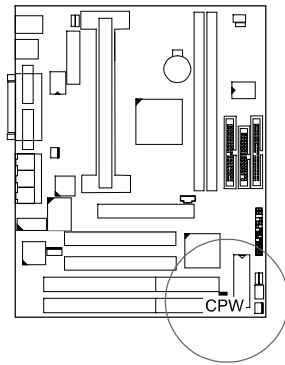
VL-603 Mainboard Manual

| ONBOARD MARK | MEANING | PAGE |
|--------------------|---|------|
| CMOS_CLR | Clear CMOS Data | 11 |
| CPW | Clear Password | 11 |
| EP1, EP2 | Flash ROM Type Select | 12 |
| FREQ | CPU to Bus Frequency Ratio Select | 21 |
| | | |
| AGP | Accelerated Graphic Port Slot | 22 |
| DIMM1, DIMM2 | DIMM Memory Module Support | 13 |
| PCI1, PCI2 | PCI Bus Expansion Slot (32-bit) | 22 |
| ISA1, ISA2 | ISA Bus Expansion Slot (16-bit) | 22 |
| SLOT1 | Central Processing Unit (CPU) Cartridge Support | 15 |
| | | |
| ATX_PWR | ATX Power Connector | 32 |
| CD_IN | CD-ROM Drive Audio-out Connector | 33 |
| CHAS_FAN | System Case Fan Connector | 27 |
| COM1, COM2 | Serial Port | 23 |
| CPU_FAN | CPU Fan Connector | 26 |
| F_PNL * | Connectors for LEDs and Switches on Front Panel | 29 |
| FDD | Floppy Diskette Drive Connector | 28 |
| GAME | Joystick/MIDI Connector | 26 |
| IR | Infrared Port Module Connector | 31 |
| LINE-IN | Audio Line-In Jack | 25 |
| LINE-OUT | Audio Line-Out Jack | 25 |
| LPT1 | Parallel Port | 24 |
| MIC | Audio Microphone Jack | 25 |
| PRIMARY, SECONDARY | IDE Device Connector | 29 |
| PS1 | PS/2 Keyboard and Mouse Connector | 24 |
| RWU | Remote Wake-Up Connector | 32 |
| SB_LINK | PCI Add-On Audio Card Connector | 33 |
| USB | Universal Serial Bus Connector | 25 |

* includes PW_LED, KB_LOCK, TB_LED, SP_SW, SPK, SP_LED, IDE_LED, RPW_SW, and RST connectors. (See Page 29 for more information.)

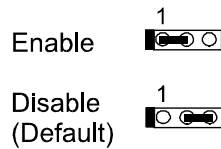
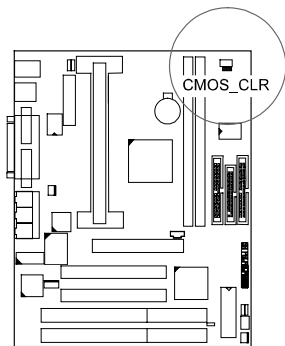
Clear Password: CPW

This jumper allows you to enable or to disable the password configuration. You may need to enable this jumper by shorting it with a jumper cap if you forget your password. To clear the password setting: (1) Turn off your computer, (2) Short this jumper by placing a jumper cap on it, (3) Turn on your computer, (4) Hold down the <Delete> key during bootup and enter BIOS Setup to re-enter user preferences, (5) Turn off your computer, (6) Remove the jumper cap, (7) Turn on your computer for the new settings to take effect.



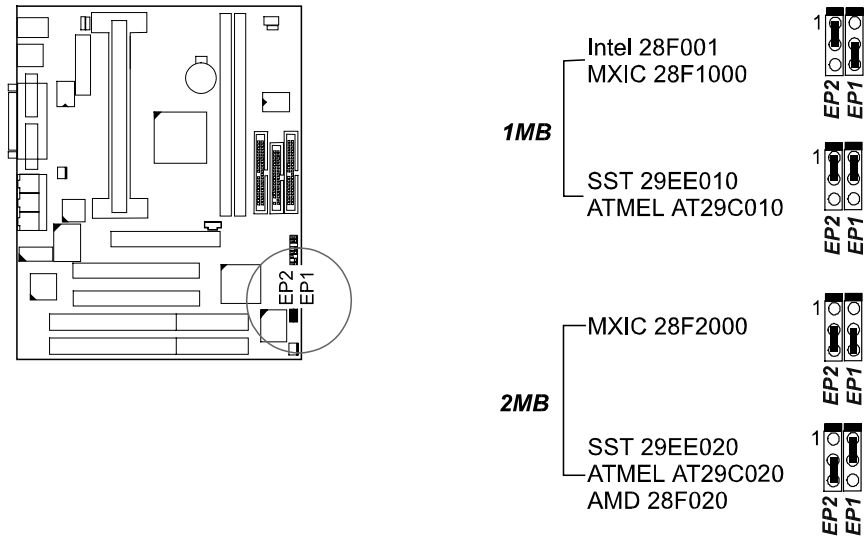
CMOS Clear: CMOS_CLR

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer, (2) Move this jumper to “Enable,” (3) Move the jumper back to “Disable,” (4) Turn on your computer, (5) Hold down the <Delete> key during bootup and enter BIOS Setup to re-enter user preferences.



Flash ROM Type Select: EP1, EP2

These two jumpers allow you to configure the flash ROM chip. This jumper setting was installed with the manufacturer's default. If you want to know the flash ROM type installed on this mainboard, partially remove the sticker on top of the chip.



2). Install RAM Modules

SDRAM

The working space of the computer is the Random Access Memory (RAM). The system cannot act upon data unless it is loaded into RAM. When more memory is added, the working memory of the computer is larger, thereby increasing total performance. The mainboard RAM is comprised of two 168-pin Dual In-line Memory Modules (DIMMs). Each DIMM socket is able to support up to 128MB lightning-fast SDRAM.

SDRAM is an advanced new memory technology that helps boost overall system performance with its ability to synchronize all operations with the processor clock signal. This makes the implementation of control interfaces easier, and speeds up column access time. SDRAM features an on-chip burst counter that can be utilized to increment column addresses for very fast burst access, which means that SDRAM allows new memory access to be initiated before the preceding access has been finished.

Installation Procedures

Before making DRAM upgrades you should verify the type and speed of the RAM currently installed from your dealer. Installing mixtures of RAM types other than those described in this manual will have unpredictable results.



DIMM

RAM Module Configuration

The mainboard provides two onboard DIMM sockets allowing 3.3V (unbuffered) SDRAM DIMM modules. Either 8, 16, 32, 64, or 128MB DIMM can be installed on these two sockets. The maximum total memory supported is up to 256MB.

| Memory Socket | Memory Module | | Total Memory |
|-------------------------------------|---|----|--------------|
| DIMM Sockets 1&2 (DIMM1 & DIMM2) | 8MB, 16MB, 32MB, 64MB, 128MB 168-pin 3.3V EDO/SDRAM DIMM | x2 | |
| | Total System Memory (Max 256MB) | = | |

Or one 256MB DIMM on either DIMM1 or DIMM2.

| Memory Socket | Memory Module | | Total Memory |
|--------------------------------------|--------------------------------------|----|--------------|
| DIMM Sockets 1/2 (DIMM1 or DIMM2) | 256MB 168-pin 3.3V EDO/SDRAM DIMM | x1 | 256MB |
| | Total System Memory (Max 256MB) | = | 256MB |

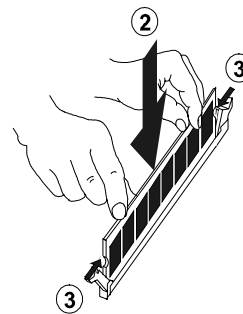
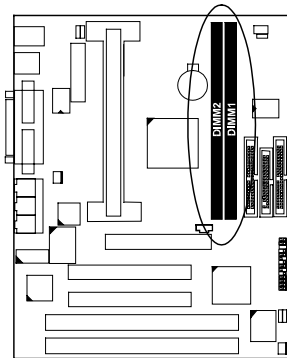
NOTE : This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster. ECC memory (available if onboard chip is the Intel 82443LX) and parity check is also supported.

Install DIMMs

SDRAM DIMM modules have different pin contact on each side and therefore have a higher pin density. Complete the following procedures when installing DIMMs:

NOTE: Do not use memory modules with more than 24 chips per module. Modules with more than 24 chips exceed the design specifications of the memory subsystem and will be unstable. The notch on the DIMM module will shift between left, center, or right to identify the type and also to prevent the wrong type from being inserted into the DIMM slot on the mainboard. Ask your retailer for the specifications before purchasing.

1. Locate the DIMM slots on the mainboard. (See the following figure.)



2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.

Remove DIMMs

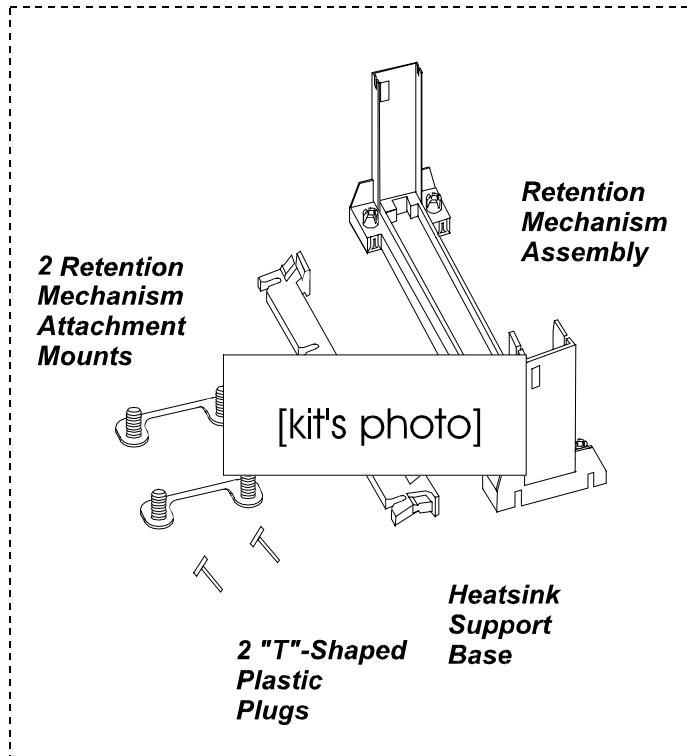
Press the clips with both hands to remove the DIMM.

3). Install the Central Processing Unit (CPU)

The mainboard comes with either a Retention Mechanism Kit for the Pentium® II and Deschutes CPU or a pre-installed Retention Mechanism for the Celeron™ CPU.

Retention Mechanism Kit (for Pentium® II or Deschutes CPU)

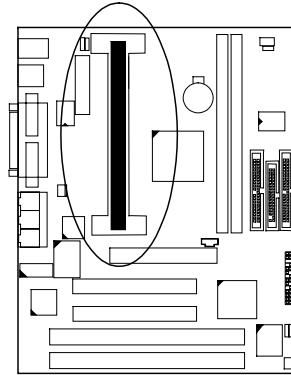
The mainboard comes with a Retention Mechanism Kit as shown below. If any piece is missing, please contact your local mainboard dealer to help you.



NOTE: If the two "T"-shaped plastic plugs and heatsink support base are not in the package, they may be already installed onboard by the manufacturer.

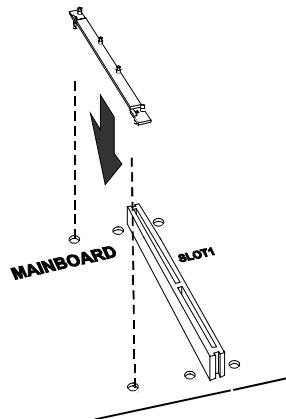
CPU Module Installation

1. Locate Slot1 on the mainboard.



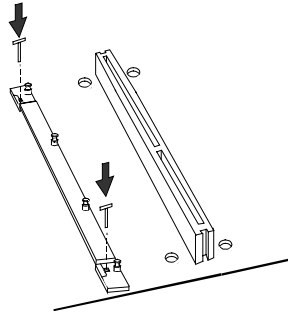
NOTE : If the two “T”-shaped plastic plugs and heatsink support base are already installed onboard by manufacturer, skip steps 2 and 3.

2. Place the Heatsink Support Base on the mainboard as shown.

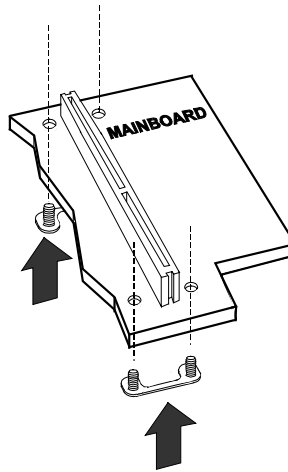


Installation Procedures

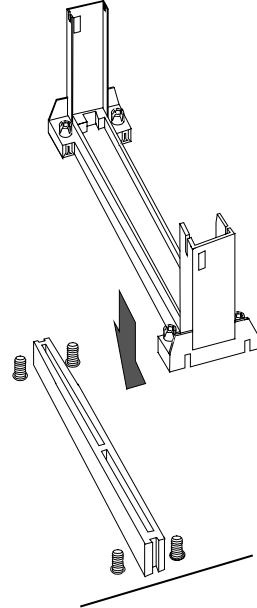
3. Affix it to the mainboard by inserting one “T”-shaped plastic plug into the hole on each end.



4. Install the two Retention Mechanism Attachment Mounts on to the underside of the mainboard.

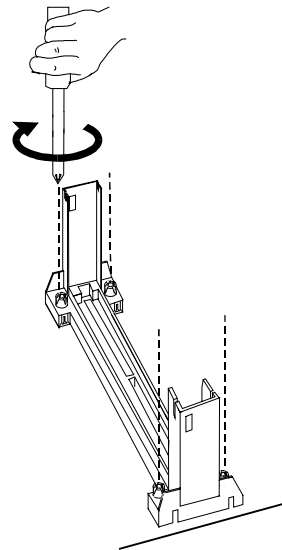


5. Place the Retention Mechanism Assembly on the mainboard, on top of the Retention Mechanism Attachment Mounts.

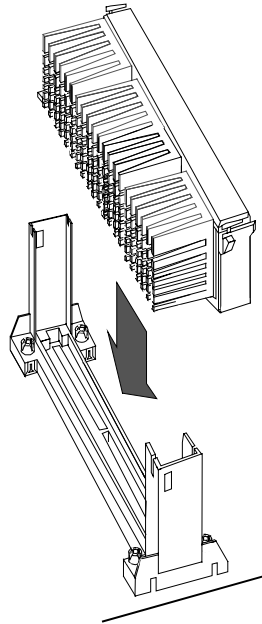


6. Affix the Retention Mechanism Assembly with four screws.

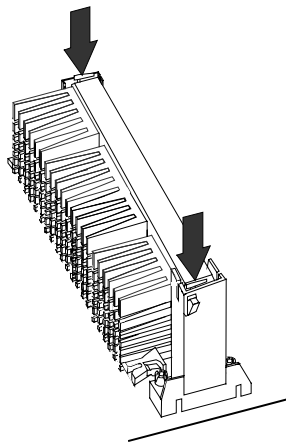
WARNING : Excessive torque may damage the mainboard. Tighten captive nuts to no more than 6 ± 1 inch/pound.



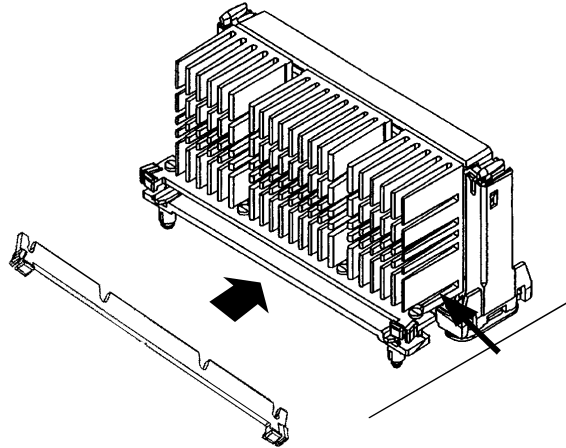
7. Slide the CPU module into the Retention Mechanism Assembly.



8. Press the buttons on either end of the CPU module.



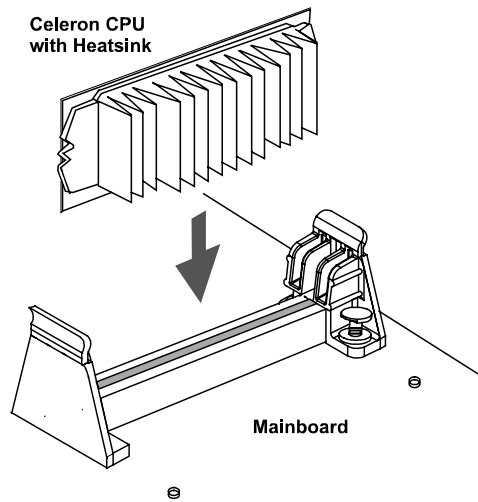
9. Horizontally slide the Heatsink Top Support into the lowest gap on the CPU module heatsink to hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



WARNING: If the heatsink is not mounted tightly against the CPU cartridge, the CPU will overheat.

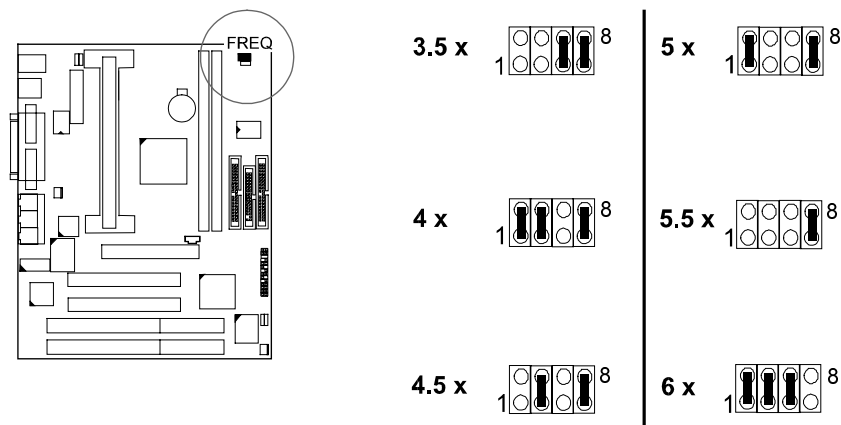
Retention Mechanism (for Celeron™ CPU)

The mainboard comes with a Retention Mechanism for the Celeron™ CPU. Insert the CPU as shown below.



CPU to Bus Frequency Ratio: *FREQ*

This jumper is used set the ratio of the internal frequency of the CPU to the bus clock.

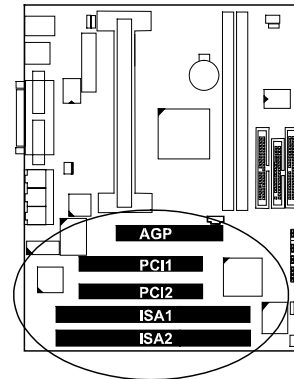


Intel Pentium II CPUs

| FREQUENCY | BUS FREQUENCY | RATIO |
|-----------|---------------|-------|
| 333 MHz | 66 MHz | 5 x |
| 300 MHz | 66 MHz | 4.5 x |
| 266 MHz | 66 MHz | 4 x |
| 233 MHz | 66 MHz | 3.5 x |

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. The mainboard features one 32-bit AGP bus, two 16-bit ISA bus, and two 32-bit PCI bus expansion slots.



CAUTION : Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards. Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.

To install an expansion card, follow the steps below:

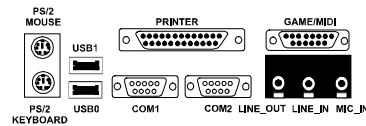
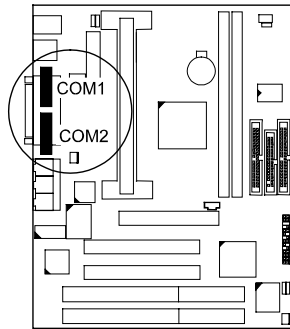
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this "rocking" motion until the add-on card is firmly seated inside the expansion slot.

5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.
6. Replace the computer system's cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

5). Connect Cables and Power Supply

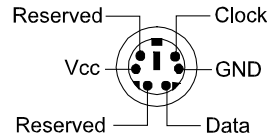
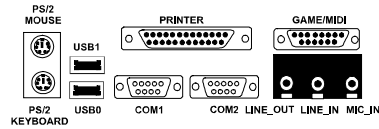
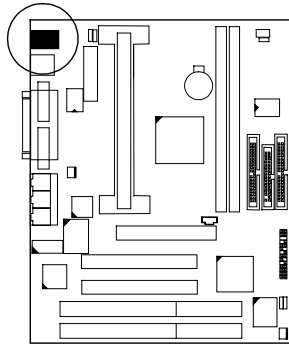
Serial Port Connectors: COM1, COM2

These two 9-pin D-sub male connectors allow you to connect with your devices that use serial ports, such as a serial mouse or a modem. Usually, it is recommended to connect the serial mouse to COM1 and the fax/modem to COM2.



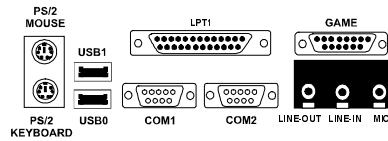
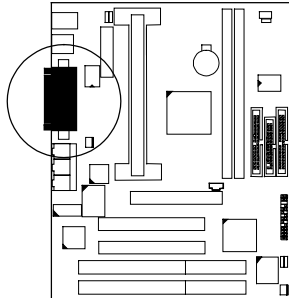
PS/2 Keyboard and Mouse Connector: PS1

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse. The PS/2 keyboard connector is for a standard keyboard using a PS/2 plug (mini DIN). This connector will not allow standard AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards. The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards may be using IRQ12.



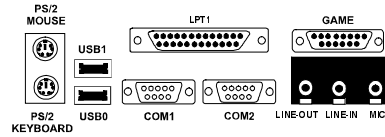
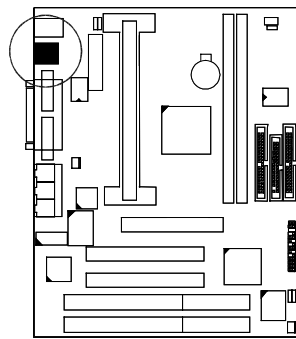
Printer Connector: LPT1

This 25-pin D-sub female connector is attached to your printer. Parallel printers must be connected to the parallel port (LPT1).



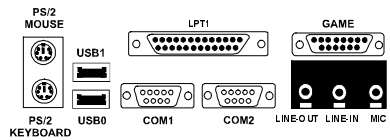
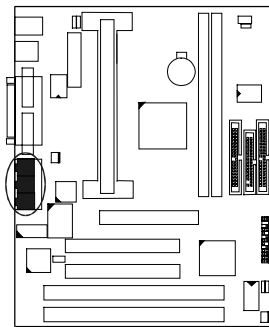
Universal Serial Bus Connectors: USB

These two connectors are used for linking with USB peripheral devices. Make sure to set the item USB Controller at *Enabled* under Integrated Peripherals of the BIOS Setup. Also, the version of the operating system you are using must be Windows 95 OSR2.1 or above. Otherwise, USB supplement must be installed if you are using an older version.



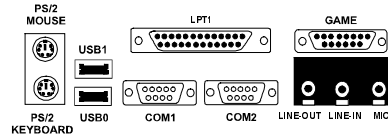
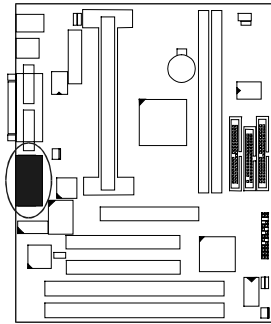
Audio Port Connectors: LINE-OUT, LINE-IN, MIC

LINE-OUT can be connected to headphones or preferably powered speakers. LINE-IN allows tape players or other audio sources to be recorded by your computer or played through the LINE-OUT. MIC allows microphones to be connected for inputting voice.



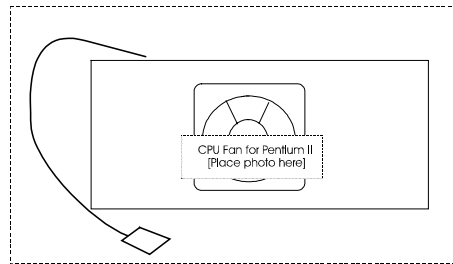
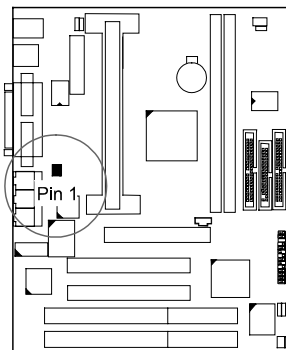
Joystick/MIDI Connector: GAME

This 15-pin female connector allows you to connect game joysticks or game pads for playing games. Connect MIDI devices for playing or editing audio.

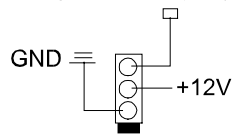


CPU Fan Connector: CPU_FAN

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full-on mode, the fan will turn back on. The photo below shows a type of CPU fan for the Pentium II cartridge. The CPU cartridge does not need a heatsink with this type of fan installed. Refer to the CPU fan installation manual for more information.

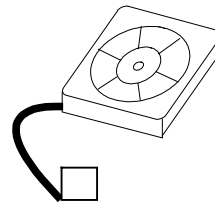
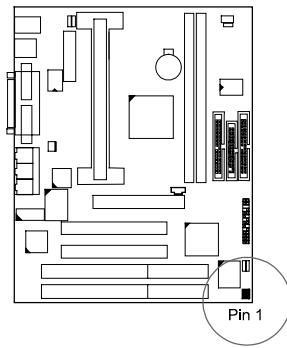


LM78 (SENSE1 signal)



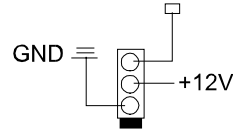
System Case Fan Connector: CHAS_FAN

The 3-pin connector links to your cooling fan on the system case to lower the system temperature. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan's plug to the mainboard taking into consideration the polarity of the connector.



[case fan photo]

LM78 (SENSE2 signal)

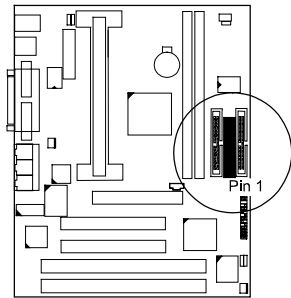


WARNING: Without sufficient air circulation, the CPU cartridge may overheat and cause damage to both the CPU cartridge and the mainboard. Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

Floppy Diskette Drive Connector: FDD

This 34-pin block connector connects to your floppy disk drive using the cable that is provided with this mainboard. After connecting the single end to the mainboard, connect the two plugs on the other end to the floppy drives. (Pin 4 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 4 plugged.)

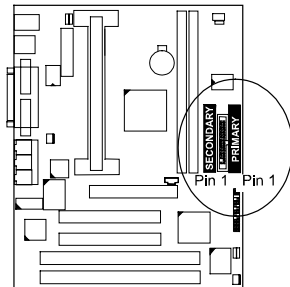
NOTE: Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The four corners of the connectors are labeled on the mainboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with the second drive connector no more than 6in. (15cm) from the first connector.



IDE HDD Device Connectors: PRIMARY, SECONDARY

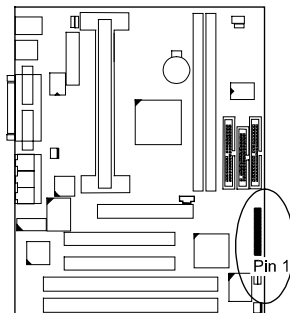
These two connectors, which supports the provided IDE hard disk ribbon cable, are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. After connecting the single end to the mainboard, connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to the documentation of your hard disk for the jumper settings. BIOS now supports SCSI device or IDE CD-ROM bootup. Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged.

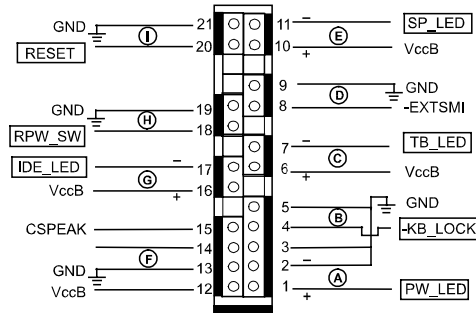
TIP : You may configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector. You may install one operating system on an IDE drive and another on a SCSI drive and select the boot disk through BIOS Setup.



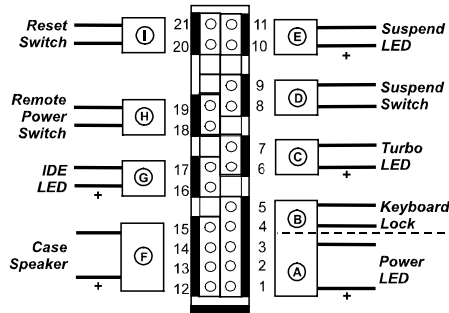
Front Panel Block Connector: F_PNL

This block connector includes: PW_LED, KB_LOCK, TB_LED, SP_SW, SPK, SP_LED, IDE_LED, RPW_SW, and RST connectors.





Pinout Assignment



Connection Diagram

PW_LED (A) – 2-pin male
The system power LED lights when the system is powered on.

KB_LOCK (B) – 2-pin male
Allows the keyboard to access the system; if shorted, prevents keyboard access to the system (this feature is used in combination with the case-mounted keylock).

TB_LED (C) – 2-pin male
Indicates if the system speed is in normal or turbo.

SP_SW (D) – 2-pin male
Suspend mode switch allows user to manually place the system into a suspend mode or “green” mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This connector connects to the case-mounted suspend switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SP_SW connector cannot wake-up the system).

SP_LED (E) – 2-pin male
Indicates the system is in Suspend mode when LED is lit. In the event that your system case does not have a Suspend LED, you can connect it instead to the Turbo LED.

SPK (F) – 4-pin male
This connector connects with the case-mounted speaker.

IDE_LED (G) – 2-pin male
This connector supplies power to the cabinet’s IDE activity LED. Indicates the IDE HDD I/O (read and write activity by devices connected to the Primary and Secondary IDE connectors) is being accessed when LED is lit. If the case-mounted LED does not light, try reversing the 2-pin plug.

RPW_SW (H) – 2-pin male

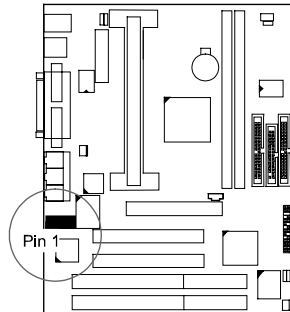
This connector is connected with the remote power (soft power) switch. If an ATX power supply is installed, pushing this switch will turn off and on the system power instead of the power switch on the power supply.

RST (I) – 2-pin male

This connector connects to the case-mounted reset switch for rebooting the system without having to turn off power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply.

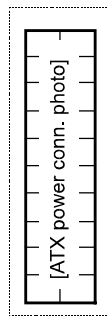
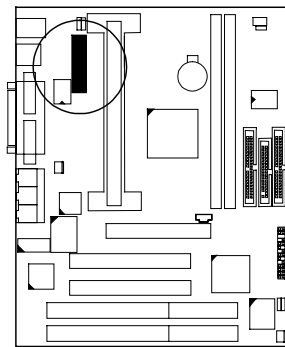
Infrared Connector: IR

The 2x5 pin header is used for connecting to the infrared (SIR) port and allows transmission of data to another system which also supports the IR feature. This module mounts to a small opening on system cases that supports this feature.



ATX Power Connector: ATX_PWR

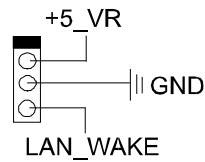
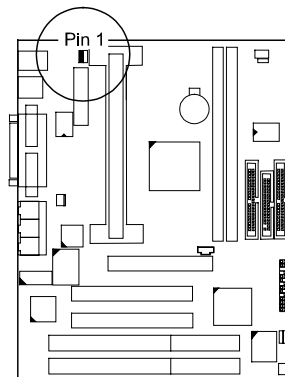
This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.



| | | | |
|---------|-----------|-----------|----------|
| +3.3V | 11 | 1 | +3.3V |
| -12V | 12 | 2 | +3.3V |
| GND | 13 | 3 | GND |
| -PWR_ON | 14 | 4 | +5V |
| GND | 15 | 5 | GND |
| GND | 16 | 6 | +5V |
| GND | 17 | 7 | GND |
| -5V | 18 | 8 | PWR_GOOD |
| +5V | 19 | 9 | 5V_VR |
| +5V | 20 | 10 | +12V |

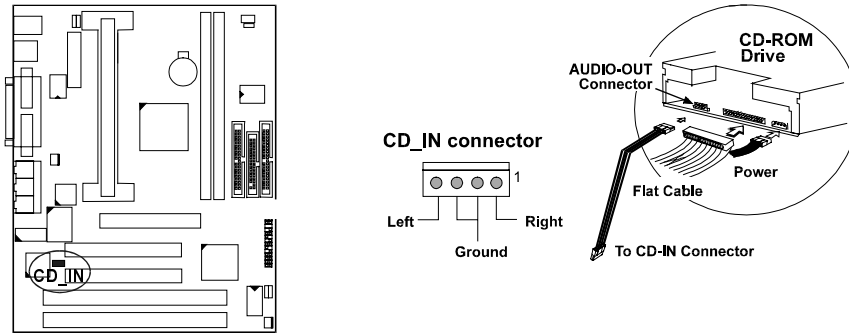
Remote Wake-Up Connector: RWU

This 3-pin connector allows the remote LAN server to wake up the system with a LAN card installed. Refer to the LAN card installation guide for details.



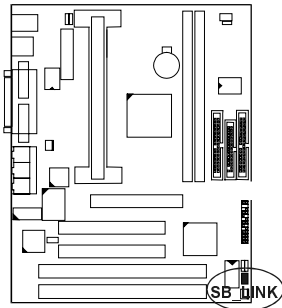
CD-ROM Drive Audio-out Connector: CD_IN

This 4-pin block connector is linked to the AUDIO-OUT port of your CD-ROM drive by a cable which comes with it. Read the CD-ROM drive manual for detailed installation instructions.



PCI Add-on Audio Card Connector: SB_LINK

This 6-pin male connector allows you to connect to your PCI add-on audio card connector cable when not using the onboard sound chip.



Power Connection Procedures

1. After all jumpers and connections are made, close the system case cover.
2. Make sure that all switches are in the off position.
3. Connect the power supply cord into the power supply located at the back of your system case as instructed by the power supply user's manual.
4. Connect the power cord into a power outlet that is equipped by a surge protector (if available).
5. You may then turn on your devices in the following order:
 - a. The display monitor
 - b. External SCSI devices (starting with the last device on the chain)
 - c. The system power
6. The power LED on the front panel will light. The monitor LED may light after the system's if it complies with "Green" standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test (POST). Recheck the jumper settings and verify if the RAM module, hard disk drive, CPU, and add-on cards are connected properly or call the retailer for assistance.
7. During power-on, hold down the <Delete> key to enter BIOS Setup. Follow the next chapter for instructions.

Powering Off the Computer

You must first exit or shut down the operating system before switching off the power switch. For Windows 95 users, select "Shut Down the Computer" from the "Start" button and the system will power off automatically after Windows shut down, provided that the item Soft-Off by PWR-BTTN under the Power Management Setup is set at *Instant-Off*.

Setting BIOS Feature

All computer mainboards provide a Setup utility program for specifying the system configuration and settings. If the mainboard came in a computer system, the proper configuration entries may have already been made. If you are installing the mainboard or reconfiguring the system or if you receive a Run Setup message, you will need to enter new setup information.

The mainboard comes with the Award BIOS chip that contains the ROM Setup information of the system. This chip serves as an interface between the processor and the rest of the mainboard's components. This chapter explains the information contained in the Setup program and tells you how to modify the settings according to the system configuration.

A Setup program built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. At power-on RAM testing, the message Press <Delete> key to enter Setup appears. If you are a little bit late pressing the mentioned key, POST (Power-On Self Test) will continue with its test routines, thus preventing you from calling up Setup. If you still need to call Setup, reset the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the Reset button on the system case. You can also restart by turning the system off and then back on again. But do so only if the first two methods fail. Use the arrow keys to select and press <Enter> key to run the selected program.

Main CMOS Setup

When you run Setup, the CMOS SETUP UTILITY main program screen will appear with the following options:

| | |
|---|--------------------------|
| ROM PCI/ISA BIOS (2A69JFU9) CMOS SETUP UTILITY AWARD SOFTWARE, INC. | |
| STANDARD CMOS SETUP | INTEGRATED PERIPHERALS |
| BIOS FEATURES SETUP | SUPERVISOR PASSWORD |
| CHIPSET FEATURES SETUP | USER PASSWORD |
| POWER MANAGEMENT SETUP | IDE HDD AUTO DETECTION |
| ENF/PCI CONFIGURATION | SAVE & EXIT SETUP |
| LOAD BIOS DEFAULTS | EXIT WITHOUT SAVING |
| LOAD SETUP DEFAULTS | |
| Esc : Quit | ↑ ↓ → ← : Select Item |
| F10 : Save & Exit Setup | (Shift)F2 : Change Color |
| | |

A section at the bottom of the above screen displays the control keys for this screen. Take note of these keys and their respective uses. Another section just below the control keys section displays information on the currently highlighted item in the list.

Load Defaults

The “Load BIOS Defaults” option loads the minimized settings for troubleshooting. “Load Setup Defaults” on the other hand, is for loading optimized defaults for regular use. Choosing defaults at this level will modify all applicable settings.

Standard CMOS Setup

The “Standard CMOS Setup” option allows you to record some basic system hardware configuration and set the system clock and error handling. If the mainboard is already installed in a working system, you will not need to select this option anymore. However, if the configuration stored in the CMOS memory on the mainboard gets lost or damaged, or if you change the system hardware configuration, you will need to re-specify the configuration values. The configuration values usually get lost or corrupted when the power of the onboard CMOS battery weakens.

Setting BIOS Feature

| ROM PCI/ISA BIOS (2A69JF09) | | | | | | | | |
|------------------------------------|--------|------|------|------|---------|-------|--------|------|
| STANDARD CMOS SETUP | | | | | | | | |
| AWARD SOFTWARE, INC. | | | | | | | | |
| Date (mm:dd:yy) : Fri, Feb 20 1998 | | | | | | | | |
| Time (hh:mm:ss) : 9 : 43 : 17 | | | | | | | | |
| HARD DISKS | TYPE | SIZE | CYLS | HEAD | PRECOMP | LANDE | SECTOR | MODE |
| Primary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Primary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Secondary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Secondary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Drive A : 1.44M, 3.5 in. | | | | | | | | |
| Drive B : None | | | | | | | | |
| Floppy 3 Mode Support : Disabled | | | | | | | | |
| Video : EGA/VGA | | | | | | | | |
| Halt On : All Errors | | | | | | | | |
| Base Memory: | | 0K | | | | | | |
| Extended Memory: | | 0K | | | | | | |
| Other Memory: | | 512K | | | | | | |
| Total Memory: | | 512K | | | | | | |
| ESC : Quit | | | | | | | | |
| F1 : Help | | | | | | | | |
| ↑ ↓ → ← : Select Item | | | | | | | | |
| PU/PD/+/- : Modify | | | | | | | | |
| (Shift)F2 : Change Color | | | | | | | | |

The above screen provides you with a list of options. At the bottom are the control keys for this screen. Take note of these keys and their respective uses. User-configurable fields appear in a different color. If you need information on the selected field, press the <F1> key. The help menu will then appear to provide you with the information you need. The memory display at the lower right-hand side of the screen is read-only and automatically adjusts accordingly.

Date

To set the date, highlight the “Date” field and then press the page up/page down or +/- keys to set the current date. Follow the month, day and year format. Valid values for month, day and year are: Month: (1 to 12), Day: (1 to 31), Year: (up to 2079).

Time

To set the time, highlight the “Time” field and then press the page up/page down or +/- keys to set the current time. Follow the hour, minute and second format. Valid values for hour, minute and second are: Hour: (00 to 23), Minute: (00 to 59), Second: (00 to 59), just press the <Enter> key twice if you do not want to modify the current settings.

Hard Disks

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks, the first of which is the “master” and the second is the “slave”.

Specifications for SCSI hard disks need not be entered here since they operate using device drives and are not supported by any BIOS. If you installed a SCSI controller card, please refer to their respective documentations on how to install the required SCSI drivers.

For an IDE hard disk drive setup, you can:

- Use the *Auto* setting for detection during bootup.
- Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.
- Enter the specifications yourself manually by using the “User” option.

The entries for specifying the hard disk type include CYLS (number of cylinders), HEAD (number of read/write heads), PRECOMP (write precompensation), LANDZ (landing zone), SECTOR (number of sectors) and MODE. The SIZE field automatically adjusts according to the configuration you specified. The documentation that comes with the hard disk should provide you with the information regarding the drive specifications.

The MODE entry is for IDE hard disks only, and can be ignored for MFM and ESDI drives. This entry provides three options: *Normal*, *Large*, *LBA*, or *Auto*. Set MODE to the *Normal* for IDE hard disks smaller than 528MB; set it to *LBA* for drives over 528MB that support Logical Block Addressing (LBA) to allow large IDE hard disks; set it to *Large* for drives over 528MB that do not support LBA. *Large* type of drives can only be used with MS-DOS and is very uncommon. Most IDE drives over 528MB support the *LBA* mode.

Auto Detection of Hard Disks on Bootup

For each field: Primary Master, Primary Slave, Secondary Master, and Secondary Slave, you can select *Auto* under the TYPE and MODE fields. This will enable auto detection of your IDE drives during Bootup. This will allow you to change your hard drives (with the power off) and then power on without having to reconfigure your hard drive type. If you use older hard drives which do not support this feature, then you must configure the hard drive in the standard method as described above by the “User” option.

| |
|--|
| <p>NOTE : After the IDE hard disk information has been entered into BIOS, new IDE hard disks must be partitioned (such as with FDISK.EXE, a DOS-based utility) and then formatted before data can be read from and written on. Primary IDE hard drives must have its partition set to <i>active</i> (also possible with FDISK).</p> |
|--|

Drive A / Drive B

These fields record the types of floppy drives installed in the system. The available options for drives A and B are: *None* (default for Drive B); *360KB, 5.25 in.; 1.2MB, 5.25 in.; 720KB, 3.5 in.; 1.44MB, 3.5 in.* (default for Drive A); *2.88MB, 3.5 in.* To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left- or right-arrow key.

Floppy 3 Mode Support

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5inch diskette. This is normally disabled but you may choose from either: *Disabled* (default), *Drive A*, *Drive B*, and *Both*.

Video

Set this field to the type of video display card installed in the system. The options are: *EGA/VGA* (default), *Mono* (for Hercules or MDA), *CGA 40*, and *CGA 80*. If you are using a VGA or any higher resolution card, choose the “EGA/VGA” option.

Halt On

This field determines which types of errors will cause the system to halt. Choose from *All Errors* (default); *No Errors*; *All, But Keyboard*; *All, But Diskette*; and *All, But Disk/Key*.

Software Turbo Speed

BIOS supports the Software Turbo Speed feature used for adjusting the speed of play on some DOS games. Instead of pressing the Turbo Speed button located on the front panel of your system, simply press the <Ctrl>, <Alt>, and <+> keys simultaneously to enable the Turbo Speed feature; pressing the <Ctrl>, <Alt>, and <-> keys simultaneously will disable this feature.

BIOS Features Setup

The “BIOS Features Setup” option consists of configuration entries that allow you to improve the system performance, or lets you set up some system features according to your preference. Some entries here are required by the mainboard’s design to remain in their default settings.

| ROM PCI/ISA BIOS (2A69JF09) | |
|---------------------------------------|---|
| BIOS FEATURES SETUP | |
| AWARD SOFTWARE, INC. | |
| Virus Warning : Disabled | Video BIOS Shadow : Enabled |
| Detect Boot Virus By Trend : Enabled | C9000-CBFFF Shadow : Disabled |
| CPU Internal Cache : Enabled | CC000-CFFFF Shadow : Disabled |
| External Cache : Enabled | D0000-D3FFF Shadow : Disabled |
| Quick Power On Self Test : Enabled | D4000-D7FFF Shadow : Disabled |
| Boot From LAN First : Enabled | D8000-DBFFF Shadow : Disabled |
| Boot Sequence(LS120/ZIP100): A,C,SCSI | DC000-DFFFF Shadow : Disabled |
| Swap Floppy Drive : Disabled | |
| Boot Up Floppy Seek : Enabled | |
| Boot Up NumLock Status : On | |
| Typematic Rate Setting : Disabled | |
| Typematic Rate (Chars/Sec) : 6 | |
| Typematic Delay (Msec) : 250 | |
| Security Option : Setup | |
| PS/2 mouse function control: Enabled | |
| OS Select For DRAM > 64MB : Non-OS2 | |
| | ESC : Quit ↑↓←→ : Select Item |
| | F1 : Help PU/PD/+/- : Modify |
| | F5 : Old Values (Shift)F2 : Color |
| | F6 : Load BIOS Defaults |
| | F7 : Load Setup Defaults |

A section at the lower right of the screen displays the control keys you can use. Take note of these keys and their respective uses. If you need information on a particular entry, highlight it and press the <F1> key. A pop-up help menu will appear to provide you with the information you need. <F5> loads the last set values, <F6> and <F7> loads the BIOS default values and Setup default values, respectively.

Virus Warning

This field protects the boot sector and partition table of the hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate the system. The default setting is recommended because of conflicts with new operating systems. Installation of new operating systems require that you disable this feature to prevent disk write errors. The options are *Disabled* (default); *Enabled*.

Detect Boot Virus By Trend

When enabled, this field allows virus detection on the boot sector of the boot device (FDD/HDD) during bootup. The options are: *Enabled* (default); *Disabled*.

CPU Internal Cache / External Cache

These fields allow you to turn on or off the CPU's Internal and External built-in cache. The options are *Enabled* (default); *Disabled*.

Quick Power On Self Test

This field speeds up the Power-On Self Test (POST) routine by skipping re-testing a second, third, and fourth time. A complete test of the system is done on each test. The options are *Enabled* (default); *Disabled*.

Boot From LAN First

This field allows the system to first look for an operating system on the LAN (Local Area Network) if you have a LAN card with boot ROM installed in your system that is connected to a network server which supports this function. The options are: *Enabled* (default); *Disabled*.

Boot Sequence (LS120/ZIP100)

This field determines where the system looks first for an operating system. The setup default setting is to check first the floppy drive, then the hard drive, and then the SCSI device; that is, *A, C, SCSI*. The options are *A, C, SCSI* (default); *LS/ZIP, C, C, only*; *SCSI, C, A*; *SCSI, A, C*; *F, A, SCSI*; *E, A, SCSI*; *D, A, SCSI*; *CDROM, C, A*; *C, CDROM, A*; *C, A, SCSI*.

Swap Floppy Drive

When enabled, it allows you to switch the order in which the operating system accesses the floppy drives during boot up. The options are: *Disabled* (default); *Enabled*.

Boot Up Floppy Seek

When enabled, the BIOS will seek the floppy “A” drive one time. The options are *Enabled* (default); *Disabled*.

Boot Up NumLock Status

This field enables user to activate the Number Lock function upon system boot. The options are *On* (default); *Off*.

Gate A20 Option

When set at *Fast* will allow a faster access response under Protected Mode. The options are *Fast* (default); *Normal*.

Typematic Rate Setting

When enabled, you can set the two typematic controls listed next. The options are *Disabled* (default); *Enabled*.

Typematic Rate (Chars/Sec)

This field controls the speed at which the system registers repeated keystrokes. The options are *6* (default); *8*; *10*; *12*; *15*; *20*; *24*; and *30*.

Typematic Delay (Msec)

This field sets the time interval for displaying the first and second characters. The options are *250* (default); *500*; *750*; and *1000*.

Security Option

This field determines when the system prompts for the password. The default setting is *Setup*, where the system always boots up, and prompts for the Supervisor Password only when the Setup utility is called up. The other option is *System*, where the system prompts for the User Password every time you boot up. You can specify a password by using the *Supervisor Password* or *User Password* option from the main screen as explained later in this section. The options are: *Setup* (default); *System*.

PS/2 Mouse Function Control

This item allows the PS/2 mouse to have exclusive use of IRQ12. The options are: *Enabled* (default); *Disabled*.

OS Select For DRAM > 64MB

Allows you to specify which operating system you are using when installed DRAM is greater than 64MB. If the operating system you are using is IBM® OS/2™, select *OS2*, otherwise, stay with the default setting of *Non-OS2*. The options are: *Non-OS2* (default); *OS2*.

Video BIOS Shadow

This field allows you to change the video BIOS location from ROM to RAM. Relocating to RAM enhances system performance, as information access is faster than the ROM. The options are *Enabled* (default); *Disabled*.

C8000-CBFFF to DC000-DFFFF Shadow

These fields are used for shadowing other expansion card ROMs. If you install other expansion cards with ROMs on them, you will need to know which addresses the ROMs use to shadow them specifically. Shadowing a ROM reduces the memory available between 640KB and 1024KB by the amount used for this purpose. The options are *Disabled* (default); *Enabled*.

Chipset Features Setup

The “Chipset Features Setup” option controls the configuration of the mainboard’s chipset. Control keys for this screen are the same as for the previous screen.

Setting BIOS Feature

| ROM PCI/ISA BIOS (2A69JF09) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC. | | | |
|---|------------|----------------------------|--------------------|
| Auto Configuration | : Enabled | CPU Clock Frequency | : 66 MHz |
| DRAM Speed Selection | : 60ns | Spread Spectrum | : Disabled |
| MA Wait State | : Slow | Current System Temp. | : |
| EDO RAS# To CAS# Delay | : 3 | Current CPU Fan Speed | : |
| EDO RAS# Precharge Time | : 3 | Current Chassis Fan Speed: | |
| EDO DRAM Read Burst | : x333 | VCORE : | +3.3 (V) : |
| EDO DRAM Write Burst | : x222 | +5.0 (V) : | +12 (V) : |
| DRAM Data Integrity Mode | : Non-ECC | -12 (V) :- | -5.0 (V) :- |
| System BIOS Cacheable | : Enabled | | |
| Video RAM Cacheable | : Enabled | | |
| 8 Bit I/O Recovery Time | : 1 | | |
| 16 Bit I/O Recovery Time | : 2 | | |
| Memory Hole At 15M-16M | : Disabled | | |
| Delayed Transaction | : Disabled | | |
| AGP Aperture Size (MB) | : 64 | | |
| SDRAM CAS latency Time | : 3 | ESC : Quit | ↑↓←→ : Select Item |
| | | F1 : Help | PU/PD/+/- : Modify |
| | | F5 : Old Values (Shift) | F2 : Color |
| | | F6 : Load BIOS Defaults | |
| | | F7 : Load Setup Defaults | |

Auto Configuration

Allows you to set the type of DRAM used. This is to be set by a technician only. The options are: *Enabled* (default), *Disabled*.

DRAM Speed Selection

This item, which is available only when the above item Auto Configuration is set at *Enabled*, allows you to set the DRAM timing according to the type of DRAM installed in the system. The options are: *60ns* (default); *50ns*.

MA Wait State

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the memory address wait state. The options are: *Slow* (default); *Fast*.

EDO RAS# To CAS# Delay

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to define the time delay from DRAM CAS# active to CAS# active, depending on the CPU frequency and DRAM type used, whether 2 clocks or 3 clocks. The options are: *3* (default); *2*.

EDO RAS# Precharge Time

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to select the DRAM RAS# precharge time whether 3 clocks or 4 clocks. The options are: *3* (default); *4*.

EDO DRAM Read Burst

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the DRAM read burst timing depending on the CPU frequency and DRAM type used. The options are: *x333* (default); *x222*.

EDO DRAM Write Burst

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the DRAM write burst timing depending on the CPU frequency and DRAM type used. The options are: *x222* (default); *x333*.

DRAM Data Integrity Mode

This item provides software configurability for selecting between ECC (ECC generation and checking/correction) mode or non-ECC mode of operation of the DRAM interface. The options are: *Non-ECC* (default); *ECC* (default only if the onboard chip is the Intel 443LX and installed DIMM is with parity check).

System BIOS Cacheable

When enabled, allows the ROM area of F000H-FFFFH to be cacheable when the cache controller is activated. The options are *Enabled* (default), *Disabled*.

Video RAM Cacheable

Allows the video RAM to be cached to allow for faster execution. Leave on default setting of *Enabled* for better performance, otherwise *Disabled*. The options are *Enabled* (default), *Disabled*.

8 Bit I/O Recovery Time

This item sets the timing for 8-bit ISA cards. The options are: *1* (default); *2* to *7*, *NA*, *8*.

16 Bit I/O Recovery Time

This item sets the timing for 16-bit ISA cards. The options are: *2* (default); *3*, *NA*, *4*, *1*.

Memory Hole at 15M-16M

Enabling this feature reserves between 15MB and 16MB memory address space for expansion cards that specifically require this setting. This makes the memory for 15MB to 16MB unavailable to the system. Expansion cards can only access memory above 16MB. The options are *Disabled* (default), *Enabled*.

Delayed Transaction

When enabled, it allows the current PCI bus master to retry the current PCI bus master cycle and to accept the new PCI bus master request. It re-accepts the original PCI bus master and returns data to the original PCI bus master, thereby enhancing system performance. The options are: *Disabled* (default); *Enabled*.

AGP Aperture Size (MB)

This item allows you to select the main memory frame size for use by the add-on AGP card. The options are: *64* (default); *128*; *256*; *4*; *8*; *16*; *32*.

SDRAM CAS Latency Time

If the CAS latency of your installed SDRAM DIMM is 2, set it at 2 to enhance system performance. If the CAS latency is 3, stay with the default setting of 3. The options are: 3 (default); 2.

CPU Clock Frequency

This item shows you the ratio of the CPU external clock to the PCI bus clock. It is not user-configurable.

Spread Spectrum

This item allows you to take advantage of the center spread-type or down spread-type of spread spectrum. The options are *Disabled* (default); *1.5% (DOWN)*.

Current System Temp. / Current CPU Fan Speed / Current Chassis Fan Speed / VCORE: +3.3 (V) / +5.0 (V): +12 (V) / -12 (V): -5.0 (V)

These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. It is not user-configurable.

Power Management Setup

The “Power Management Setup” option allows you to reduce the power consumption of the system. This feature turns off the video display and shuts down the hard drive after a period of inactivity.

| ROM PCI/ISA BIOS (2A69JF09) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC. | | |
|---|----------------|---|
| Power Management | : Disabled | ** Reload Global Timer Events ** |
| EM Control by APM | : Yes | IRQ[3-7,9-15],NMI : Enabled |
| Video Off Method | : DPMS | Primary IDE 0 : Disabled |
| Video Off After | : Suspend | Primary IDE 1 : Disabled |
| MODEM Use IRQ | : 3 | Secondary IDE 0 : Disabled |
| Doze Mode | : Disable | Secondary IDE 1 : Disabled |
| Standby Mode | : Disable | Floppy Disk : Disabled |
| Suspend Mode | : Disable | Serial Port : Enabled |
| HDD Power Down | : Disable | Parallel Port : Disabled |
| Throttle Duty Cycle | : 62.5% | |
| VGA Active Monitor | : Disabled | |
| Soft-Off by PWR-BTTN | : Delay 4 Sec. | |
| CPUFAN Off In Suspend | : Enabled | |
| IRQ 8 Break Suspend | : Disabled | |
| Resume by Ring | : Enabled | |
| Resume by LAN | : Disabled | |
| Resume by Alarm | : Disabled | |
| | | ESC : Quit ↑↓←→ : Select Item |
| | | F1 : Help PU/PD/+/- : Modify |
| | | F5 : Old Values (Shift)F2 : Color |
| | | F6 : Load BIOS Defaults |
| | | F7 : Load Setup Defaults |

Power Management

This field acts as the master control for the power management modes. *Max Saving* puts the system into power saving mode after a brief period of system inactivity; *Min Saving* is almost the same as *Max Saving* except that this time the system inactivity period is longer; *Disabled* disables the power saving features; *User Defined* allows you to set power saving options according to your preference. The options are: *Disabled* (default); *User Defined*; *Min Saving*; *Max Saving*.

PM Control by APM

The option *No* allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting *Yes* will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done. The options are: *Yes* (default); *No*.

Video Off Method

This field defines the video off features. *V/H SYNC + Blank* blanks the screen and turns off vertical and horizontal scanning; *DPMS Support* allows the BIOS to control the video display card if it supports the DPMS feature; *Blank Screen* only blanks the screen. Use the latter for display monitors that do not support the "Green" (no power management) feature. Screensaver softwares does not work with this feature. With the CRT monitor shut off, this software cannot display. The options are *DPMS* (default); *Blank Screen*; *V/H Sync + Blank*.

Video Off After

This item allows you to activate the video off feature for the display monitor power management. The options are *Suspend* (default); *Standby*; *Doze*; *NA*.

MODEM Use IRQ

This feature allows you to select the IRQ# to match the modem's IRQ#. The options are: *3* (default); *4*; *5*; *7*; *9*; *10*; *11*; *NA*.

Doze Mode/Standby Mode/Suspend Mode

Sets the period of time after which Doze/Standby/Suspend Mode activates. At *Max Saving*, Doze/Standby/Suspend Mode will activate after *1 Min*. At *Min Saving*, Doze/Standby/Suspend Mode will activate after *1 hour*. If Power Management option is set at *User Defined*, user has the option to set it at *1 Min*; *2 Min*; *4 Min*; *8 Min*; *12 Min*; *20 Min*; *30 Min*; *40 Min*; or *1 Hour*. The default value is *Disabled*.

HDD Power Down

This option shuts down any IDE hard drives in the system after a period of inactivity. At *Max Saving*, Doze/Standby/Suspend Mode will activate after *1 Min*. At *Min Saving*, Doze/Standby/Suspend Mode will activate after *15 Min*. If Power Management option is set at *User Defined*, user has the option to set it at *1 Min* to *15 Min*. This feature does not affect SCSI hard drives. The options are *Disabled* (default); *1 Min*; . . . *15 Min*.

Throttle Duty Cycle

This item allows you to set the speed at which the system clock runs during power saving mode. The settings are expressed as the ratio between the normal and power down clock speed. The options are: *62.5%* (default), *75.0%*, *12.5%*, *25.0%*, *37.5%*, *50.0%*.

VGA Active Monitor

When disabled, it allows the system to enter Power Management Mode even if the display monitor is currently active (e.g., running a screensaver program, etc.). The options are: *Disabled* (default); *Enabled*.

Soft-Off By PWR-BTTN

This item is designed for the system case that uses an ATX power supply. The option *Delay 4 Sec.* allows the system to have a power-off delay of 4 seconds upon pressing the power button. The option *Instant-Off* allows the system to shutdown immediately upon pressing the power button. The options are *Delay 4 Sec.* (default); *Instant Off*.

CPUFAN Off In Suspend

When enabled, allows the CPU fan to shutdown when system is in Suspend Mode. The options are: *Enabled* (default); *Disabled*.

IRQ 8 Break Suspend

IRQ8 (Real Time Alarm) is usually set to *Disabled* so that any software alarm clock or event calendar can wake up the system. The options are *Disabled* (default); *Enabled*.

Resume By Ring

If an ATX power supply is installed in your system and this feature is enabled, the system can be turned on from the power-off state by remote phone call via the modem. The options are *Enabled* (default); *Disabled*.

Resume By LAN

If an ATX power supply is installed in your system and this feature is enabled, the system can be turned on from the power-off state by a remote computer via the LAN. The options are *Disabled* (default); *Enabled*.

Resume By Alarm

If an ATX power supply is installed in your system and this feature is enabled, BIOS allows you to set the time the system will be turned back on from the power-off state. The options are: *Disabled* (default); *Enabled*.

Date (of Month) Alarm

This item, which is available only if the above item Resume By Alarm is set at *Enabled*, allows you to set the date when system will be turned back on from the power-off state. The options are: *0* (default); *1* to *31*.

Time (hh:mm:ss) Alarm

This item, which is available only if the above item Resume By Alarm is set at *Enabled*, allows you to set the specific hour, minute, and second of the day when system will be turned back on from the power-off state. The options are: hh: *7* (default), *0* to *23*; mm: *0* (default), *1* to *59*; ss: *0* (default), *1* to *59*.

IRQ [3-7, 9-15], NMI

When enabled, this item allows the system to reset power management timer when system activity at IRQ3 to 7 or IRQ9 to 15 is detected. The options are: *Enabled* (default); *Disabled*.

Primary IDE 0

When enabled, this item allows the system to reset power management timer when system activity at the primary (master) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Primary IDE 1

When enabled, this item allows the system to reset power management timer when system activity at the primary (slave) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Secondary IDE 0

When enabled, this item allows the system to reset power management timer when system activity at the secondary (master) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Secondary IDE 1

When enabled, this item allows the system to reset power management timer when system activity at the secondary (slave) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Floppy Disk

When enabled, this item allows the system to reset power management timer when system activity at the floppy disk drive is detected. The options are: *Disabled* (default); *Enabled*.

Serial Port

When enabled, this item allows the system to reset power management timer when system activity at the serial port is detected. The options are: *Enabled* (default); *Disabled*.

Parallel Port

When enabled, this item allows the system to reset power management timer when system activity at the parallel port is detected. The options are: *Disabled* (default); *Enabled*.

PNP and PCI Configuration Setup

The “PNP and PCI Configuration” option configures the PCI bus slots. All PCI bus slots on the system use INTA#, thus all installed PCI cards must be set to this value.

| ROM PCI/ISA BIOS (2A69JF09) PNE/PCI CONFIGURATION AWARD SOFTWARE, INC. | |
|---|---|
| PNP OS Installed : No Resources Controlled By : Auto Reset Configuration Data : Disabled IRQ Sequence:10,11,5,7,4,3,12,9,15,14 | PCI IRQ Activate By : Level Assign IRQ For VGA : Enabled |
| ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults | |

PNP OS Installed

When Plug and Play operating systems (OS) are installed, interrupts may be reassigned by the OS when *Yes* is selected. When a non-Plug and Play OS is installed or to prevent reassigning of interrupt settings, select *No* here. The options are: *No* (default), *Yes*.

Resources Controlled By

If set at *Auto*, BIOS automatically arranges all system resources for you. If there are conflicts or you are not satisfied with the configuration settings, simply set all the resources by selecting *Manual*. The options are: *Auto* (default); *Manual*.

Reset Configuration Data

When enabled, this feature allows the system to clear the last BIOS configuration data and reset them with the default BIOS configuration data. The options are: *Disabled* (default); *Enabled*.

IRQ Sequence

Allows you to set the sequence of the IRQ#. The options are: *9, 10, 11, 5, 7, 4, 3, 12, 15, 14* (default); or *15, 11, 10, 12, 14, 5, 7, 3, 4, 9*.

IRQ-3; -4; -5; -7; -9; -10; -11; -12; -14; -15; DMA-0; -1; -3; -5; -6; -7 Assigned to

These options, which allows you to set whether a particular IRQ# or DMA# is used by a PCI/ISA PNP or Legacy ISA card will only appear on screen if the above item Resources Controlled By is set at *Manual*. The options are: *PCI/ISA PNP* (default except for IRQ-3 and IRQ-4); *Legacy ISA*.

PCI IRQ Activated By

If the IDE card you are using is triggered by edge, set it at *Edge*. The options are: *Level* (default); *Edge*.

Assign IRQ for VGA

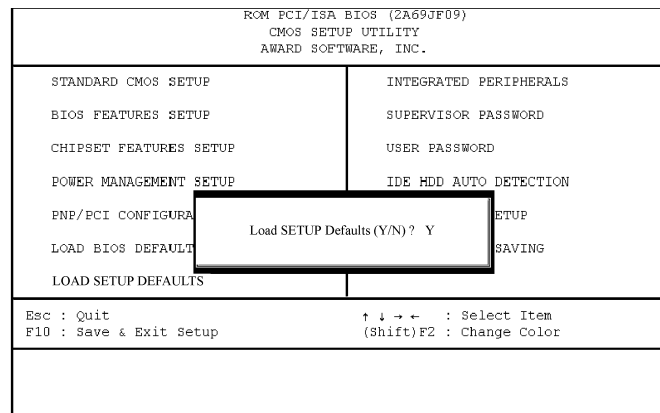
If the PCI VGA card you are using does not need an IRQ, select *Disabled*, thereby releasing an IRQ for system use. The options are: *Enabled* (default); *Disabled*.

Load BIOS Defaults

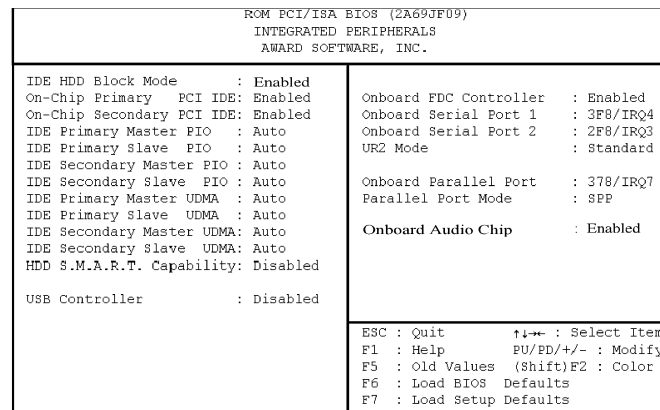
The “Load BIOS Defaults” option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disables all high performance features. To load these default settings, highlight “Load BIOS Defaults” on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

Load Setup Defaults

The “Load Setup Defaults” option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight “Load Setup Defaults” on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.



Integrated Peripherals



IDE HDD Block Mode

When enabled, the system executes read/write requests to hard drive in Block Mode. The options are: *Enabled* (default); *Disabled*.

On-Chip Primary PCI IDE

When enabled, it allows you to use the onboard primary PCI IDE. The options are: *Enabled* (default); *Disabled*.

On-Chip Secondary PCI IDE

When enabled, it allows you to use the onboard secondary PCI IDE. The options are: *Enabled* (default); *Disabled*.

IDE Primary Master PIO (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (master) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Slave PIO (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (slave) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Master PIO (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (master) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Slave PIO (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (slave) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Master UDMA (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic configuration of the PCI primary IDE hard drive (master) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Primary Slave UDMA (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic configuration of the PCI primary IDE hard drive (slave) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Secondary Master UDMA (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic configuration of the PCI secondary IDE hard drive (master) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Secondary Slave UDMA (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic configuration of the PCI secondary IDE hard drive (slave) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

HDD S.M.A.R.T. Capability

Enable this option if the hard disk drive you are currently using supports the S.M.A.R.T. function. The options are: *Disabled* (default), *Enabled*.

USB Controller

Disable this option if you are not using the onboard USB feature. The options are: *Disabled* (default); *Enabled*.

BIOS Support USB Keyboard (available only when USB Controller is enabled)

When the USB devices cannot be detected automatically by the system BIOS or some driver diskettes came with the USB devices, set it at *DOS* to allow for the installation of the drivers. The options are: *Setup* (default); *DOS*.

Onboard FDC Controller

When enabled, the floppy disk drive (FDD) controller is activated. The options are *Enabled* (default); *Disabled*.

Onboard Serial Port 1

If Serial Port 1 uses the onboard I/O controller, you can modify the serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: *3F8/IRQ4* (default); *3E8/IRQ4*; *2F8/IRQ3*; *2E8/IRQ3*; *Disabled*.

Onboard Serial Port 2

If Serial Port 2 uses the onboard I/O controller, you can modify the serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: *2F8/IRQ3* (default); *3E8/IRQ4*; *2E8/IRQ3*; *3F8/IRQ4*; *Disabled*.

UR2 Mode (available only when Onboard Serial Port 2 is not set at Disabled)

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set it at *Standard* when you use COM2 as a serial port instead of an IR port. The options are: *Standard* (default); *IrDA 1.0*; *ASK IR*; *MIR 0.57M*; *MIR 1.15M*; *FIR*.

UR2 Duplex Select (available only when UR2 Mode is not set at Standard)

This feature allows you to select the infrared data transaction method. The options are: *Half* (default); *Full*.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller. The options are: *378/IRQ7* (default); *278/IRQ5*; *3BC/IRQ7*; *Disabled*.

Onboard Parallel Mode (available only when Onboard Parallel Port not set at Disabled)

Allows you to connect with an advanced printer. The options are *SPP* (default); *EPP*; *ECP*; *ECP+EPP*.

ECP Mode Use DMA (available only when Parallel Port Mode set at ECP or ECP+EPP)

This feature allows you to select the Direct Memory Access (DMA) channel. The options are *3* (default); *1*.

Onboard Audio Chip

This feature allows you to disable the onboard audio chip if you want to use an add-on audio card on the system. The options are: *Enabled* (default); *Disabled*.

Supervisor Password and User Password

These two options set the system passwords. “Supervisor Password” sets a password that will be used to protect the system and the Setup utility; “User Password” sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press the <Enter> key. A password prompt appears on the screen. Taking note that the password is case sensitive, and can be up to 8 alphanumeric characters long, type in your password and then press the <Enter> key. The system confirms your password by asking you to type it again. After setting a password, the screen automatically reverts to the main screen. If you want to disable either the Supervisor or User password, press the <Enter> key instead of re-typing the new password when the “Enter Password” prompt appears the second time. A message confirms the password has been disabled.

IDE HDD Auto Detection

The “IDE HDD Auto Detection” option detects the parameters of an IDE hard drive and automatically enters them into the Standard CMOS Setup screen. Up to four IDE drives can be detected, with parameters for each listed inside the box. To accept the optimal entries, press the <Y> key or else select from the numbers displayed under the OPTIONS field; to skip to the next drive, press the <N> key. If you accept the values, the parameters will appear listed beside the drive letter on the screen. The process then proceeds to the next drive letter. Pressing the <N> key to skip rather than to accept a set of parameters causes the program to enter zeros after that drive letter.

Remember that if you are using another IDE controller that does not feature Enhanced IDE support for four devices, you can only install two IDE hard drives. The IDE controller must support the Enhanced IDE features in order to use Drive E and Drive F.

When auto-detection is completed, the program automatically enters all entries you accepted on the field for that drive in the Standard CMOS Setup screen. Skipped entries are ignored and are not entered in the screen.

If you are auto-detecting a hard drive that supports the LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not select *Large* or *Normal*.

The auto-detection feature can only detect one set of parameters for a particular IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it.

| |
|---|
| <p>NOTE : If your hard drive was already formatted on an older previous system, incorrect parameters may be detected. You will need to enter the correct parameters manually or use low-level format if you do not need the data stored on the hard drive.</p> |
|---|

If the parameters listed differ from the ones used when the drive was formatted, the drive will not be readable. If the auto-detected parameters do not match the ones that should be used for your drive, do not accept them. Press the <N> key to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup screen.

Software Utilities

The mainboard comes with helpful supporting software utilities in CD-ROM discs that contain software utilities and information to improve system performance. This chapter introduces each of them with detailed installation procedures.

Starting Installation

Insert the CD-ROM disk to start software installation. **If LANDesk® Client Manager (LDCM) software is included** (optional), **run it first**. Start each of them by clicking on the wanted software item(s) on the main menu.

LANDesk® Client Manager (optional)

The LDCM software must be installed in order to use the hardware manager.

Three Options of the LDCM Setup

LDCM Local Setup — install software to monitor the *local* system client. Recommended settings can be auto-detected or changed. The installation is straight forward.

1. Select *LDCM Local Setup* in the main menu.
2. Follow the step-by-step installation process.
3. Reboot the system.

LDCM Administrator Setup — install software to monitor PC systems on the *network* server within the same bridge address with local software installed. The installation is straight forward.

1. Select *LDCM Administrator Setup* in the main menu.
2. Follow the step-by-step installation process.
3. Reboot the system.

The administrator should install both the Local and Administrator Software. (Hint: first install the *Local Setup*, then the *Administrator Setup*.)

LDCM Custom Setup — (for *Experienced* Users).

1. Choose *File | New* from the pull-down menu of the "Untitled" screen and enter a system name.
2. Make the appropriate settings on the right-hand side. IC and Network should not be modified. At present, only ATI Video cards can be monitored by LDCM, do not select Video ATI if using other video cards.
3. Choose LM78 from the pull-down menu and change Chassis Fan to CHAS_FAN, CPU A Fan to CPU_FAN, CPU B Fan to No Fan.
4. Change the Threshold RPM to 1,800 RPM and change the Threshold RPM Min to 1,320 RPM.
5. Click *Save* button to save settings and exit.
6. Choose *File | Save* from the pull-down menu, enter a file name, and click *Save*.
7. Exit the current program screen.
8. Run *SETUP.EXE* and choose the system configuration file that was just created.

NOTE : 1. System will hang if you click the "Workstation Summary" or "Drives" icon when a floppy drive is not inserted into the floppy drive. For a faster response, insert a floppy diskette before choosing this function.
 2. When setting up the Administrator LDCM, the LDCM only displays half the actual fan's RPM. Multiply the displayed fan RPM by 2 for the actual fan's RPM.
 3. Chassis Fan and CPU Fan RPM must be at least 2,640 RPM to be monitored by the LDCM.
 4. Fan labels are not consistent, use the following table for reference:

| PC Health | LDCM Notification Config. | BIOS/Mainboard Label |
|-------------|---------------------------|----------------------|
| CPU Fan | CPU Fan | CPU_FAN |
| Chassis Fan | Chassis Fan | CHAS_FAN |
| No Fan | No Fan | none |

5. LDCM at present can only detect ATI video cards, choose *Non-ATI* in *Local Setup*; otherwise, a run-time error message will show (Error [1] retrieving Mach64 attributes). You may ignore this message by clicking the *OK* button.

NOTE : (cont.)
 6. The administrator LDCM cannot cross a network bridge to other workgroups.
 7. The COM port that is in use will not show up in "Input/Output Ports."

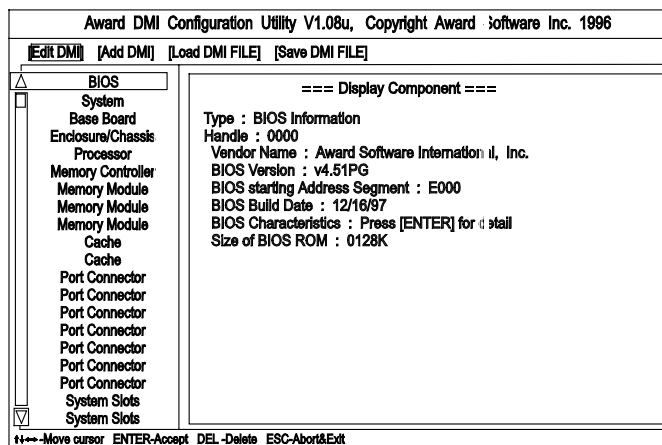
8. LDCM Administrator installation requires a network card; otherwise, the administrator features will run very slow.
9. Mouse (pointer) information will not be shown when there is mouse activity after *Workstation Summary* is selected under Windows NT.

Desktop Management Interface (DMI)

The mainboard supports DMI within the BIOS level and provides a DMI Configuration Utility to maintain the Management Information Format Database (MIFD). DMI is able to auto-detect and record information pertinent to a computer's system such as the CPU type, CPU speed, internal/external frequencies, and memory size. The onboard BIOS will detect as many system information as possible and store these collected information in a 4KB block in the mainboard's Flash EPROM and allow the DMI to retrieve data from this database. Unlike other BIOS software, the BIOS on the mainboard uses the same technology implemented for Plug and Play to allow dynamic real-time updating of DMI information versus creating a new BIOS image file and requiring the user to update the whole BIOS. The DMI Configuration Utility also allows the system integrator or end user to add additional information into the MIFD such as serial numbers, housing configurations, and vendor information. Those information not detected by the mainboard BIOS has to be manually entered through the DMI Configuration Utility and updated into the MIFD. The DMI Configuration Utility provides the same reliability as PNP updating and will prevent the refreshing failures associated with updating the entire BIOS.

Starting DMI

1. Format a bootable system diskette and copy the DMICFG.EXE file from the CD-ROM disc to the floppy diskette.
2. Reboot the system by using this bootable system diskette to enter Real mode (DOS).
3. After the DOS prompt appears, type *DMICFG* and press <Enter> key. The following display will appear onscreen.



Edit DMI — a menu like the above figure appears onscreen. It provides recorded data about your computer system. This feature allows you to select editable DMI items by pressing the arrow keys. The button *Press [ENTER] for detail* will cause a pop-up sub-menu to appear. Use the <+> or <-> keys to change configurations. Press <Esc> key to abort the configuration and exit or press <Enter> key to save and exit. The screen field under *Show Only Component* means that the items are automatically detected by BIOS. The screen menu under *Edit Component* indicates the items are user-configurable.

Add DMI — This menu allows users to add new information such as Manufacturer Name, Product Name, etc.

Load DMI File — If users need the old DMI information, use this feature to load the DMI information.

Save DMI File — If users need to keep the DMI information that was just changed, use this feature to save the new DMI information.

IDE Bus Master Driver

The mainboard package includes the Bus Master IDE Driver in the software utility disk for Windows 95 and Windows NT to improve the overall system performance. Read the related README files first before installing it. This mainboard supports Ultra DMA/33 but Windows 95 does not recognize it. When the operating system detects the mainboard and the IDE Bus Master Driver is not installed, the system will treat it as a standard dual PCI IDE controller, not allowing you to take advantage of the Ultra DMA feature. (The attached peripheral devices must support UDMA.)

The installation process is straight forward. Start by clicking on the *IDE Bus Master* item on the main menu. There is no option to be selected while the installation is proceeding. After the installation process, the system should be rebooted.

Patch for Chipset

The mainboard package provides an INF update software in the software utility disk. Before running the SETUP file, read the related README file first. This software is necessary for the operating system to recognize the onboard chipset; otherwise, the question mark in a circle symbol will appear in your Windows 95 environment. The installation is straight forward. Start by clicking on the item *Patch for Chipset* on the main menu. There is no option to be selected while the installation is proceeding. After the installation process, the system should be rebooted.

BIOS Flash Software

The mainboard package provides a BIOS flash software tool in the software utility CD-ROM disc. This software is used for upgrading the current BIOS used.

1. Run the CD-ROM disc and click on *Browse CD*.
2. Select *Flash* and choose the BIOS vendor that provided the BIOS chip on this mainboard.
3. Print the related README file and read it first. For more information, visit FIC online at <http://www.fic.com.tw/>.

Download and Upgrade BIOS File

1. Format a bootable system floppy diskette by typing the command “format a:/s” in command mode.
2. Visit the FIC website at <http://www.fic.com.tw/> and visit the BIOS Update page in the FIC Technical Support section.
3. Select the BIOS file you need and download it to your bootable floppy diskette.
4. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
5. Assuming that the floppy diskette drive is A, reboot the system by using the A: drive. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

Command: {flash tool file}{space}{downloaded BIOS file} / cc <Enter>

Example: flashxxx 109cd12.awd /cc

Parameter *CC* stands for **Clear CMOS**. It is most frequently used. You can obtain the list of other parameter switches by adding “/?” after the flash utility filename and pressing the <Enter> key.

6. Upon pressing the <Enter> key, a FLASH MEMORY WRITER menu will appear onscreen. Enter the new BIOS file name with its extension filename into the text box after **File Name to Program**.
7. If you want to save the old BIOS file (perform as soon as system is operational, this is recommended), select **Y** to **Do You Want To Save BIOS**, then type the old BIOS filename and the extension after **FILENAME TO SAVE:**. This option allows you to copy the contents of the Flash memory chip onto a diskette, giving you a backup copy of the original mainboard BIOS in case you need to re-install it. Select **N** to **Do You Want To Save BIOS**, if you do not want to save the old BIOS file.
8. After the decision to save the old BIOS or not is made, select **Y** to **Are you sure to program** when the next menu appears; wait until a message showing **Power Off or Reset the system** appears. Then turn off your system.

NOTE : Do not turn off or reset the computer during the flash process or if there is a problem.

If you encounter problems while downloading the new BIOS, DO NOT turn off the system since this might prevent your system from booting up. Just repeat the process and if the problem still persists, upload the original BIOS file you saved to disk.

WARNING: If the Flash utility was not able to successfully write to Flash ROM a complete BIOS file, the system may not be able to boot up. If this happens, the system will require service from your dealer.

9. Remove the diskette and restart your computer.
10. Hold down <Delete> key to enter BIOS setup. You must select “LOAD SETUP DEFAULTS” to activate the new BIOS, then you may set other items from the Main Menu.

Anti-Virus Tool

The mainboard package provides an optional virus scan tool, the PC-cillin '95 Virus Scanner for the Windows 95 environment, in the software utility disk. This tool allows you to perform virus scan and cure when necessary. Read the related README file first before installing it.

Hardware Requirements

The PC-cillin '95 Virus Scanner software is fully compliant with Windows 95. The minimum hardware requirements for running PC-cillin '95 Virus Scanner is as follows:

CPU: Intel 54C CPU (100MHz or above)
RAM: 8MB (or above)
Available disk space: 4MB

Technical Notes

PC-cillin '95 Virus Scanner software will be installed to the program group "PC-cillin '95 Virus Scanner" by default. The PCCWIN95.EXE command will be added to the Startup group, and the AUTOEXEC.BAT will be modified to add PCSCAN commands to fully protect your system from computer viruses at system boot up. Read the related README file for more information.

Onboard Audio Chip Driver Installation

This section describes the installation of the driver for Windows 3.1, Windows 95, and Windows 95 (OSR2), allowing you to take advantage of the built-in sound capabilities of your mainboard.

OPL3-SA2 Installation for Windows 3.1 and DOS

The OPL3-SAx driver and associated software are supplied on the CD-ROM disc. The OPL3-SAx requires MS-DOS 6.2. Operation with other operating systems is not guaranteed. Installation from MS-DOS leads to installation of Windows 3.1 and DOS driver. Along with the OPL3-SAx driver, the application "YAMAHA STATION" are installed.

YAMAHA STATION

The YAMAHA STATION application is installed in a new Program Group named YAMAHA. Refer to the README file for more information about the YAMAHA STATION.

Installation

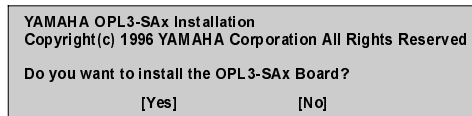
NOTE: An OPL3-SAx must be present in your system for successful driver installation.
This software is installed from the DOS prompt, not the Run command in Windows.
The installation program overwrites the existing AUTOEXEC.BAT, CONFIG.SYS, and Windows SYSTEM.INI files.
To cancel the installation program, press the <Esc> key anytime.

1. Play the CD-ROM disc and select the appropriate (WIN31) from the disc.
2. At the C:> DOS prompt, go to the appropriate directory "WIN31" where the CD-ROM drive is located.
3. Type as follows:
 "install" (installation of drivers application setup program for Windows 3.1)
 "install -d" (installation of only setup program for DOS/Windows 3.1)
 and press <Enter> key.

When using the IDE CD-ROM interface of a soundcard and your computer has no Configuration Manager, add the option "-C" as follows:

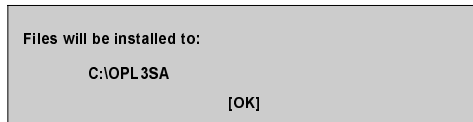
"install -c"
"install -d -c"

The following dialog box appears:



4. Select and click YES. If you are not using a mouse, press the <Enter> key for YES or the <Esc> key to Cancel.

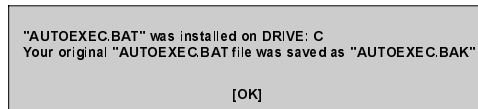
The following dialog box appears:



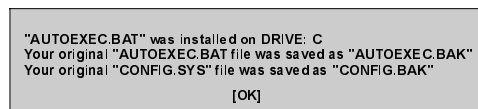
5. Specify the installation directory for the OPL3-SAx Configuration Files or accept the default then click OK.

The files are copied to the hard disk and the following dialog box appears, informing you that the parameter settings for the OPL3-SAx have been added to the AUTOEXEC.BAT file and a copy of the original AUTOEXEC.BAT file has been saved as AUTOEXEC.BAK. The following contents are written into the new AUTOEXEC.BAT. After restarting the system, the following are now valid:

- Set BLASTER (sets the BLASTER function)
- SETUPSA.EXE (is written into the directory assigned at "Files will be installed to:")



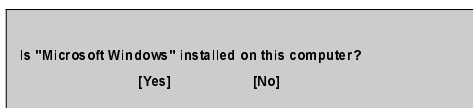
If you typed "install -c" or "install -d -c" to use the IDE CD-ROM I/F of the sound card, the following dialog box appears, informing you that the parameter settings for the OPL3-SA has been added to the CONFIG.SYS file and a copy of the original CONFIG.SYS file has been saved as CONFIG.BAK.



6. Click OK to continue.

NOTE: Only DOS installation will display the message that the installation is completed. Click OK to finish the installation.

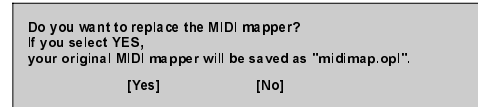
The following dialog box appears, asking whether or not you have Windows installed on your system:



- Click Yes if Windows 3.1 is installed on your system. Click No if it is not. The following dialog box appears, asking where Windows is installed.

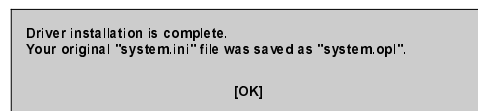


- Click OK if Windows is installed in the directory C:\WINDOWS, which is the default directory or specify a different directory. The following dialog box appears, asking whether you want to replace the MIDI Mapper.



- Select Yes to replace the current MIDI Mapper. Select No if you do not want to replace it. If a MIDI Mapper already exists and you replaced it with the OPL3-SA MIDI Mapper, the original is saved as midimap.opl. See your Windows documentation for more information about the MIDI Mapper.

“SETUPSA” dialog opens automatically. If Configuration Manager or PNP BIOS is in your system, see section one on “SETUPSA”. If it is not in your system, see section two on “SETUPSA”. Upon finishing SETUPSA, it will ask you “Next time, do you want to open this setup window in boot sequence?”. If you do, press the <Y> key, if not press the <N> key. The following dialog box informs you that the installation is complete and the original SYSTEM.INI file was saved as SYSTEM.OPL.



- Click OK to finish. The installer asks whether it can delete the temporary directory. If you want to delete, press <Y> key, and if you do not, press the <N> key.
- Launch Windows. When Windows is started, the application (YAMAHA STATION) is extracted.

NOTE: Even if you did not install the application “YSTATION” in this installation, you can still do it by doing the following steps:

- When the installation is finished, do not delete the temporary directory “WIN31”.

2. Launch "FILE MANAGER" and double click the "WINSTCD.EXE" in the directory "WIN31".
3. Follow the onscreen instructions to complete the installation.
4. After completing installation, you can delete the temporary directory "WIN31".

SETUPSA

If the Configuration Manager or PNP BIOS is in your system. (section one)

1. Type "SETUPSA". Open the dialog box and display information on OPL3-SAx I/O address, DMA and IRQ assigned by Configuration Manager or PNP BIOS. Set the value of master volume that is written into OPL3SA.INI. Upon changing the master volume, click "OK", the value is set and written into OPL3SA.INI.
2. Type "SETUPSA /S". Do not open the dialog box but display the configuration of OPL3-SAx onscreen. Set the value of the master volume that is written into OPL3SA.INI

If Configuration Master and PNP BIOS are not in your system. (section two)

1. Type "SETUPSA". Open the dialog box "YAMAHA OPL3-SAx Mixer", display and set the contents into OPL3SA.INI. When you change the configuration and the master volume and click "OK", they are set and written into OPL3SA.INI.

If you are not using a mouse, use the Tab key to move between parameters. Set unique values for the SB (Sound Blaster) and WSS (Windows Sound System) Base I/O Address, IRQ, and DMA channel. The MPU401 IRQ parameter is automatically set to the IRQ that you chose for the Sound Blaster. The default settings, shown below, should work fine. You may need to change them, however, if you have other cards installed in your computer.

| | I/O | IRQ | DMA |
|---------------|------|-----|-----|
| Sound Blaster | 220h | 5 | 1 |
| WSS | 530h | 5 | 0 |
| MPU401 | 330h | 5 | ~ |

In the SB and WSS Mixer sections, use the left cursor key to raise the volume and the right cursor key to decrease it. If you are using a mouse, click the [UP] and [DOWN] buttons to adjust the volume level.

In SB (Sound Blaster) mode, pressing the S key plays a WAVE sound. Pressing the F key plays an FM sound.

In WSS mode, pressing the W key plays a WAVE sound.

The settings that you make here are written to the AUTOEXEC.BAT file, so they are active every time you switch on the computer. To change these settings after installation, run the "SETUPSA" program again from the directory you specified for installation.

2. Type "SETUPSA /S". Do not open the dialog box but display and set the contents into OPL3SA.INI.

OPL3-SAx Configuration

Various configurations can be set by the panel. Click the "OPL3-SAx Config" icon in Control Panel of Windows 3.1. A window showing the *OPL3-SAx Configuration* will appear.

SoftSynthesizer Configuration

The Soft Synthesizer supports GM System Level 1 MIDI data.

Quality

These four options determine (i.e., sampling rate) and the number of voices that the SoftSynth can produce simultaneously. Select a mode appropriate for the CPU performance of your system. If you choose a high quality mode and your system does not have adequate processing performance, the SoftSynth may not produce sound fluently. In this case, select a lower quality mode.

| MODE | SAMPLING RATE (KHz) | MAX. VOICES |
|-----------|------------------------|-------------|
| Normal | 11.025 | 16 |
| Good | 11.025 | 32 |
| Very Good | 22.050 | 16 |
| Excellent | 22.050 | 32 |

Reverb

If you choose ON, you can add reverb to the sound of the SoftSynth.

MPU401 OUT

These settings allow you to select an External MIDI instrument or the SoftSynth for use with DOS-based games that are played on the Window box. The MS-DOS prompt item in the Main Program Group opens an MS-DOS window. Select General MIDI in the game settings to use this function.

Full Duplex

It is possible to record a new Wave file while playing an existing Wave file.

MIC Volume Control

When the “MIC +20dB” is checked, microphone volume increases 20dB at play back and recording.

ZV Port

When the “ZV Enable” is checked, ZV port is available.

IDE CD-ROM Interface

When using the IDE CD-ROM interface of soundcard, change the parameters of IDE in SETUPSA, because these are OFF as default values. CD-ROM device driver should be bundled in CONFIG.SYS and the CD-ROM driver is unique to each manufacturer of CD-ROM drives.

Example: a case of CD-ROM drive made by Mitsumi

In the “CONFIG.SYS” file, confirm or add the following two descriptions or rewrite:
DEVICE=C:>OPL3SA>SACDROM.SYS /P:1E8 /I11 /A3EE

DEVICE=C:>MTM>MTMCDAL.SYS /D:MTMIDE01 /P:1F0,14 /P:1E8,11

In the “AUTOEXEC.BAT” file, confirm or add the following description or rewrite:
LH C:>DOS>MSCDEX.EXE /D:MTMIDE01 /S

If the CD-ROM drive cannot be recognized in your system, contact the manufacturer of the CD-ROM drive.

OPL3-SA3 Installation for Windows 95

The OPL3-SA3 supports Windows 95 Plug-and-Play. When you start Windows 95, the automatic search option for the Add New Hardware Wizard works as described below.

Sound System and Game Port Installation

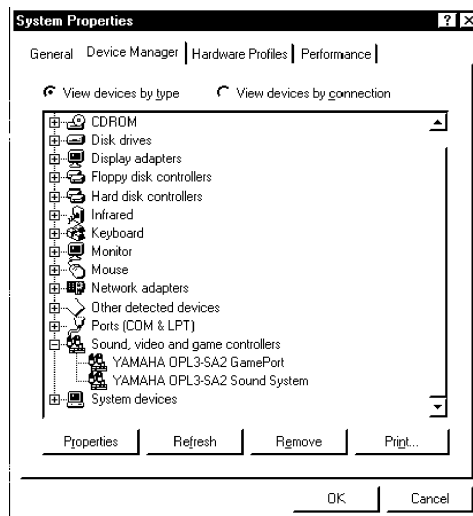
1. The *New Hardware Found* dialog box appears. Select “Driver from disk provided by the hardware manufacturer”, then click OK.
2. The *Install From Disk* dialog box appears. Identify the appropriate directory on the CD-ROM drive and click OK.

The drivers are going to be installed into your hard disk drive. This is for the YAMAHA OPL3-SAx sound system installation. The game port joystick driver is detected and installed automatically.

NOTE : If the hardware supports modem port or IDE/EDSI hard disk controller, the specified installation process will progress. In this case, continue the installation according to the indication on the screen.

Confirmation of Installation

To make sure that the OPL3-SAx driver has been installed correctly, open the *System Properties* dialog box in the Control Panel.



If the “YAMAHA OPL3-SAx GamePort” and “YAMAHA OPL3-SAx Sound System” appear, the installation is successfully completed.

OPL3-SAx Power Management

This function is to control OPL3-SAx power consumption and enable the power saving mode of OPL3-SAx.

Features

There are four levels of power saving mode which consist of a non-power save mode and three levels of power save mode:

- Non-Power Save mode (N)
- Minimum level of power save (1)
- Intermediate level of power save (2)
- Maximum level of power save (3)

The period that goes into the power saving mode can be set. The power saving mode can be forced to enter into power saving immediately by checking box.

How To Use

1. Click the Power icon in Control Panel of Windows 95.



Power

2. Click on the OPL3-SAx power management tab in Power Properties and a window will appear. Clicking the right mouse button on the new window will show the corresponding help.

[What's This?](#)

Non-Power Save Mode

Power saving mode is not enabled. (FULL ON)

Minimum Level of Power Save

Operating “Minimum level of power save” can be separated by the following three types of setting registry:

A) LevelPartial = 0

This mode disables OPL3-SAx’s digital functions, but analog function and master clock are still working. (Analog output voltage is kept to VREF (2.5V), but muted by the master volume.) Power save mode is entered after the time specified by “Time taken until Power Save mode is”.

B) LevelPartial = 1

This mode disables OPL3-SAx’s digital functions except the FM portion, but the master clock is working and analog function is able to use analog input (AUX1, AUX2, LINE) to output sound. FM portion is enabled so that AUX2 becomes effective. Power save mode is entered after the time specified by “Time taken until Power Save mode is”.

C) Level1Partial = 2

This mode disables OPL3-SAx's digital functions except FM portion, but master clock is working. Analog functions are disabled except DAC for Synthesizer and 3D enhance controller. At this level, analog input (AUX1, AUX2, LINE) are available to output sound. FM portion and DAC for Synthesizer are enabled so that AUX2 becomes effective. Power save mode is entered after the time specified by "Time taken until Power Save mode is".

Intermediate Level Of Power Save

This mode disables OPL3-SAx's digital functions and master clock is stopped, but analog function is still enabled. (Analog output voltage is kept to VREF (2.5V), but muted by the master volume.) Power save mode is entered after the time specified by "Time taken until Power Save mode is".

Maximum Level of Power Save

This mode disables all functions of OPL3-SAx. (Analog output voltage becomes ground level (0V).) Power save mode is entered after the time specified by "Time taken until Power Save mode is".

Time Taken Until Power Save Mode is [] Sec.

This is the place to set the time taken until Power Save mode is entered. The unit of time is expressed in seconds. After sound generator operation (WSS, OPL3, SB, etc.) is completed, this tool waits for the time specified, then Power Save mode is entered. This function is available when "Forced entry to Power save mode" is disabled.

Forced Entry to Power Save Mode

Checking this check box will force Power Save mode to be entered. While this setting is enabled, sound generator (WSS, OPL3, SB, etc.) is not available at any time, and when it is disabled, OPL3-SAx functions can be backed to the normal mode automatically by using sound generator, and Power Save mode is entered after the time specified by "Time take until Power Save mode is".

OPL3-SAx Configuration

Various configurations can be set by the panel. Click the "OPL3-SAx Config" icon in Control Panel of Windows 95 and the *OPL3-SAx Configuration* dialog box appears.

SoftSynthesizer Configuration

The Soft Synthesizer supports GM System Level 1 MIDI data (refer to page 68 for an explanation on the Quality, Reverb, MPU401 OUT, and Full Duplex).

MIC Volume Control

When the “MIC +20dB” is checked, microphone volume increases 20dB at play back and recording.

Tone Configuration

This function can be controlled using OPL3-SA3.

Tone Control

The quantity of bass and treble can be adjusted by using the slider.

3D Enhanced

“Ymersion” is Yamaha’s original technology for wide stereo. With the onboard sound chip, four choices appear. Select a mode appropriate for the PC speakers.

| 3D ENHANCED MODE | TARGET SPEAKER | SPEAKER SIZE |
|------------------|------------------|--------------|
| HiFi | Hi-Fi speaker | 16 to 38cm |
| Desk Top | Standard speaker | 5 to 12cm |
| NotePC 1 | Small speaker | 3.0cm |
| NotePC 2 | Smaller speaker | 1.5cm |

Default

When this button is clicked, each value can be returned to default.

3D Enhancement Control on Volume Control

Ymersion, on-chip Yamaha 3D sound enhancement, can be controlled by using the standard Windows 95 volume control. To adjust the wide effect, the item “3D WIDE” appears on the right side. The sound becomes more wide stereophonic when the slider goes up, and normal stereophonic when lower. When adjusting tone of bass and treble, open the *Volume Control* dialog box.

1. Click “Options” and select “Advanced Controls”.
2. Click left-bottom “Advanced” control button.
3. The *Advanced Controls for Volume Control* dialog box appears and the sound tone of bass and treble can be adjusted independently.

Installation of an Application and the Configuration Utility

NOTE: “DOS MODE” means the state in which you have selected “shutdown” Windows95 in the start menu and “Restart the computer in MS-DOS mode”.

To install the application “YSTATION” and configuration utility (SETUPSA) for DOS MODE of Win95:

1. Play the CD-ROM disc and select the appropriate (APPLI) directory.
2. Launch the MS-DOS prompt.
3. At the C:> DOS prompt, type “A:” then press <Enter> key. If the CD-ROM drive is the E drive, type E: instead of A:, then press the <Enter> key. (Make sure that you are in the “APPLI” directory.)
4. Type “WINSTCD -a” and press the <Enter> key. To use the IDE CD-ROM interface of soundcard, add the option “-c” as follows: “WINSTCD -a -c”.
5. Follow the onscreen instructions to complete the installation process.

Installation of the Application

To install the application “YSTATION” only, follow all the previous installation instructions except for step 4 which is:

4. Type “WINSTCD” and press the <Enter> key.

Installation of the Configuration Utility

To install the configuration utility (SETUPSA) for DOS MODE of Windows 95 only, follow all the previous installation instructions except for step 4 which is:

4. Type “WINSTCD -d” and press the <Enter> key. To use the IDE CD-ROM interface of soundcard, add the option “-c” as follows: “WINSTCD -d -c”.

Using IDE CD-ROM Interface in the DOS-Mode

In the DOS-Mode when using the IDE CD-ROM interface of soundcard, refer to the explanation under the heading IDE CD-ROM Interface on page 69.

OPL3-SA3 Installation for Windows 95 (OSR2)

Install the Windows 95 driver to run on Windows 95 (OSR2). The OPL3-SA3 supports Windows 95 Plug-and-Play. When you start Windows 95, the automatic search option for the Add New Hardware Wizard works as described below.

Sound System and Game Port Installation

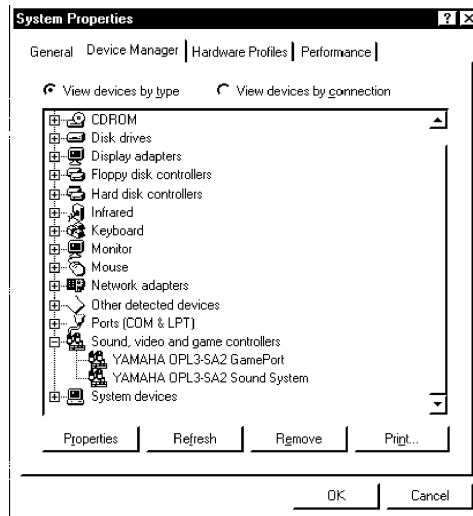
1. The *Update Device Driver Wizard* dialog box appears. Insert the CD-ROM disc into the CD-ROM drive and then click the “Next >” button.
2. The *Update Device Driver Wizard* dialog box changes its contents. Click the “Finish” button and the drivers are going to be installed into the hard disk drive.

This is for the YAMAHA OPL3-SAx sound system installation. The game port joystick driver is detected and installed automatically.

NOTE : If the hardware supports modem port or IDE/EDSI hard disk controller, the specified installation process will progress. In this case, continue the installation according to the indication on the screen.

Confirmation of Installation

To make sure that the OPL3-SAx driver has been installed correctly, open the *System Properties* dialog box in the Control Panel.



If the “YAMAHA OPL3-SAx GamePort” and “YAMAHA OPL3-SAx Sound System” appear, the installation is successfully completed.

OPL3-SAx Configuration

Various configurations can be set by the panel. Click the “OPL3-SA x Config” icon in Control Panel of Windows 95 and the *OPL3-SA x Configuration* dialog box appears.

SoftSynthesizer Configuration

The Soft Synthesizer supports GM System Level 1 MIDI data (refer to page 68 for an explanation on the Quality, Reverb, MPU401 OUT, and Full Duplex).

MIC Volume Control

When the “MIC +20dB” is checked, microphone volume increases 20dB at play back and recording.

Tone Configuration

This function can be controlled using OPL3-SA3. (Refer to page 72 for an explanation on Tone Control, 3D Enhanced, and Default.)

3D Enhancement Control on Volume Control

Ymersion, on-chip Yamaha 3D sound enhancement, can be controlled by using the standard Windows 95 volume control. To adjust the wide effect, the item “3D WIDE” appears on the right side. The sound becomes more wide stereophonic when the slider goes up, and normal stereophonic when lower. When adjusting tone of bass and treble, open the *Volume Control* dialog box.

1. Click “Options” and select “Advanced Controls”.
2. Click left-bottom “Advanced” control button.
3. The *Advanced Controls for Volume Control* dialog box appears and the sound tone of bass and treble can be adjusted independently.

Installation of an Application and the Configuration Utility

| |
|---|
| <p>NOTE: “DOS MODE” means the state in which you have selected “shutdown” Windows95 in the start menu and “Restart the computer in MS-DOS mode”.</p> |
|---|

To install the application “YSTATION” and configuration utility (SETUPSA) for DOS MODE of Win95:

1. Play the CD-ROM disc and select the appropriate (APPLI) directory.
2. Launch the MS-DOS prompt.

3. At the C:> DOS prompt, type “**A:**” then press <Enter> key. If the CD-ROM drive is the E drive, type **E:** instead of **A:**, then press the <Enter> key. (Make sure that you are in the “APPL” directory.)
4. Type “WINSTCD -a” and press the <Enter> key. To use the IDE CD-ROM interface of soundcard, add the option “-c” as follows: “WINSTCD -a -c”.
5. Follow the onscreen instructions to complete the installation process.

Installation of the Application

To install the application “YSTATION” only, follow all the previous installation instructions except for step 4 which is:

4. Type “WINSTCD” and press the <Enter> key.

Installation of the Configuration Utility

To install the configuration utility (SETUPSA) for DOS MODE of Windows 95 only, follow all the previous installation instructions except for step 4 which is:

4. Type “WINSTCD -d” and press the <Enter> key. To use the IDE CD-ROM interface of soundcard, add the option “-c” as follows: “WINSTCD -d -c”.

Using IDE CD-ROM Interface in the DOS-Mode

In the DOS-Mode when using the IDE CD-ROM interface of soundcard, refer to the explanation under the heading IDE CD-ROM Interface on page 69.

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Addendum


To: Users of VL-603 Mainboard Manual

(Manual Part No.: 25-10863-00 and 25-10863-20) (Addendum Part No.: 25-10863-30)

Please take note of the following changes:

For Manual Part No. 25-10863-00

PAGE 11 under title “**CMOS Clear: CMOS_CLR**” — please change the jumper settings.

Disable
(Default)  1

Enable  1

For Manual Part No. 25-10863-20

PAGE 32 under title “**ATX Power Connector: ATX_PWR**” — please change the orientation of the photo of the ATX Power Connector to the following:

PHOTO OF ATX POWER CONNECTOR
(SEE REFERENCE DOCUMENT)