

V4MDF/V4MDFT USER'S MANUAL

M/B For Socket-A Athlon/Duron Processor

NO. G03-V4MDFT

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Trademark:

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	Dec. 2003

Item Checklist

- ☒ V4MDF/V4MDFT Motherboard
- ☒ Cable for IDE/Floppy
- ☒ CD for motherboard utilities
- ☐ Y-Cable for 2-Keybaord/2-Mouse (only for V4MDFT)
- ☒ Cable for Serial-ATA
- ☒ V4MDF/V4MDFT User's Manual

AMD Athlon™ / Duron™ Processor Family Cooling Solutions

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable, long-term system operation. The overall goal in providing the proper thermal environment is keeping the processor below its specified maximum case temperature. Heatsinks induce improved processor heat dissipation through increased surface area and concentrated airflow from attached fans. In addition, interface materials allow effective transfers of heat from the processor to the heatsink. For optimum heat transfer, AMD recommends the use of thermal grease and mounting clips to attach the heatsink to the processor.

When selecting a thermal solution for your system, please refer to the website below for collection of heatsinks evaluated and recommended by AMD for use with AMD processors. Note, those heatsinks are recommended for maintaining the specified Maximum T case requirement. In addition, this collection is not intended to be a comprehensive listing of all heatsinks that support AMD processors.

For vendor list of heatsink and fan, please visit :

<http://www1.amd.com/products/duron/thermals>

<http://www1.amd.com/products/athlon/thermals>

Chapter 1

Introduction of V4MDF/V4MDFT Motherboard

1-1 The 2-User Motherboard V4MDFT

The special designed 2-user motherboard (**V4MDFT**) allows two users to share the computing power of a single PC system. With integrated connectivity hardware onboard, the motherboard comes with innovative software, the MagicTwin[®], allowing 2 users to be connected to it and runs up to two stations directly from it simultaneously. The unique and copyright-protected MagicTwin[®] technology makes each of the 2 users feel like having himself his own Windows-XP computer. Each user needs to have himself his own keyboard, mouse, sound device, and monitor. All remaining PC hardware are shared, even the IP.

Both users can operate on their own station concurrently just like the operation of a standard PC. There is no obvious delay because of the Time-slicing/Multiplexing technology built-in. Each user gets an exact and extremely short defined moment to access to the PC system, devices, applications and Windows itself. Resources are only claimed for nanoseconds at a time, usually from electronic memory, or cache. Both users get from Windows and the PC, what they really need when they need it! The MagicTwin solution turns the single PC into a cost-effective multi-user system.

The setup is intuitive and easy. In only a few minutes, users can install and start using their new workstation. No network administrator is needed as everything to network the workstations together is done automatically with the MagicTwin software. You can add immediately additional user station to the single system and turn one PC into two.

System Requirement

Jetway MagicTwin Motherboard:

- 2 x PS/2 Y-cable
- Install CD (Driver and MagicTwin)
- Serial Number and Activation Key

Purchased Separately from Dealer:

- >=1.2 GHz Processor
- Min 256MB DRAM
- NVIDIA Dual Head AGP Graphic Card
- Windows XP Home, Prof. w/ SP1
- 2 x PS/2 Keyboards
- 2 x PS/2 Mice
- 2 x Monitors

1-1 Feature of motherboard

The V4MDF/V4MDFT motherboard is design for use AMD Athlon/Duron/Athlon XP 200MHz/266MHz/333MHz/400MHz (Double Data Rate) Front Side Bus Frequency CPU, which utilize the Socket-A design and the memory size expandable to 2.0GB.

The motherboards provided 2 pcs DDR Module Socket support DDR200/DDR266/DDR333/DDR400 SDRAM.

This motherboard use the newest VIA KM400A chipset, whose front side bus 200MHz/266MHz/333MHz (DDR) for Provides a high performance/low cost solution for Socket-A series CPUs based system, by integrating a high performance North Bridge which embedded advanced hardware 2D/3D GUI engine and Super-South Bridge.

Moreover, the KM400A chipset by integrating the Ultra AGP technology and advanced 128-bit graphic display interface and provides powerful hardware decoding DVD accelerator to improve the DVD playback performance. The KM400A chipset supports full AGP 3.0 capability for maximum bus utilization including 2X, 4X and 8X mode transfers. On-board VGA memory support 16MB~64MB share memory.

This motherboard provides 6-channel AC'97 compliant interface that comprises digital audio engine with 3D-hardware accelerator, on-chip sample rate converter. This motherboard also provides USB 2.0 host controller with eight USB Ports that deliver better connectivity and 480Mb bandwidth. The built-in Fast PCI IDE controller supports Ultra DMA 33/66/100/133 function up to 133MB/s for data transfer rate. The motherboards also offer Serial ATA RAID0, RAID1 functions to provide speedier HDD throughout that boosts overall system performance.

In addition, V4MDF/V4MDFT provides hardware monitor function that will monitoring and protects your computer.

V4MDF/V4MDFT motherboard also integrated PCI LAN Controller supports 10/100 BASE-T Transfer rate for those whom require faster LAN function for net work.

The V4MDF/V4MDFT motherboard provides special function in BIOS Setup to setting CPU Host clock step by step increasing let users to approach over clocking.

This motherboard provides high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	* Mini ATX form factor 6 layers PCB size: 18.5x25.5cm
Chipset	* VIA KM400A Memory Graphic Host Chipset * VIA VT8237 South Bridge
Clock Generator	* Support 200/266/333/400MHz (100/133/166/200MHz) Front Side Bus Clock (CPU Bus clock) * Support DDR200/266/333/400 system memory clock * Support 33MHz PCI Bus clock
CPU Socket	* Support AMD Athlon 600MHz~1.33GHz processor * Support AMD Athlon XP 1500+~3200+ processor * Support AMD Duron 850MHz~1.6GHz processor * Support 200/266/333/400MHz (100/133/166/200MHz) CPU Bus clock * Reserves support for future AMD Athlon/Duron processors
Memory Socket	* 184-pin DDR DIMM socket x2 support DDR200/DDR266/DDR333/DDR400 SDRAM * Expandable to 2GB
Expansion Slot	* AGP slot x1 support AGP 3.0 & 8X mode * 32-bit PCI slot x1
Integrate VGA	* 3D graphic acceleration * VGA Memory share 16MB~64MB from system memory * 24-bit true-color RAMDAC up to 250MHz pixel rate * Resolution up to 1920x1440
Integrate IDE and Serial ATA RAID	* Two PCI IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 33/66/100/133 functions that deliver the data transfer rate up to 133 MB/s * Two Serial ATA ports provide 150 MB/sec data transfer rate for two Serial ATA Devices and offer RAID0, 1 functions
On board LAN	* Integrated RTL8100C PCI LAN Controller * Support 10/100 BASE-T Transfer rate
Audio	* AC'97 Digital Audio controller integrated * 6-channel AC'97 Audio CODEC on board * Audio driver and utility included
BIOS	* Award 4MB Flash ROM
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * Parallel port x1 * Serial port x2 (1x connector, 1x headers) * USB2.0 connector x4, USB2.0 headers x2 (cable option) * Audio connector (Line-in, Line-out, MIC)

1-3 Performance List

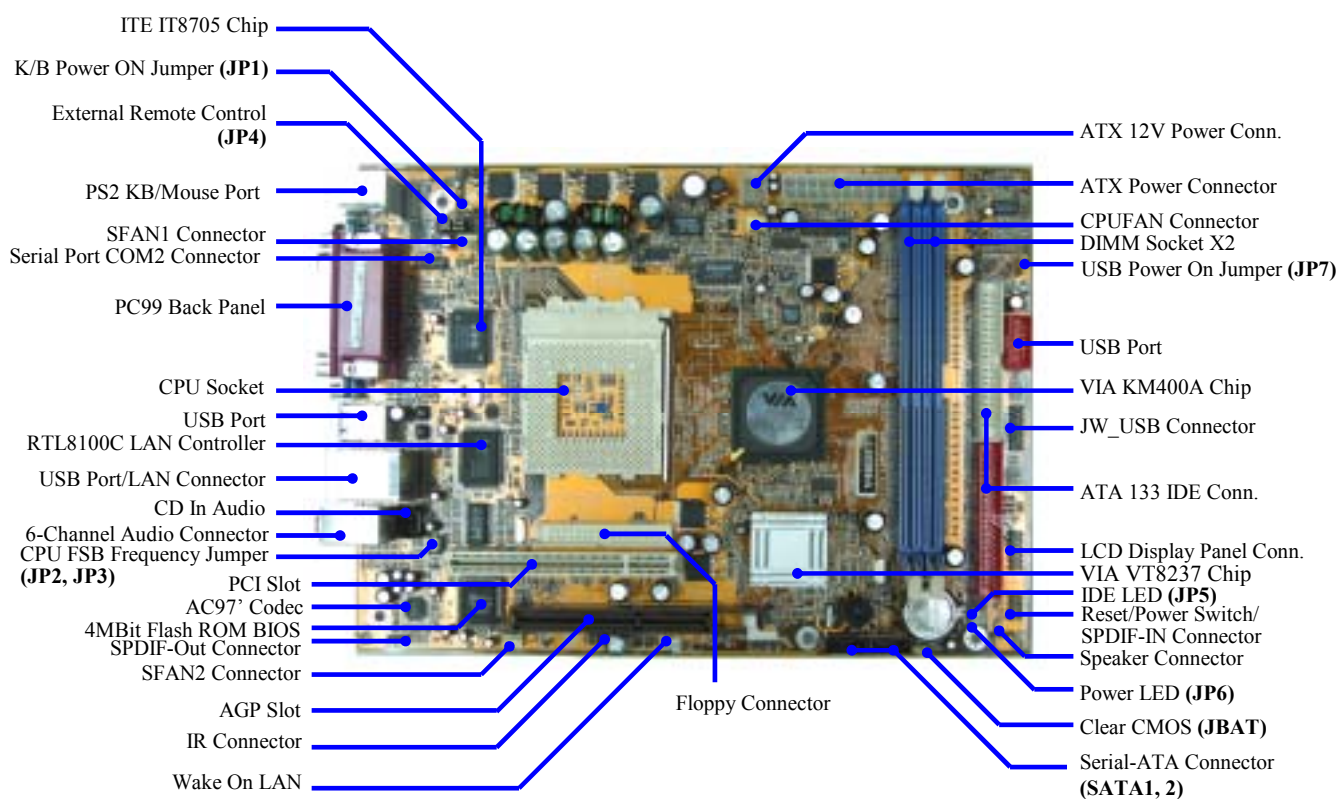
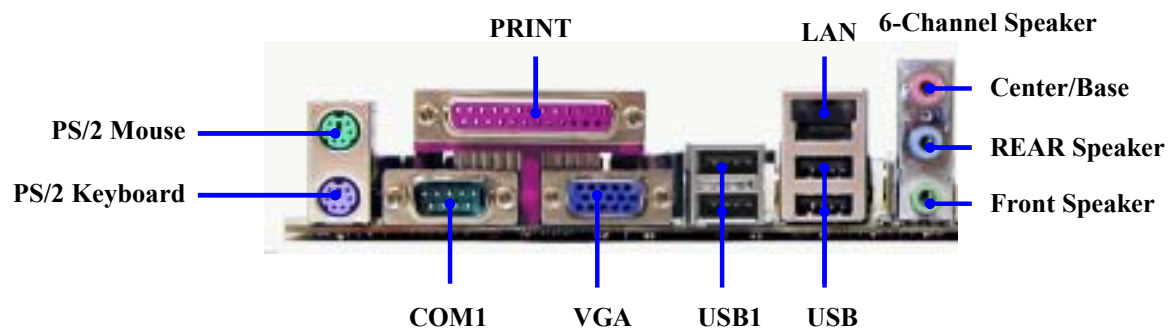
The following performance data list is the testing result of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users (the different Hardware & Software configuration will result in different benchmark testing results.)

Performance Test Report

CPU: AMD Athlon XP 2600+
DRAM: 256MB DDR266 X1 (KINGMAX KSV684T4A1A-06)
256MB DDR333 X1 (MICRON MT46V16M8-6)
On Board VGA : Share 8MB RAM (1024x768 Hi-color)
Hard Disk Driver: IBM IC35L040AVVN07-0 (ATA-100 7200RPM)
BIOS: Award Optimal default
OS: Win 98SE

	DDR266	DDR333
3D Mark 2000	1519	1914
3D Mark 2001SE	597	772
3D Winbench 2000 (16/16BIT)	30.5	37.1
PC Mark 2002		
CPU/Memory/HDD	5965/2775/1126	6000/2954/1150
Content Creation Winstone 2001	70	71.9
Content Creation Winstone 2002	24.5	25.5
Business Winstone 2001	65	66.1
Winbench 99 V1.2:		
Business Disk Winmark99	11900	10800
Hi-end Disk Winmark99	29900	30300
Business Graphic Winmark	145	467
Hi-end Graphic Winmark	908	1790
SYS Mark 2000/2001 : SISMark 2000/2001 Rating (Internet Content Creation / Office Productivity)		
SISMark 2000	273 (328/238)	306 (344/280)
SISMark 2001	179 (202/158)	187 (208/169)
SISOFT Sandra 2002 :		
Dhrystone ALU MIPS	5911	5930
Whetstone FPU MFLOPS	2967	2968
RAM Int Buffered iSSE2 MB/S	1564	1758
RAM Float Buffered iSSE2 MB/S	1488	1667
Integer SSE2 IT/S	11745	11753
Floating- Point SSE2 MB/S	13543	13548
QUAKE3 DEMO1 FPS	54.6	63.9
DEMO2 FPS	50.9	59.9
Return to Castle Wolfenstein FPS	28.4	41.6
WCPUID System/CPU Clock	133.93/2142.84	133.90/2142.46

1-4 Layout Diagram & Jumper Setting



Jumpers

Jumper	Name	Description	Page
JP1	Keyboard Power On Enable/Disabled	3-pin Block	P.8
JP2, JP3	CPU Front Side Bus Frequency	2-pin Block	P.7
JBAT	CMOS RAM Clear	3-pin Block	P.7
JP7	USB Power On Enable/Disabled	3-pin Block	P.8

Connectors

Connector	Name	Description	Page
ATXPOW	ATX Power Connector	20-pin Block	P.12
ATX12V	ATX 12V Power Connector	4-pin Block	P.13
J1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.13
UL_B1	USB Port Connector + RJ-45 LAN Port Connector	4-pin Connector +RJ-45 Connector	P.13
PARALL	Parallel Port Connector	25-pin Female	P.13
CN1	Line-In/Out, MIC Connector	3 phone jack Connector	P.13
COM1	Serial Port COM1 Connector	9-pin Connector	P.13
VGA	VGA Connector	15-pin Female	P.13
FDD	Floppy Driver Connector	34-pin Block	P.14
IDE1/IDE2	Primary/ Secondary IDE Connector	40-pin Block	P.14
SATA1/SATA2	Serial ATA IDE Connector	7-pin Connector	P.14

Headers

Header	Name	Description	Page
JW_USB	Line-Out, MIC Header/ USB2/USB3 Port Headers	13-pin Block	P.15
USB1	USB Port Headers	9-pin Block	P.15
COM2	Serial Port COM2 header	9-pin Block	P.16
SPDIF_IN	SPDIF-In Port Headers	3-pin Block	P.16
SPDIF_OUT	SPDIF-Out Port Headers	3-pin Block	P.16
JP4	External Remote Control Headers	10-pin Block	P.16
JP5	IDE activity LED	2-pin Block	P.16
JP6	Power LED	2-pin Block	P.16
RESET	Reset switch lead	2-pin Block	P.17
PWR BTN	Power switch	2-pin Block	P.17
SPEAK	Speaker connector	4-pin Block	P.17
JW_LCDFP	LCD Display Panel Headers	11-pin Block	P.17
WOL	Wake On-LAN Headers	3-pin Block	P.17
SFAN1,SFAN2,CPUFAN	FAN Headers	3-pin Block	P.18
IR	IR infrared module Headers	5-pin Block	P.18
CDIN	CD Audio-In Headers	4-pin Block	P.18

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 462	CPU Socket	462-pin PPGA CPU Socket	P.9
DDR1, DDR2	DDR SDRAM Module Socket	184-pin DDR SDRAM Module Expansion Socket	P.10
PCI1	PCI Slot	32-bit PCI Local Bus Expansion slots	P.11
AGP	AGP 4X/8X Mode Slot	AGP Expansion Slot	P.12

Chapter 2

Hardware installation

2-1 Hardware installation Steps

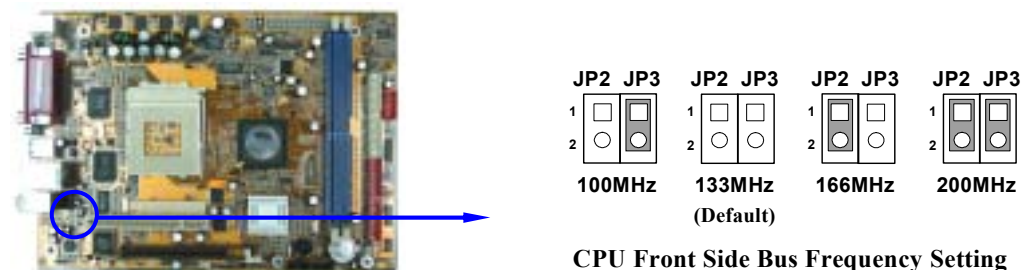
Before using your computer, you had better complete the following steps:

1. Check motherboard setting
2. Install CPU
3. Install Memory
4. Install Expansion cards
5. Connect Ribbon cables, Panel wires, and power supply
6. Setup BIOS
7. Install software driver & utility

2-2 Checking Motherboard's Jumper Setting

(1) CPU Front Side Bus Frequency Setting (2-pin) : JP2, JP3

JP2	JP3	CPU CLK	(Default)
OFF	ON	100MHz	
OFF	OFF	133MHz	
ON	OFF	166MHz	
ON	ON	200MHz	



Note: CPU Front Side Bus Frequency also can setting step by step in BIOS SETUP, please refer page 35 Miscellaneous Control in Host Clock at Next.

(2) CMOS RAM Clear (3-pin) : JBAT

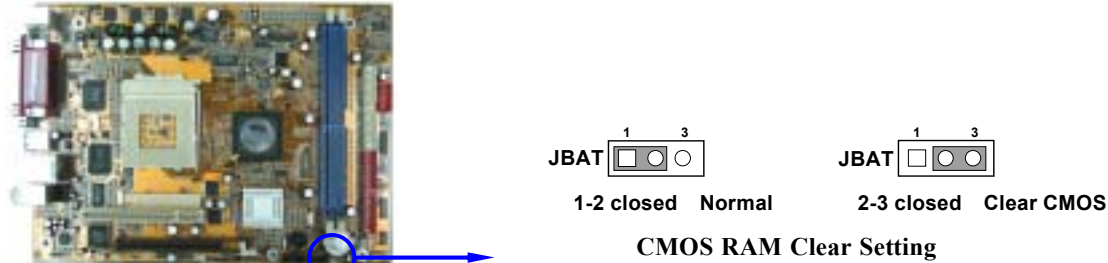
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JBAT to store the CMOS data.

To clear the CMOS, follow the procedure below:

1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JBAT and short pins 2-3 for a few seconds
4. Return JBAT to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

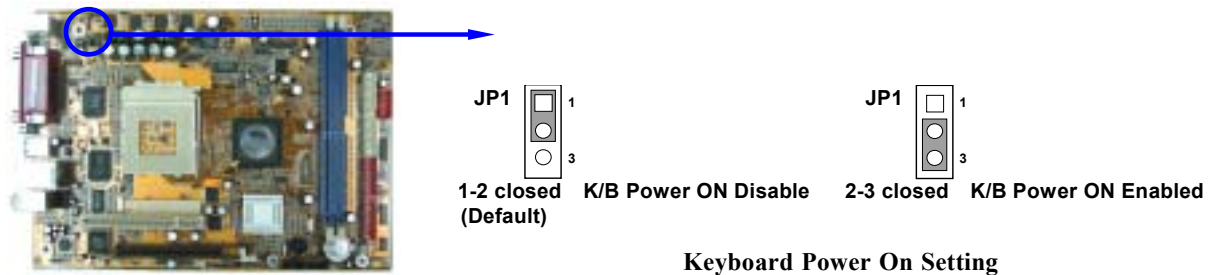
Note: When should clear CMOS

1. **Troubleshooting**
2. **Forget password**
3. **After over clocking system boot fail**

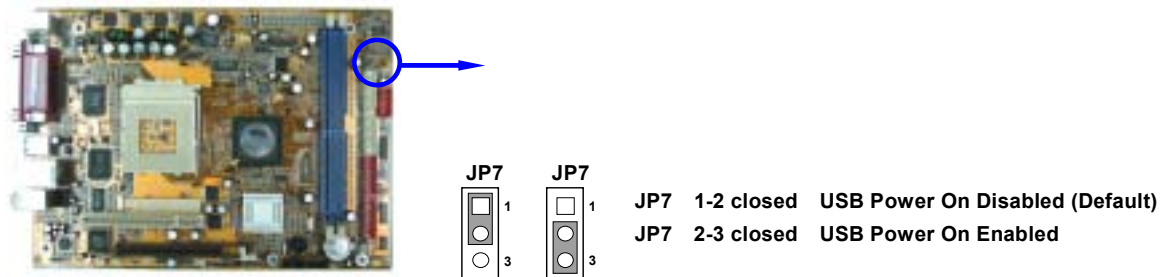


(3) Keyboard Power On function Enabled/Disabled (3-pin): JP1

When setting Enabled you can use keyboard by key in password to power on system.



(4) USB Power On function Enabled/Disabled: JP7



2-3 Install CPU

2-3-1 Glossary

Chipset (or core logic) - two or more integrated circuits which control the interfaces between the system processor, RAM, I/O devices, and adapter cards.

Processor slot/socket - the slot or socket used to mount the system processor on the motherboard.

Slot (AGP, PCI, ISA, RAM) - the slots used to mount adapter cards and system RAM.

AGP - Accelerated Graphics Port - a high speed interface for video cards; runs at 1X (66MHz), 2X (133MHz), or 4X (266MHz).

PCI - Peripheral Component Interconnect - a high speed interface for video cards, sound cards, network interface cards, and modems; runs at 33MHz.

ISA - Industry Standard Architecture - a relatively low speed interface primarily used for sound cards and modems; runs at approx. 8MHz.

Serial Port - a low speed interface typically used for mouse and external modems.

Parallel Port - a low speed interface typically used for printers.

PS/2 - a low speed interface used for mouse and keyboards.

USB - Universal Serial Bus - a medium speed interface typically used for mouse, keyboards, scanners, and some digital cameras.

Sound (interface) - the interface between the sound card or integrated sound connectors and speakers, MIC, game controllers, and MIDI sound devices.

LAN (interface) - **Local Area Network** - the interface to your local area network.

BIOS (Basic Input/Output System) - the program logic used to boot up a computer and establish the relationship between the various components.

Driver - software, which defines the characteristics of a device for use by another device or other software.

Processor - the "central processing unit" (CPU); the principal integrated circuit used for doing the "computing" in "personal computer"

Front Side Bus Frequency - the working frequency of the motherboard, which is generated by the clock generator for CPU, DRAM and PCI BUS.

CPU L2 Cache - the flash memory inside the CPU, normally Athlon CPU has 256K or above, while Duron will have 64K.

2-3-2 About AMD Athlon & Duron 462-pin CPU

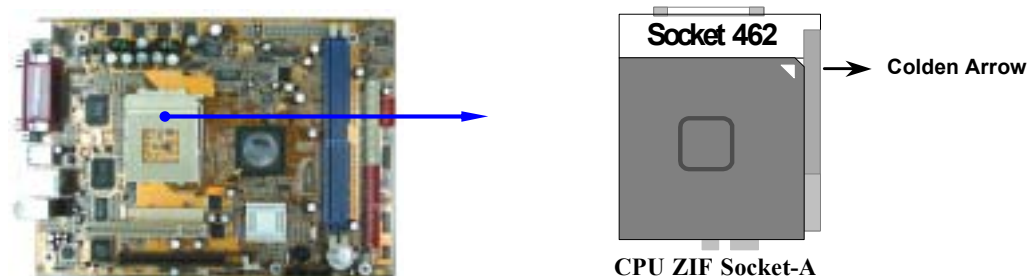
This motherboard supports Socket-A (Socket-462) AMD Athlon/Duron processors.

This motherboard Provides a ZIF Socket-A. The CPU that comes with the motherboard should have a cooling FAN attached to prevent overheating. If this is not the case, then purchase a correct cooling FAN before you turn on your system.

WARNING! Be sure that there is sufficient air circulation across the processor's heatsink and CPU cooling FAN is working correctly, otherwise it may cause the processor and motherboard overheat and damage, you may install an auxiliary cooling FAN, if necessary.
--

WARNING! Due to this motherboard provides new function of protecting CPU ; you must connect the CPU FAN connector on CPUFAN location in order to obtain this feature. Without connection on CPUFAN (or you have connect CPU FAN on FAN1), the system will shut down immediately to protect both your CPU and motherboard.
--

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the level sideways away from the socket then upward to a 90-degree angle. Insert the CPU with the correct orientation as shown below. The notched corner should point toward the end of the level. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown.



When you put the CPU into the ZIF socket. No force require to insert of the CPU, then press the level to Locate position slightly without any extra force.

2-4 Install Memory

This motherboard provides **two** 184-pin DUAL INLINE MEMORY MODULES (DIMM) sites for memory expansion available from minimum memory size of 64MB to maximum memory size of 2.0GB DDR SDRAM.

Valid Memory Configurations

Bank	184-Pin DIMM	PCS	Total Memory
Bank 0, 1 (DDR1)	DDR200/DDR266/DDR333/DDR400 DDR SDRAM Module	X1	64MB~1.0GB
Bank 2, 3 (DDR2)	DDR200/DDR266/DDR333/DDR400 DDR SDRAM Module	X1	64MB~1.0GB
Total	System Memory (Max. 2.0GB)	2	64MB~2.0GB

Generally, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 184-Pin DDR200/DDR266/DDR333/DDR400 DDR SDRAM module looks like.

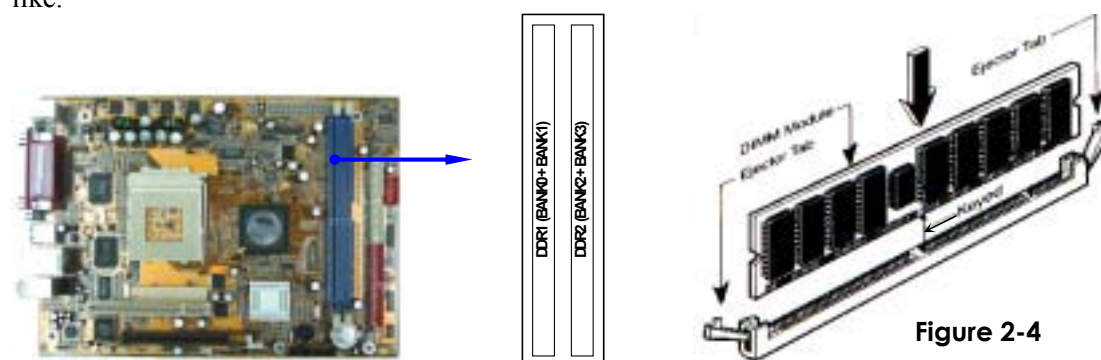


Figure 2-4

NOTE!

When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indention on both sides.

WARNING!

For the DDR SDRAM CLOCK is set at 133MHz, use only DDR266-compliant DDR Modules. When this motherboard operate at 133Mhz, most system will not even boot if non-compliant modules are used because of the strict timing issues, if your DDR Modules are not DDR266-compliant, set the DDR SDRAM clock to 100MHz to ensure system stability.

2-5 Expansion Cards

WARNING! Turn off your power when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2-5-1 Procedure For Expansion Card Installation

1. Read the documentation for your expansion card and make any necessary hardware or software setting for your expansion card such as jumpers.
2. Remove your computer's cover and the bracket plate on the slot you intend to use.
3. Align the card's connectors and press firmly.
4. Secure the card on the slot with the screen you remove above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary.
7. Install the necessary software driver for your expansion card.

2-5-2 Assigning IRQs For Expansion Card

Some expansion cards need an IRQ to operate. Generally, an IRQ must exclusively assign to one use. In a standard design, there are 16 IRQs available but most of them are already in use.

Standard Interrupt Assignments

IRQ	Priority	Standard function
0	N/A	System Timer
1	N/A	Keyboard Controller
2	N/A	Programmable Interrupt
3 *	8	Communications Port (COM2)
4 *	9	Communications Port (COM1)
5 *	6	Sound Card (sometimes LPT2)
6 *	11	Floppy Disk Controller
7 *	7	Printer Port (LPT1)
8	N/A	System CMOS/Real Time Clock
9 *	10	ACPI Mode when enabled
10 *	3	IRQ Holder for PCI Steering
11 *	2	IRQ Holder for PCI Steering
12 *	4	PS/2 Compatible Mouse Port
13	N/A	Numeric Data Processor
14 *	5	Primary IDE Channel
15 *	1	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

2-5-3 Interrupt Request Table For This Motherboard

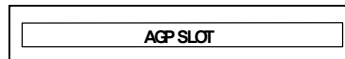
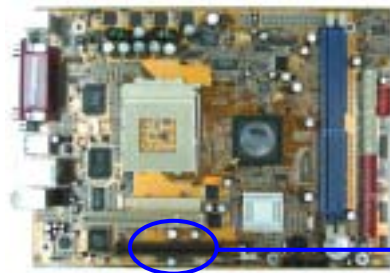
Interrupt request are shared as shown the table below:

	INT A	INT B	INT C	INT D
PCI slot 1	Shared	—	—	—
AGP slot	Shared	—	—	—
AC97/MC97	—	—	Shared	—
Onboard USB	—	—	—	Shared
Onboard USB 1	—	—	—	Shared

IMPORTANT! If using PCI cards on shared slots, make sure that the drivers support “Shared IRQ” or that the cards don’t need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable.

2-5-4 AGP Slot

This motherboard provides an AGP Slot, support the 2X/4X/8X AGP VGA card.

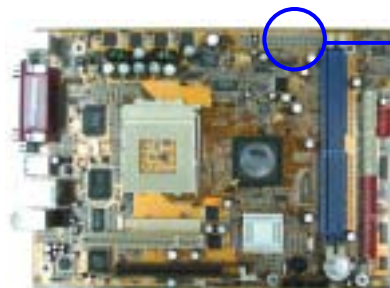


2-6 Connectors, Headers

2-6-1 Connectors

(1) Power Connector (20-pin block) : ATXPOW

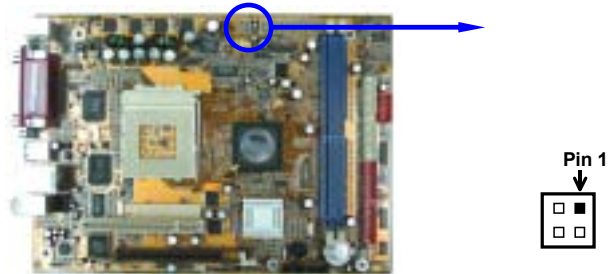
ATX Power Supply connector. This is a new defined 20-pins connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.



Pin 1 →		
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		
■ □		
PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5V (for Soft Logic)
10	+5V	+12V

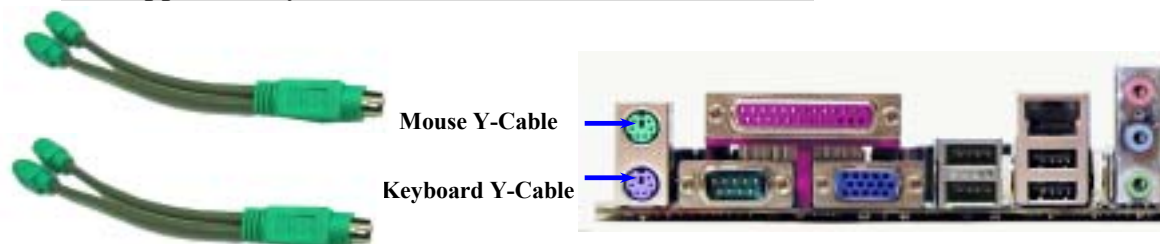
(2) **ATX 12V Power Connector (4-pin block) : ATX12V**

This is a new defined 4-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully support Pentium 4 processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.



(3) **PS/2 Mouse & PS/2 Keyboard Connector : J1**

The connectors for PS/2 keyboard and PS/2 Mouse. **It can connect with a Y-Cable which can support 2 Keyboard and 2 Mouse for 2 user function.**



(4) **USB Port connector: USB**

The connectors are 4-pin connector that connect USB devices to the system board.

(5) **LAN Port connector: UL_B1**

This connector is standard RJ45 connector for Network.

(6) **Parallel Port Connector (25-pin female): PARALL**

Parallel Port connector is a 25-pin D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 “INTEGRATED PERIPHERALS SETUP” section for more detail information.

(7) **Audio Connector : CN1**

This Connector are 3 phone Jack for LINE-OUT, LINE-IN, MIC function port.

Line-out : Audio output to speaker (Front-Speaker in 6-channel function)

Line-in : Audio input to sound chip (Rear-Speaker in 6-channel function)

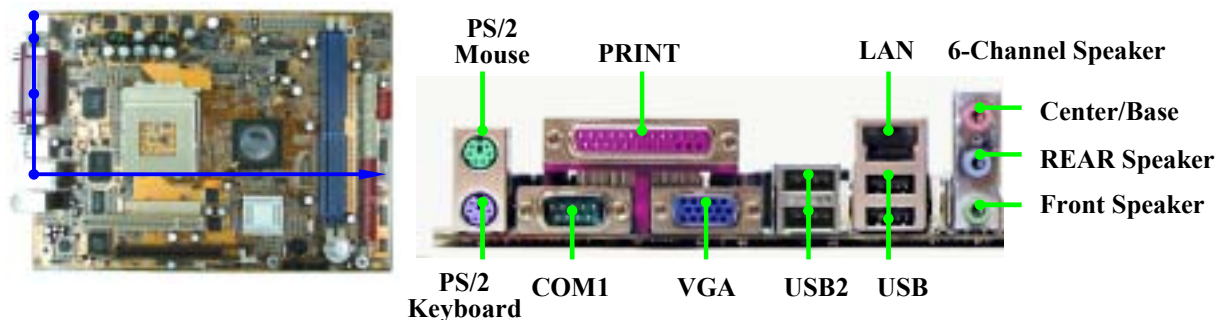
MIC : Microphone Connector (Center/Base Speaker in 6-channel function)

(8) **Serial Port COM1 : COM1**

COM1, COM2 are the 9-pin D-Subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 “INTEGRATED PERIPHERALS SETUP” section for more detail information.

(9) **VGA Connector (15-pin D-Sub) Connector: VGA**

VGA is the 15-pin D-Subminiature female connector for display monitor.



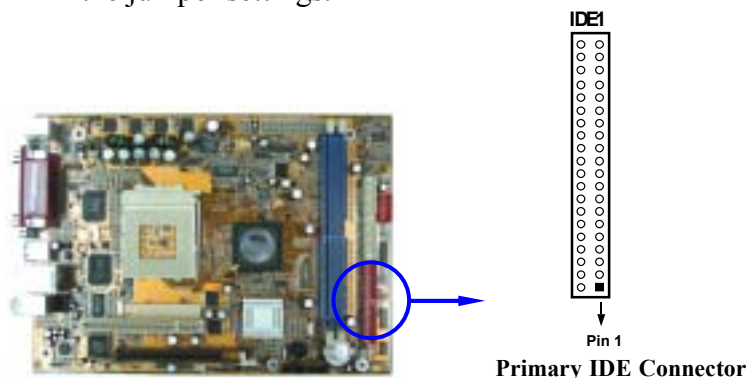
(10) Floppy drive Connector (34-pin block): FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to the floppy drives.



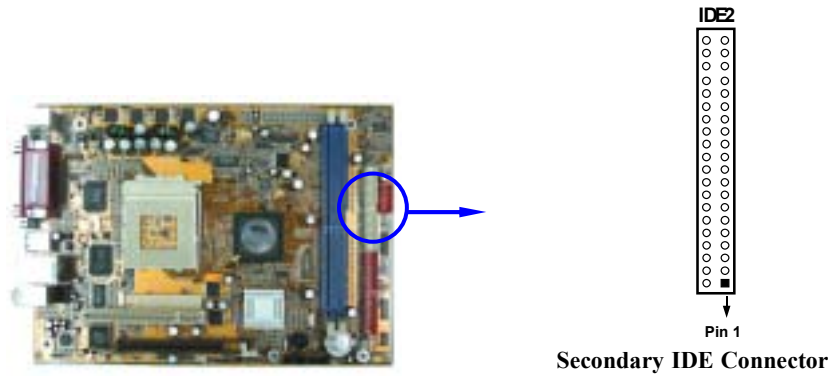
(11) Primary IDE Connector (40-pin block): IDE1

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at 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 jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.



(12) Secondary IDE Connector (40-pin block): IDE2

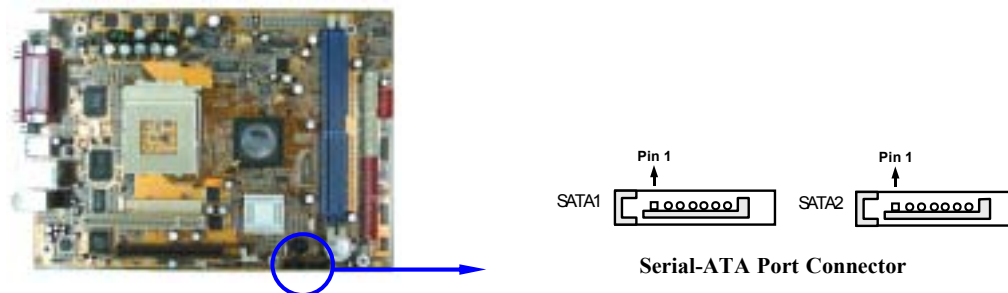
This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.



- Two hard disks can be connected to each connector. The first HDD is referred to as the “Master” and the second HDD is referred to as the “Slave”.
- For performance issues, we strongly suggest you don’t install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop.

(13) Serial-ATA Port connector: SATA1/SATA2

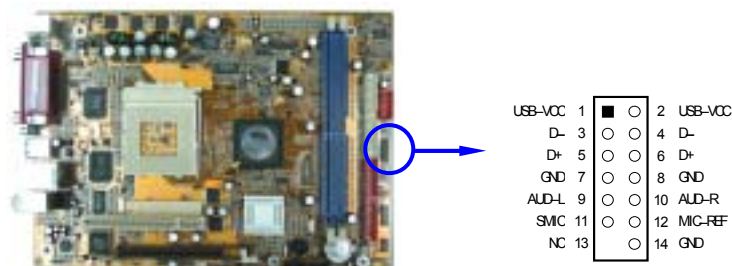
This connector support the provided Serial ATA IDE hard disk cable to connecting the motherboard and serial ATA hard disk.



2-6-2 Headers

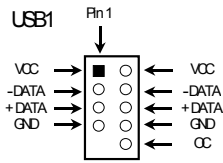
(1) Line-Out/MIC Header/ USB port header (9-pin): JW_USB

This header connect to Front Panel Line-out, MIC/ USB port connector with cable.



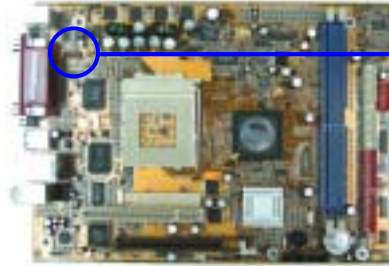
(2) USB Port Headers (9-pin) : USB1

These headers are used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.

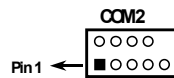


USB Port Headers

(3) Serial Port2 COM2 Headers (9-pin) : COM2



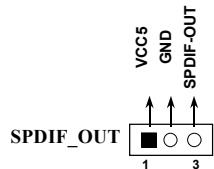
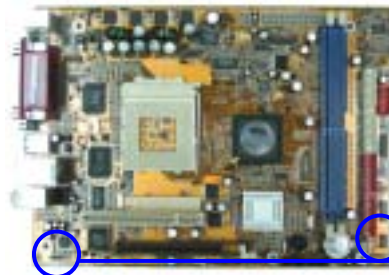
Note: Orient the read marking on the COM2 ribbon cable to pin 1



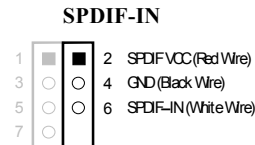
Serial Port2 COM2 Header

(4) SPDIF-In/SPDIF-Out Headers (3-pin) : SPDIF_IN/ SPDIF_OUT

SPDIF_IN is the headers for SPDIF-In Input signal from SPDIF device. SPDIF_OUT is the headers for SPDIF-Out signal to SPDIF device. By optional cable connect with the headers and connectors.



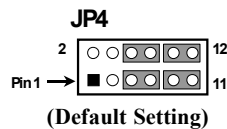
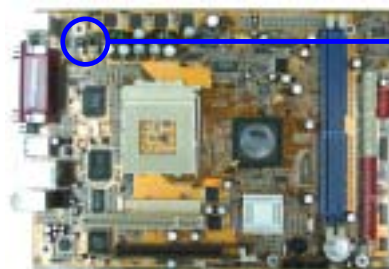
SPDIF-Out Headers



SPDIF-IN Header

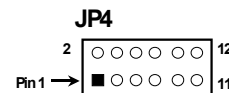
(5) External Remote Control Header (10-pin): JP4

This headers is for connect External Remote Control IR Receiver cable, without the IR Receiver cable please closed 6-8, 10-12, 5-7, 9-11 for normal use.



(Default Setting)

6-8, 10-12, 5-7, 9-11 closed
for Normal use



Open for connect
IR Module Cable

(6) IDE Activity LED: JP5

This connector connects to the hard disk activity indicator light on the case.

(7) Power LED: JP6

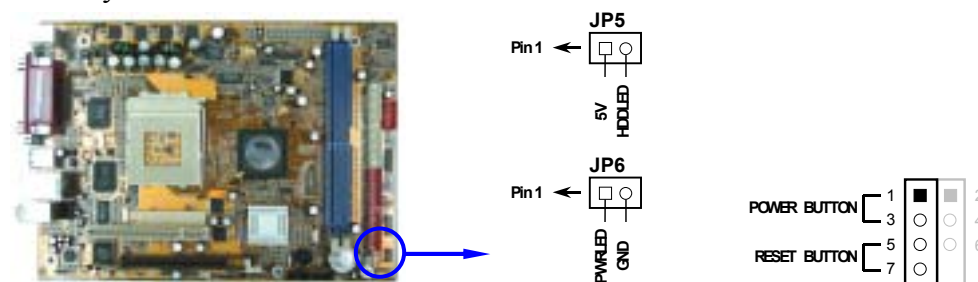
The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

(8) Reset switch lead: RESET

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

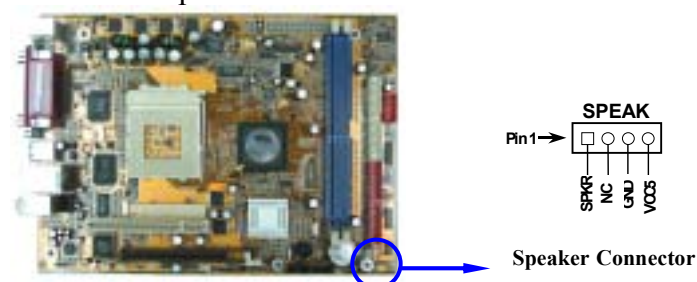
(9) Power switch: PWR BTN

This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.



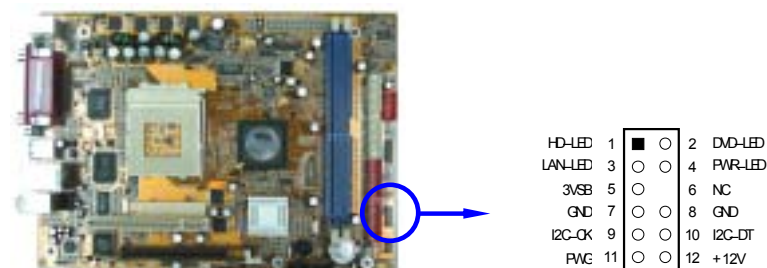
(10) Speaker connector: SPEAK

This 4-pin connector connects to the case-mounted speaker. See the figure below.



(11) LCD Display panel connect Headers (11-pin) : JW_LCDFP

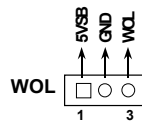
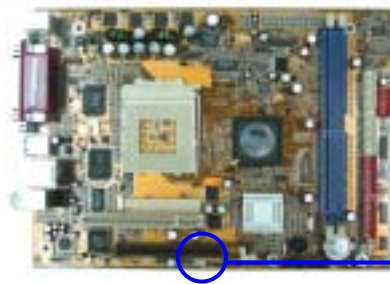
This headers is the connector for LCD Display Panel, it transfer the data from motherboard to display panel. Please connect this headers with optional cable between display and motherboard for display CPU/SYSTEM temperatures /FAN speed and Power/HDD status.



(12) Wake On-LAN Headers (3-pin) : WOL

This connector connects to a LAN card with a WAKE ON-LAN output. This connector power up the system when a wake up signal is received through the LAN card.

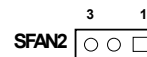
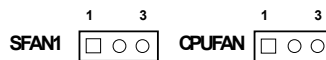
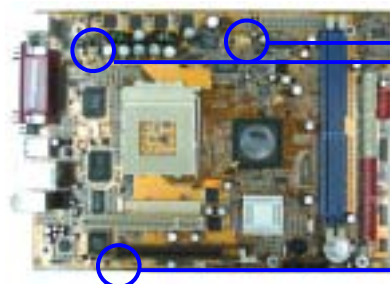
NOTE: This feature requires that Wake On LAN or Ring In Wake up is enabled.



Wake-On-LAN Headers

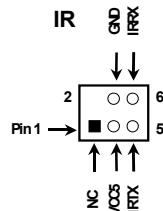
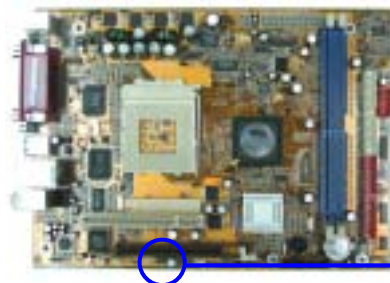
(13) FAN Headers (3-pin) : SFAN1, SFAN2, CPUFAN

These connectors support cooling fans of 350mA (4.2 Watts) or less, depending on the fan manufacturer, the wire and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of connector.



(14) IR infrared module Headers (5-pin) : IR

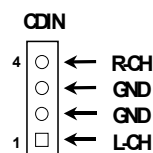
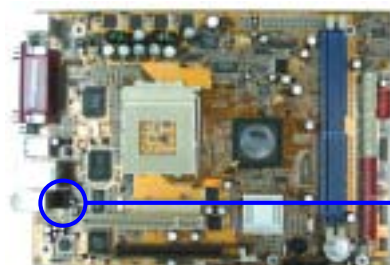
This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



IR infrared module Headers

(15) CD Audio-In Headers (4-pin) : CDIN

CDIN is the connector for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.



CD Audio-In Headers

2-7 Starting Up Your Computer

1. After all connection are made, close your computer case cover.
2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.
3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.
4. Turn on your peripheral as following order:
 - a. Your monitor.
 - b. Other external peripheral (Printer, Scanner, External Modem etc...)
 - c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.
5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the test are running, the BIOS will alarm beeps or additional message will appear on the screen.

If you do not see any thing within 30 seconds from the time you turn on the power. The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

Beep	Meaning
One short beep when displaying logo	No error during POST
Long beeps in an endless loop	No DRAM install or detected
One long beep followed by three short beeps	Video card not found or video card memory bad
High frequency beeps when system is working	CPU overheated System running at a lower frequency

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.
7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click “**Start**” button, click “**Shut down**” and then click “**Shut down the computer?**” The power supply should turn off after windows shut down.

Chapter 3

Introducing BIOS

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.
- Press ↑↓←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press <F10> when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press Page Up/Page Down or +/- keys when you want to modify the BIOS parameters for the active option.

3-1 Entering Setup

Power on the computer and by pressing immediately allows you to enter Setup.

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

Press <F1> to continue, <Ctrl-Alt-Esc> or to enter Setup

3-2 Getting Help

Main Menu

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

Status Page Setup Menu/Option Page Setup Menu

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

Load Optimized Defaults

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

Load Standard Defaults

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

Set Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3-4 Standard CMOS Features

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

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Standard CMOS Features

Date (mm:dd:yy)	Tue, Dec, 29 2003	Item Help
Time (hh:mm:ss)	13 : 57 : 26	
> IDE Primary Master	Press Enter None	Menu Level > Change the day, month, year and century
> IDE Primary Slave	Press Enter None	
> IDE Secondary Master	Press Enter None	
> IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.25 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All,But Keyboard	
Base Memory	640K	
Extended Memory	56320K	
Total Memory	57344K	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Date

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

Day Day of the week, from Sun to Sat, determined by BIOS. Read-only.

Month The month from Jan. through Dec.

Date The date from 1 to 31 can be keyed by numeric function keys.

Year The year depends on the year of the BIOS.

Time

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

Primary Master/Primary Slave

Secondary Master/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

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

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

If the controller of HDD interface is CD-ROM, the selection shall be "None"

Access Mode The settings are Auto Normal, Large, and LBA.

Cylinder number of cylinders

Head number of heads

Precomp write precomp

Landing Zone landing zone

Sector number of sectors

3-5 Advanced BIOS Features

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Advanced BIOS Features

Anti-Virus Protection	Disabled	Item Help
CPU L1 Cache	Enabled	
CPU L2 Cache	Enabled	
Quick Power On Self Test	Enabled	
HDD Boot Sprite	Disabled	
ATA & SCSI Boot Order	ATA, SCSI	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	CDROM	
Boot other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
Video BIOS Shadow	Enabled	
Menu Level >		
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Anti-Virus Protection

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

Disabled (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Enabled Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: The internal cache is built in the processor.

External Cache

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

CPU L2 Cache ECC Checking

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

Quick Power On Self-Test

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

Enabled (default) Enable quick POST

Disabled Normal POST

First/Second/Third/Fourth Boot Device

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

Swap Floppy Drive

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

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default) Keypad is numeric keys.

Off Keypad is arrow keys.

Gate A20 Option

Normal The A20 signal is controlled by keyboard controller or chipset hardware.

Fast (default) The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke. The settings are 250, 500, 750, and 1000.

Security Option

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

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

OS Select For DRAM > 64MB

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

3-6 Advanced Chipset Features

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

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software
Advanced Chipset Features

> DRAM Timing Settings	Press Enter	Item Help
> AGP Timing Settings	Press Enter	
> PCI Timing Settings	Press Enter	Menu Level >
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Memory Hole	Disabled	

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

DRAM Timing Settings

Please refer to section 3-6-1

AGP Timing Settings

Please refer to section 3-6-2

PCI Timing Settings

Please refer to section 3-6-3

System BIOS Cacheable

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

Video RAM Cacheable

Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Memory Hole

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The settings are: Enabled and Disabled.

3-6-1 DRAM Timing Settings

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DRAM Timing Settings

System performance	Manual	Item Help
RAS Active Time	6T	Menu Level >>
RAS Precharge Time	3T	
RAS to CAS Delay	3T	
CAS Latency	2.5T	
Bank Interleave	4 Bank	
DRAM Burst Length	4	
DRAM Command Rate	2T Command	
Write Recovery Time	3T	
↑↓↔← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

RAS Active Time

This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2T and 3T.

RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2T and 3T.

CAS Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2T and 2.5T.

3-6-2 AGP Timing Settings

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AGP Timing Settings

AGP Transfer Aperture Size	64M	Item Help
AGP Mode	Auto	
AGP Driving Control	Auto	Menu Level >>
AGP Driving Value	DA	
AGP Fast Write	Disabled	
AGP Master 1 WS Write	Enabled	
AGP Master 1 WS Read	Enabled	
CPU to AGP Post Write	Enabled	
AGP Delay Transaction	Enabled	
AGP 3.0 Calibration Cycle	Enabled	
VGA Share Memory Size	16MB	
↑↓↔← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

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

3-6-3 PCI Timing Settings

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

PCI Timing Settings

PCI Master 1 WS Write	Disabled	Item Help
PCI Master 1 WS Read	Disabled	
CPU to PCI Post Write	Enabled	Menu Level >>
PCI Delay Transaction	Enabled	
Vlink 8X Support	Enabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

PCI Delay Transaction

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

3-7 Integrated Peripherals

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

Integrated Peripherals

<div>> OnChip IDE Function Press Enter</div> <div>> OnChip Device Function Press Enter</div> <div>> Onboard Super IO Function Press Enter</div> <div>Init Display First PCI Slot</div>	Item Help
	Menu Level >
<div>↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help</div> <div>F5:Previous Values F6:Optimized Defaults F7:Standard Defaults</div>	

OnChip IDE Function

Please refer to section 3-7-1

OnChip Device Function

Please refer to section 3-7-2

Onboard Super IO Function

Please refer to section 3-7-3

Init Display First

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

3-7-1 OnChip IDE Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

OnChip IDE Function

<div>OnChip IDE Channel0 Enabled</div> <div>OnChip IDE Channel1 Enabled</div> <div>Primary Master PIO Auto</div> <div>Primary Slave PIO Auto</div> <div>Secondary Master PIO Auto</div> <div>Secondary Slave PIO Auto</div> <div>Primary Master UDMA Auto</div> <div>Primary Slave UDMA Auto</div> <div>Secondary Master UDMA Auto</div> <div>Secondary Slave UDMA Auto</div> <div>IDE DMA Transfer Access Enabled</div> <div>IDE 32-bit Transfer Mode Enabled</div> <div>IDE HDD Block Mode Enabled</div> <div>IDE Prefetch Mode Enabled</div> <div>Delay For HDD (Secs) 0</div>	Item Help
	Menu Level >>
<div>↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help</div> <div>F5:Previous Values F6:Optimized Defaults F7:Standard Defaults</div>	

OnChip IDE Channal0/Channal1

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

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

IDE HDD Block Mode

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

3-7-2 OnChip Device Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

OnChip Device Function

VIA LAN Function	Enabled	Item Help
VIA LAN Boot ROM	Disabled	
AC97 Sound Device	Auto	Menu Level >>
Game Port Address	201	
Midi Port Address	Disabled	
Midi Port IRQ	10	
AC97 Modem Device	Auto	
USB Host Controller	Enabled	
USB 2.0 Support	Enabled	
USB Keyboard Legacy Support	Disabled	
↑↓↔← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

AC97 Sound Device

This item allows you to decide to enable/disable the chipset family to support AC97 Audio. The settings are: Enabled, Disabled.

Game Port Address/Midi Port Address

This will determine which Address the Game Port/Midi Port will use.

AC97 Modem Device

This item allows you to decide to enable/disable the chipset family to support AC97 Modem. The settings are: Auto, Disabled.

USB Host Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB peripherals. The settings are: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

3-7-3 Onboard Super IO Function

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

Onboard Super IO Function

Onboard FDD Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	Menu Level >>
UART2 Mode Select	Normal	
UART2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Mode	SPP	
ECP Mode Use DMA	3	
↑↓↔← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Onboard FDD Controller

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

Onboard Serial Port 1/Port 2

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

UART2 Mode Select

This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

Onboard Parallel Port

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

Disabled

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

Parallel Port Mode

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

SPP/EPP/ECP/ECP+EPP

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

3-8 Power Management Setup

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

CMOS Setup Utility – Copyright(C) 1984-2003 Award Software

Power Management Setup

ACPI Function	Enabled	Item Help
Video Off Option	Always Off	
Video off Method	V/H SYNC+Blank	
MODEM Use IRQ	3	Menu Level >
Power Button Function	Instant-Off	
State After Power Failure	Off	
> Wake Up Events	Press Enter	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

ACPI Function

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

Video Off Option

This determines the manner in which the monitor is blanked. The choice are Suspend → off, All Modes → Off, and Always On.

Video Off Method

This determines the manner in which the monitor is blanked.

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

Modem Use IRQ

This determines the IRQ in which the MODEM can use.

The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Power Button Function

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

The settings are: Delay 4 Sec, Instant-Off.

Wake Up Events

Please refer to section 3-8-1

3-8-1 Wake up Events

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

Wake Up Events

VGA	OFF	Item Help
LPT & COM	LPT/COM	
HDD & FDD	ON	
PCI Master	OFF	Menu Level >>
Wake-Up on Ring	Disabled	
Wake-Up on PCI PME	Disabled	
PS2 KB Wakeup Selection	Hot Key	
PS2KB Wakeup from S3/S4/S5	Disabled	
Wake-Up on RTC Alarm	Disabled	
x Date of Month Alarm	0	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
> IRQs Activities	Press Enter	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Wake Up On Ring/PME

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Wake-Up on RTC Alarm

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

Date(of month) Alarm

You can choose which month the system will boot up. Set to 0, to boot every day.

Time(hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

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

IRQs Activities

Please refer to section 3-8-1.1

3-8-1.1 IRQs Activities

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

IRQs Activities

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

3-9 PnP/PCI Configuration Setup

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

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

PnP/PCI Configurations

PnP OS Installed	No	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Manual	Menu Level >
x IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	
↑↓↔← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Reset Configuration Data

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

Resource Controlled By

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

by a ">").

The settings are: Auto(ESCD), Manual.

IRQ Resources

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

Please refer to section 3-9-1

PCI/VGA Palette Snoop

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

3-9-1 IRQ Resources

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IRQ Resources

IRQ3	assigned to	PCI Device	Item Help
IRQ4	assigned to	PCI Device	
IRQ5	assigned to	PCI Device	Menu Level >>
IRQ7	assigned to	PCI Device	
IRQ9	assigned to	PCI Device	
IRQ10	assigned to	PCI Device	
IRQ11	assigned to	PCI Device	
IRQ12	assigned to	PCI Device	
IRQ14	assigned to	PCI Device	
IRQ15	assigned to	PCI Device	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

3-10 PC Health Status

This section shows the Status of you CPU, Fan, Warning for overall system status. This is only available if there is Hardware Monitor onboard.

CMOS Setup Utility - Copyright(C) 1984-2003 Award Software

PC Health Status

Shutdown Temperature	Disabled	Item Help	
Show PC Health in Post	Enabled		
Detect CPUFAN in Post	Enabled	Menu Level >	
Vcore	1.60V		
Vcc 2.5V	2.51V		
Vcc 3.3V	3.28V		
Vcc 5V	5.02V		
+12V	12.22V		
3VSB	3.32V		
-12V	-12.36V		
5VSB	5.01V		
Vbat	3.21V		
CPU Temperature	38°C		
System Temperature	25°C		
CPUFAN Speed	5000 rpm		
FAN1 Speed	5000 rpm		
↑↓←→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

Shutdown Temperature

This item can let users setting the Shutdown temperature, when CPU temperature over this setting the system will auto shutdown to protect CPU.

Show PC Health in Post

During Enabled, it displays information list below. The choice is either Enabled or Disabled

Current CPU Temperature/Current System Temp/Current FAN1, FAN2 Speed/Vcore/Vdd/3.3V/+5V/+12V/-12V/VBAT(V)/5VSB(V)

This will show the CPU/FAN/System voltage chart and FAN Speed.

Detect CPUFAN in Post

During Enabled, system will warn the user if CPU Fan is not functioning.

3-11 Miscellaneous Control

This section is for setting CPU Frequency/Voltage Control.

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Miscellaneous Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spread Spectrum	Disabled	
** Current Host Clock is **		
Host Clock at Next Boot is	100MHz	Menu Level >
** Current DRAM Clock is **		
DRAM Clock at next Boot is	133MHz (By SPD)	
VCC 2.5 Select	2.5V (Default)	
VDDQ Select	1.5V (Default)	
VDIMM Select	2.5V (Default)	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Auto Detect DIMM/PCI Clk

This item allows you to enable/disable auto detect DIMM/PCI Clock.

Spread Spectrum

This item allows you to set the CPU Host/PCI clock and Spread Spectrum.

The settings are: Enabled, Disabled.

Host Clock at next Boot is

This item allows you to select CPU frequency step by step increasing

The choice are: 100MHz~132MHz, 133MHz~200MHz.

DRAM Clock at next Boot is

This field displays the capability of the memory modules that you can use

The choice is either 100MHz or 133MHz or 166MHz.

VDDQ Select

This item allows you to select 1.5V of the AGP 4X/8X VGA card. The choice are: 1.5V, 1.6V.

VDIMM Select

This item allows you to select 2.5V of the DDR Module. The choice are: 2.5V, 2.6V, 2.7V, 2.8V.

3-12 Load Standard/Optimized Defaults

Load Standard Defaults

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

Load Standard Defaults (Y/N)? N

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

Load Optimized Defaults

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

Load Optimized Defaults (Y/N)? N

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

3-13 Set Supervisor/User Password

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

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

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

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

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

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

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

Chapter 4

DRIVER & FREE PROGRAM INSTALLATION

Check your package and there is A MAGIC INSTALL CD included. This CD consists of all DRIVERS you need and some free application programs and utility programs. In addition, this CD also include an auto detect software which can tell you which hardware is installed, and which DRIVERS needed so that your system can function properly. We call this auto detect software MAGIC INSTALL.

MAGIC INSTALL supports WINDOWS 9X/ME/NT4.0/2000/XP

Insert CD into your CD-ROM drive and the MAGIC INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER / double-click CD-ROM drive or click START / click RUN / type X:\SETUP.EXE (assuming X is your CD-ROM drive).



From MAGIC INSTALL MENU you may make 12 selections:

- | | |
|----------------|--|
| 1. VIA 4 IN 1 | install VIA Service Pack 4 IN 1 driver |
| 2. VGA | install KM400 DDR VGA driver |
| 3. SOUND | install ALC Audio Codec driver |
| 4. LAN | install RT810X LAN Controller driver |
| 5. USB2.0 | install USB 2.0 driver |
| 6. SATA | install Serial ATA driver |
| 7. PC-CILLIN | install PC-CILLIN2004 anti-virus program |
| 8. PC-HEALTH | install My Guard for VIA8237 Utility |
| 9. REMOTE | install Remote Controller driver |
| 10. MAGIC TWIN | install Magic Twin Utility |
| 11. BROWSE CD | to browse the contents of the CD |
| 12. EXIT | to exit from MAGIC INSTALL menu |

4-1 VIA 4 IN 1 Install VIA Service Pack 4 IN 1 Driver

* The path of the file is X:\VIA\DRIVER\SETUP.EXE

IDE : VIA ATAPI VENDOR SUPPORT DRIVER IS USED TO FIXED COMPATIBILITY ISSUE FOR IDE DEVICES

AGPVXD : VIA AGPVXD DRIVER IS TO BE INSTALLED, IF YOU ARE USING AN AGP VGA CARD, VIAGART.VXD WILL PROVIDE SERVICE ROUTINES TO YOUR VGA DRIVER AND INTERFACE DIRECTLY TO HARDWARE, PROVIDING FAST GRAPHIC ACCESS

IRQ ROUTING : VIA PCI IRQ MINIPORT DRIVER IS TO BE INSTALLED UNDER WIN98 ONLY, IT WILL FIX PCI IRQ ROUTING SEQUENCE

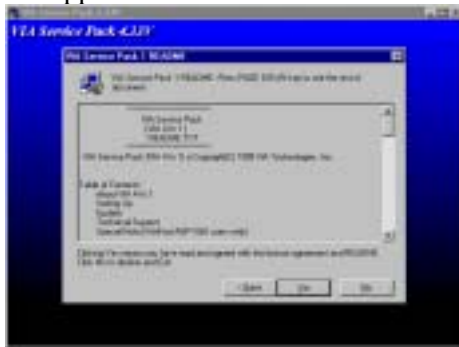
INF : VIA REGISTRY DRIVER IS TO BE INSTALLED UNDER WINDOWS
THE DRIVER WILL ENABLE VIA POWER MANAGERMENT CONTROLLER



1. Click IDE when MAGIC INSTALL MENU appears



2. Click NEXT when VIA Service Pack Wizard appears



3. This is to announce the Copy Write, click Yes



4. Click NEXT to choose all driver



5. Click NEXT to Install ATAPI Vender Support Driver



6. Click NEXT to choose enabled DMA Mode



7. Click NEXT to Install VIA AGP VXD Driver
8. Click NEXT to Install VIA IRQ Routing Mini port Driver



9. Click Finish to restart computer

4-2 VGA install VIA KM400 VGA Driver

For WINDOWS 9X/ME/NT4.0/2000/XP



1. Click VGA when MAGIC INSTALL MENU appears
2. Click NEXT When VIA/S3G KM400 Display driver setup Appears

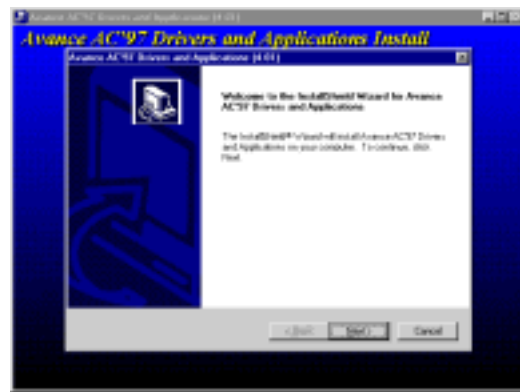


3. Click NEXT to Install Driver File
4. Click Finish to Restart Computer

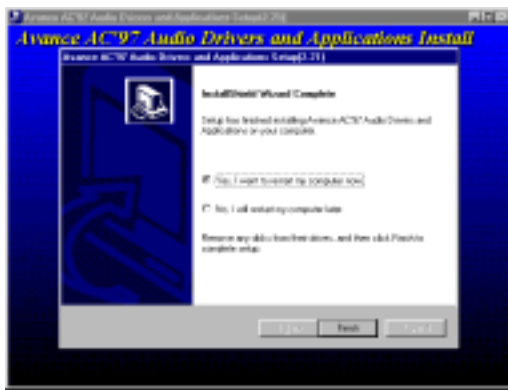
4-3 SOUND install ALC AC97' Codec Audio Driver



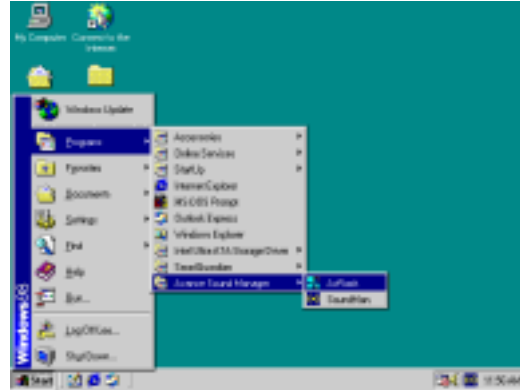
1. Click SOUND when MAGIC INSTALL MENU appears



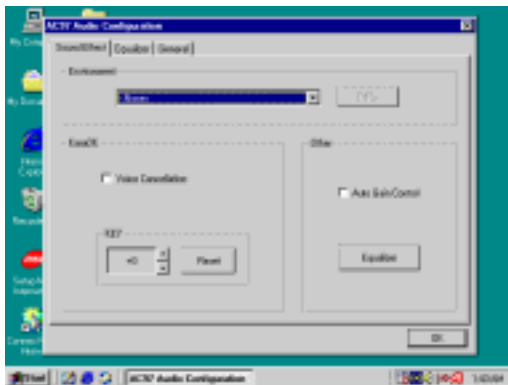
2. Then auto detect operation system language edition, click OK, start to install DRIVER



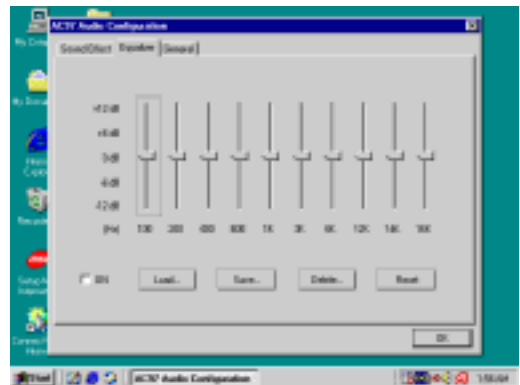
3. Click Finish and Restart Windows



4. Click Start→Program→Avance Sound Manager→AvRack. Then AVRACK Windows appears



5. Sound Effect select and KaraOK Mode Function



6. Manual Sound Effect Setting

Note: The path of the file

For WIN98/NT4.0/WIN2K/XP is X:\CODEC\ALC\SETUP.EXE

Note: In Win2K/WinME users have to click Control Panel\System\Device Manager\DVD\CD-ROM drives to Enabled digital CD Audio for the CD-ROM Device when use the SPDIF-Out digital signal.

4-4 LAN Install RTL810X LAN Controller Driver

The path of the file:

for WINDOWS 98SE is X:\RTLLAN\WIN98

for WINDOWS 98ME is X:\RTLLAN\WINME

for WINDOWS NT4.0 is X:\RTLLAN\WINNT4

for WINDOWS 2000 is X:\RTLLAN\WIN2000

for WINDOWS XP is X:\RTLLAN\WINXP

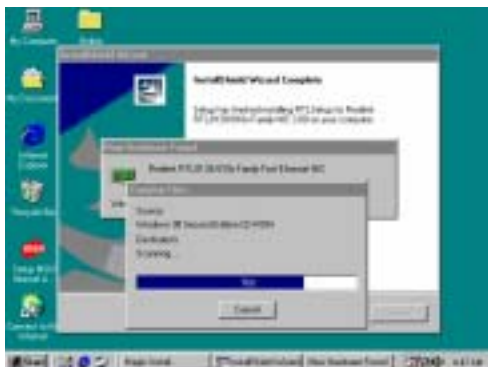
WINDOWS 98SE/98ME/2000/XP Setup



1. Click LAN when Magic Install Menu appears



2. Click NEXT when Realtek InstallShield Wizard appears



3. Window can find Realtek RTL8139/810X family fast Ethernet NIC, when OS ask CAT file path, change the directory to X:\RTLLAN\WIN98 (If OS is win9X)



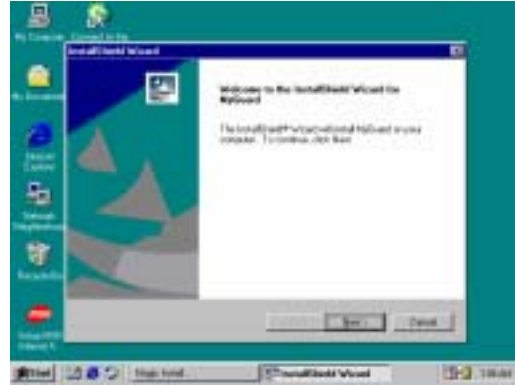
4. Click FINISH and restart your computer

4-5 PC-HEALTH My Guard for VIA8237 Utility

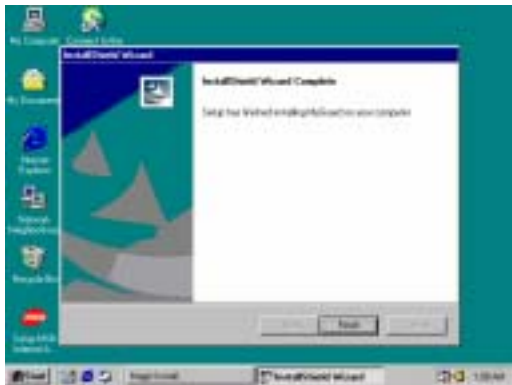
The path of the file is X:\VIA\MYGUARD\SETUP.EXE
(Support Windows 9X/ME/2K/NT/XP)



1. Click PC-Health when Magic Install Menu appears



2. Click Next when Install shield wizard Window appears, Choose destination location and click Next, when the start copy file windows appear, click next



3. Select Finish after setup complete



4. Execute MY GUARD utility, On-time Monitoring your system health

4-6 USB2.0 Install VIA USB2.0 Device Driver



1. Click USB2.0 when MAGIC INSTALL MENU Appear



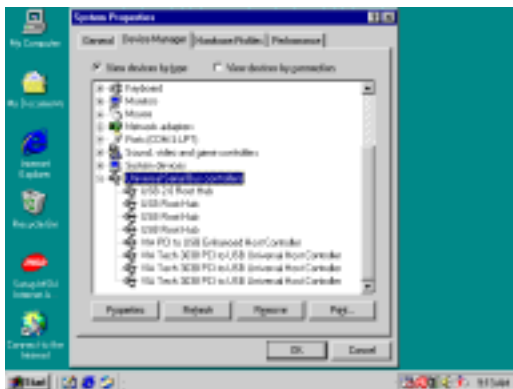
2. When USB2.0 Setup Program Appear, Click NEXT



3. Select Install USB Driver and Click NEXT



4. Select FINISH and Restart your Computer



5. Check device working properly in Device Manager

The Path of the file is X:\VIA\VIAUSB20\SETUP.EXE

4-7 PC-CILLIN Install PC-CILLIN 2004 Anti-virus program



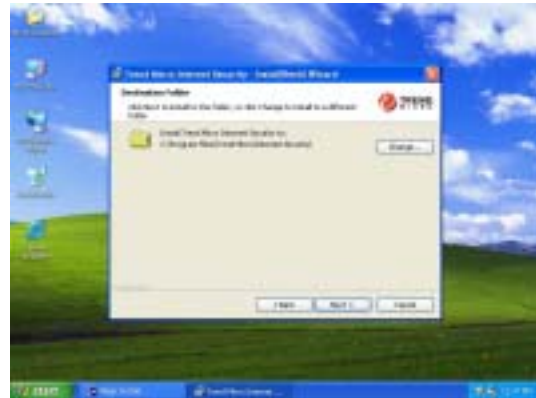
1. Click PC-CILLIN when MAGIC INSTALL MENU appear



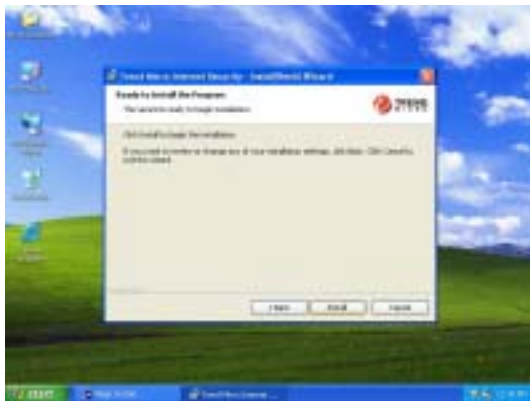
2. Click NEXT when the "Trend Micro internet security" installshield wizard windows appear



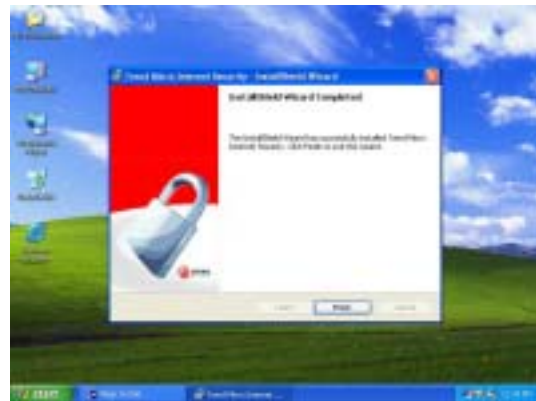
3. This is license agreement, select "I Accept the terms" and Click NEXT



4. Click NEXT and Enter your Customer Information, Click NEXT or choose Change to change the path for the file to be stored



5. Click INSTALL, Start to install the software



6. Setup Complete and click FINISH



7. After PC-CILLIN 2004 complete, Please register your information and we recommend select update item to download newest engine code and virus code

Note : Please install ACROBAT READER, Before you read PC-CILLIN 2004 User Manual, the path at X:\acrobat\adberdr6_enu_full.exe

4-8 HOW TO DISABLE ON-BOARD SOUND

Enter BIOS SETUP choose INTEGRATE PERIPHERALS choose ON-CHIP DEVICE FUNCTION choose AC97 SOUND DEVICE

Disable on-board sound function by press PAGE DOWN KEY to Disable

4-9 HOW TO UPDATE BIOS

Before update BIOS please choose Disabled in “Flash Part Write Protect” item on “Miscellaneous Control” in BIOS Setup, please refer [page 35](#)

- STEP 1.** Prepare a boot disc. (you may make one by click START click RUN type SYS A: click OK)
- STEP 2.** Copy utility program to your boot disc. You may copy from DRIVER CD X:\FLASH\AWDFLASH.EXE or download from our web site.
- STEP 3.** Copy latest BIOS for V4MDF/V4MDFT from our web site to your boot disc.
- STEP 4.** Insert your boot disc into A:,
start the computer, type “Awdflash A:\V4MDFAxXX.BIN /SN/PY/CC/R”
V4MDFAxXX.BIN is the file name of latest BIOS it can be V4MDF A3.BIN or V4MDF B2.BIN
SN means don't save existing BIOS data
PY means renew existing BIOS data
CC means clear existing CMOS data
R means restart computer
- STEP 5.** Push ENTER and the BIOS will be updated, computer will be restarted automatically.

CHAPTER 5

5-1 INSTALLATION OF MagicTwin (a 2-User-System solution)

Introduction

MagicTwin is a 2-User-System solution built on this special designed motherboard with dual video connectors (such as a dual port AGP VGA card), two PS/2 keyboards and two PS/2 mice connected from motherboard using packaged Y-cables and one piece of software (Driver and Tools). It allows you to add ONE additional station simultaneously running under Windows XP Home or XP-Professional (Service Pack 1). Please refer the detail on the packaged MagicTwin XP 2-User Software Installation Guide.

Necessary Components to Configure 2-User-System:

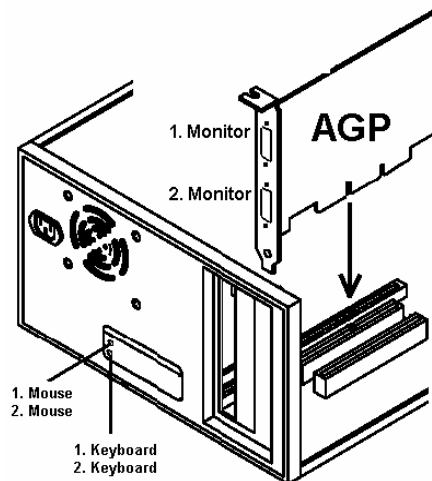
- one special designed Motherboard (incl. all cablings)
- one Dual Display VGA card for two monitors (purchase separately)
- two Y-cables for two PS/2 Keyboards and two PS/2 Mice
- MAGIC INSTALL CD (incl. all DRIVERS you need and some TOOLS to enable the 2-User function of the motherboard). In addition this CD includes an auto detect software, which detects, installs and assigns the related 2nd video display and the 2nd PS/2 keyboard and PS/2 mouse.
- two monitors
- two speaker systems (optional)

Recommendations

- CPU: >1.2 GHz
- minimum 256 MB RAM for two Stations, running simultaneously
- two Standard PS/2 Keyboards, -Mice and two Monitors (Sound: optional)
- Hard disk and CD-ROM drive

Installation of MagicTwin

- We recommend to install Windows XP and all related drivers from the scratch
- Switch off your PC and open the computer case
- Remove the AGP-slot bracket and insert the dual headed AGP Video Card purchase separately from your dealer into the AGP-slot



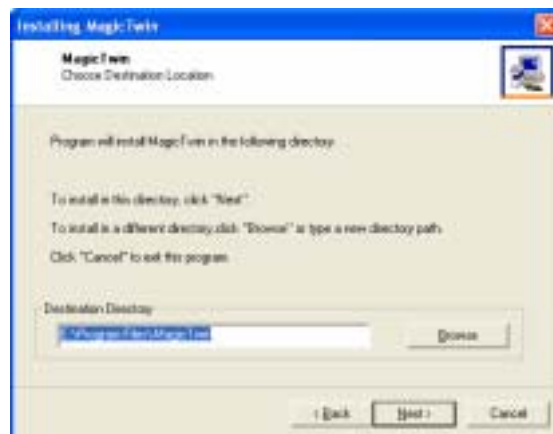
- As well attach the delivered Y-cables to the “green” port (former PS/2 Mouse port) and into the “violet” port (former PS/2 Keyboard port) at the rear side of the motherboard.
- Connect the 1st. and 2nd. Mouse to the octopus cable, which is also linked to the “green” PS/2 connector and the 1st. and 2nd Keyboard to the other octopus cable, which is also connected to the “violet” port. The additional monitor **MUST** be attached otherwise windows will not detect and enable the 2nd monitor. Make sure the additional keyboards and mice work; they should affect the host console.
- Start your PC. Windows will automatically detect the new AGP Video device as a standard VGA-card. Please install all drivers first before your install “MagicTwin” of the MAGIC INSTALL CD. Insert the CD, wait for the automatic start and run the Installation of all other drivers first, and then lastly the MagicTwin from the Magic Install CD. If the CD does not run automatically, please click to Start-> Run-> CD-Drive-> SETUP.EXE.



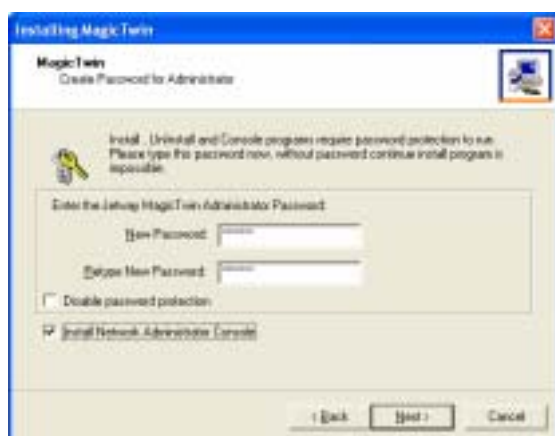
Click “MagicTwin” when the MAGIC INSTALL MENU appears. The Installation-routine will start...



Welcome- Mask, click “Next”



Option: Change destination path or click “Next”



Password and Network Console, click “Next”



Type in the Serial and your Address, click “Next”



Installation in process, please wait...



Afterwards “Reboot your PC”.

- Windows is restarting and loading the new installed drivers. The MagicTwin will be activated and assign automatically the 2nd Station to the 2nd monitor, -PS/2-keyboard and PS/2 mouse.
- Please login in to Windows and add one or more additional users under the control panel.

NVIDIA AGP-card

The NVIDIA AGP dual-headed adapters are supported under MagicTwin. It does not work with ATI graphic card at the moment. One display can be used by the host and the second by the MagicTwin station. This will be done automatically after installation of MagicTwin. Please refer to the MagicTwin XP 2-User Software Installation Guide for detail.

Language Support

The MagicTwin Console text and online help have not been updated for all supported languages. The same applies to the installation process text, menu items and desktop shortcuts. Therefore some text may be incorrect with respect to some languages.

Microsoft License Agreement

MagicTwin is (technically) able to run with only a single Windows-XP Installation and license. Each software application including Windows has its own EULA (End User License Agreement) that you must check for the specifics of multi-user application. 's software license does not supersede any other manufacturer's license. Since most license agreements are vague about this specific situation of multi-user or leave it open, and their partners cannot give any general recommendation other than to check the EULA of the software that is being used on each of the workstations.

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