

Mother Board

A210GDMS/A210PDMS /A210GDMS PRO

User's Manual

AMD Socket 939 Athlon64 Processor

Motherboard

ATi RADEON XPRESS 200/200P

+ ULI M1573

NO. G03A210GDMSR109

Revision 1.0

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Manual Revision History

Revision	Manual Revision History	Date of Release
Rev 1.0	Second edition copy of Mother Boards adopts ATi Chipsets: RADEON EXPRESS 200/200P +ULI M1573	2005/03/15

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****The ranking above is by the sequence of alphabets.****

Safety Instructions

1. Please read these safety instructions carefully.
2. Please keep this User's Manual for later reference.
3. Please place the equipment on a reliable flat surface before installation.
4. Make sure the voltage of the power source when you try to connect the equipment to the power outlet.
5. All cautions and warnings on the equipment should be noted.
6. Disconnect this equipment from connector before inserting add-on interfaces or modules.
7. Never pour any liquid into the opening, this could cause fire or electrical shock.
8. Explosion may occur if the battery is replaced incorrectly. Replace only with the type recommended by the manufacturer.
9. If one of the following situations arises, get the equipment checked by a service personnel:
 - a. Liquid has penetrated into the equipment.
 - b. The equipment has been exposed to moisture.
 - c. The equipment has not work well or you can not get it work according to user's manual.
 - d. The equipment has dropped and damaged.
 - e. If the equipment has obvious sign of breakage.
10. Do not leave the equipment in an humidity or unconditional environment, storage temperature above 60°C(140°F), it may damage the equipment.

Precaution: It may void the warranty if any label on the equipment been removed.

Packing Item Checklist

- Motherboard
- Cable for IDE/Floppy
- Cable for Serial ATA IDE Port(2pcs)
- CD for motherboard utilities
- Cable for USB Port 3/4 (Option)
- User's Manual
- Cable for S-Video/RCA TV-Out (Option)
- Cable for COM2 Port (Option)

AMD K8 Socket 939 Processor Thermal 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 K8 Socket 939 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://www.amd.com/us-en/Processors/DevelopWithAMD/0,,30_2252_869_9460^9515,00.html

Chapter 1

Introduction of A210GDMS PRO/A210GDMS/ A210PDMS Motherboard

Thank you for purchasing the A210GDMS PRO/A210GDMS/A210PDMS motherboard which provide extremely performance and meet future specification demand.

A210GDMS PRO/ A210GDMS/ A210PDMS motherboard is adopted with advanced technologies to deliver the extremely performance for AMD Athlon64 Socket939 processors. A210GDMS PRO/ A210GDMS/ A210PDMS motherboards also feature PCI-EXPRESS, Serial ATA RAID0, 1, 0+1, USB 2.0 as well as 8-channel audio which are based on the advanced ATI RADEON EXPRESS 200 (RS480) (for A210GDMS PRO/ A210GDMS) or ATI RADEON EXPRESS 200P (RX480) (for A210PDMS only) chipset with FSB 1000MHz processor and Dual channel DDR 400 MHz memory support. Now we could know more details by reading the features of motherboards below.

1-1 Feature of motherboard

These motherboards are designed for AMD K8 Athlon64 Socket 939 1000MHz Front Side Bus Frequency CPUs and the memory size expandable to 4.0GB.

By using ATI RADEON EXPRESS 200/200P north bridge and ULI M1573 south bridge chipset which provides 1000MHz Front Side Bus frequency and Dual channel DDR400 SDRAM support as a obvious further step to the next generation of 1000MHz processors. These motherboards also offers two ULTRA ATA **133** to provide speedier HDD throughout that boosts overall system performance, and **support four Serial ATA(150Mb/sec transfer rate) ports. The Serial ATA ports are support RAID0, RAID1, RAID 0+1 functions.**

Integrated High Definition CODEC audio on system supports 8-channel speaker for 3D Surround Effect which is fully compatible with Sound Blaster Pro® that gives you the best sound quality and compatibility. PCI Express slot enables more complex models and detailed textures with PCI Express graphic accelerators which creates richer and more lifelike virtual environments. These motherboards integrated RealTek RT8100C LAN chip supports 10/100Mbps data transfer rate full duplex, half duplex operation. USB control as well as capability of expanding to 8 USB function ports support USB2.0/1.1 Devices.

A210GDMS PRO/ A210GDMS integrated ATI RADEON X300-based 2D/3D graphics engine chipset share 16MB ~128MB system memory for on board VGA memory. The A210GDMS PRO integrated 32MB *Hyper memory* for on board VGA memory to increase performance.

Built-in hardware monitor function will monitor and protect your computer which is the special design in hardware for protecting processor from burned, and will shutdown power supply automatically when CPU is overheated or the CPU cooling fan is not working.

Minor adjustable DDR memory 2.5V Voltage, CPU Vcore Voltage, and other special functions allows user to increase CPU Host clock step by step by setting up BIOS to approach over clocking and increasing stability of the system.

SURROUNDVIEW provided the power and convenience of multi-adapter, multi-monitor support for computers that use internal ATI integrated graphics processors (IGP) in combination with an external ATI graphics card, can support up to three independent monitors.

1-2 Specification

Spec	Description
Design	* Micro ATX form factor 4 layers PCB size: 24.4x24.4cm
Chipset	* ATI RADEON EXPRESS 200 (RS480) North Bridge Chipset for A210GDMS PRO/ A210GDMS * ATI RADEON EXPRESS 200P (RX480) North Bridge Chipset for A210PDMS * ULI M1573 South Bridge
CPU Socket	* Support 64bit AMD Athlon64 939-Pin package utilizes Flip-Chip Pin Grid Array package processor * Support CPU Frequency 1000MHz * Support up to 4000+ processor * Reserves support for future AMD Athlon64 939-pin processors
Memory Socket	* 184-pin DDR module socket x4, Support 4pcs DDR266/ DDR333/ DDR400 DDR Modules Expandable to 4.0GB * Support Dual channel function
Expansion Slot & Headers	* PCI-Express x16 slot 1pcs and PCI-Express x1 slot 2pcs * 32-bit PCI slot x2
Integrate IDE	* Two PCI IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 66/100/133 functions that deliver the data transfer rate up to 133 MB/s
Serial ATA RAID	* Integrated Serial ATA controller support four serial ATA IDE ports provide 150 MB/sec data transfer rate for Serial ATA Devices and offer RAID 0, 1 and 0+1 functions
On board LAN	* RealTek RT8100C 10/100 LAN controller chip support 10/100Mbps full duplex, half duplex operation * Support Boot On LAN function
Integrate VGA (for A210GDMS PRO/ A210GDMS only)	* Integrated an ATI RADEON X300-based 2D/3D graphics engine * On board <i>Hyper Memory</i> 32MB VGA memory for A210GDMS PRO * VGA memory share 16~128MB from system memory * 24-bit true-color RAMDAC up to 350MHz pixel rate * Resolution up to 2048x1536 @ 32bpp
TV-Out	* With optional cable support S-Video/ RCA TV-out signal (<i>users only can use either CRT or TV-Out at the same time</i>)
High Definition Audio	* High Definition Audio CODEC on board * Audio driver and utility included * Support 8 channel Speaker for 3D surround effect * With optional cable support SPDIF-In/Out function
BIOS	* Award 4MBit Flash ROM
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * Parallel port x1, Serial port x1 (2pcs for A210PDMS) * USB2.0 connector x4, headers x4 (connecting cable option) * Audio connector (Line-in, Line-out, MIC)

1-3 Performance List

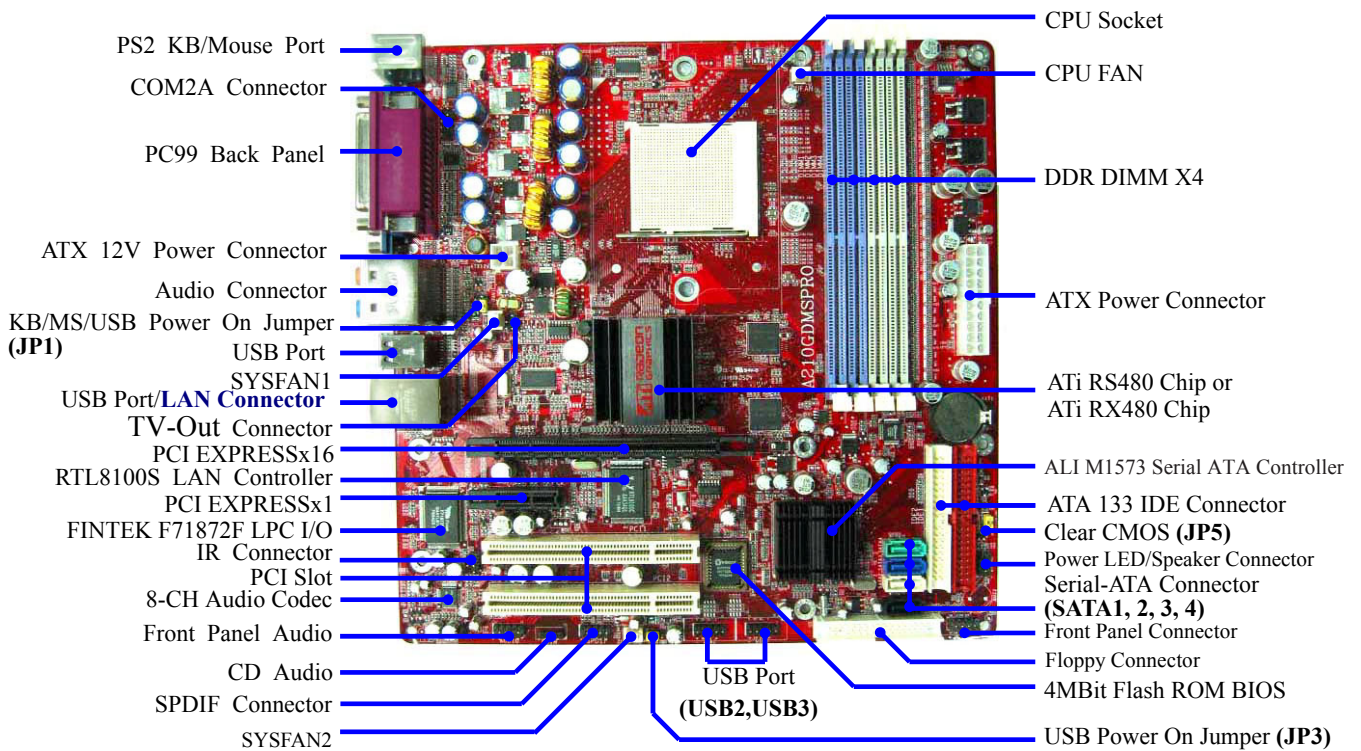
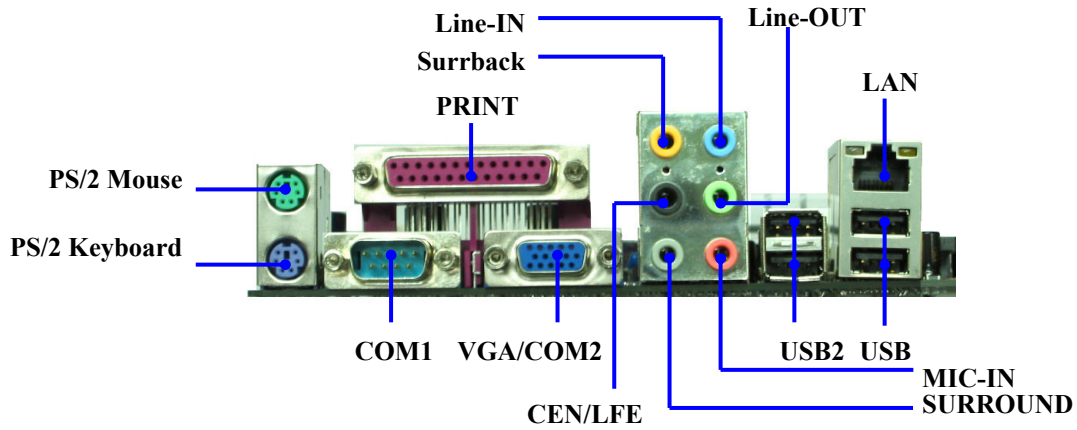
The following performance data list is the testing result of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users (the different Hardware & Software configuration will result in different benchmark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

Performance Test Report

CPU: AMD K8 ATHLON 64 3400+ Support
DRAM: TwinMOS Hynix HY5DU56822CT 512MB DDR400 X 2 (1Gbyte) Memory
VGA Expansion Card: Onboard VGA share 64M + Side port 32M (Engine Clock / Memory Clock : 350 / 350 Mhz , 1024X768X32BIT Color)
Hard Disk Driver: Seagate Barracude 7200.7 SATA150
BIOS: Award Optimal default
OS: Windows XP Professional (SERVICE PACK 2)

3D Mark 2001SE	6579
3D Mark 2003	1817
3D Mark 2005	735
AQUAMRK3	14778 (1593 / 10258)
PCMark2004	
System / CPU / Memory	4083 / 4116 / 4994
Graph / HDD	1614 / 4550
Content Creation Winstone 2004	33.2
Business Winstone 2004	24.5
Winbench 99 V2.0:	
Business/Hi-end Disk Winmark99	8780 / 20900
Business/Hi-end Graphic Winmark	981 / 2110
SISMark 2004: SISMark Rating (Internet Content Creation / Office Productivity)	
SISMark 2004	182 (198 / 167)
3D Creation / 2D Creation	188 / 246
/ Web publication	167
Communication / Document Creation	152 / 186
/ Data Analysis	165
SISOFT Sandra 2005 : 1.CPU Arithmetic Benchmark 2.Memory bandwidth Benchmark 3.CPU Multi-Media Benchmark	
1.Dhrystone ALU	MIPS 9397
Whetstone FPU iSSE2	FLOPS 3602 / 4677
2.Int/Float Buffered iSSE2	MB/S 5610 / 5556
3.Integer/Floating-Point SSE2	IT/S 20920 / 22555
UT2003 Benchmark (flyby/botmatch)	76.32 / 47.29
Quake3 DEMO1 / DEMO2	FPS 191.1 / 183.8
Return to Castle Wolfenstein	FPS 86.6
Super Pi (1M)	Second 40s
CPUZ System / CPU Clock	199.98 / 200 / 2199.75

1-4 Layout Diagram & Jumper Setting



Jumpers

Jumper	Name	Description	Page
JP5	CMOS RAM Clear	3-pin Block	P.6
JP1	Keyboard/ USB/ USB1 Power On Enable/Disabled	3-pin Block	P.7
JP3	USB2/USB3 Power On Enable/Disabled	3-pin Block	P.7

Connectors

Connector	Name	Description	Page
ATXPWR	ATX Power Connector	20-pin Block	P.11
ATX12V1	ATX 12V Power Connector	4-pin Block	P.12
KB_MS	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.12
USB1, USB	USB Port Connector	4-pin Connector	P.12
COM1/COM2 (COM2 only for A210PDMS)	Serial Port COM1/COM2 Connector	9-pin Connector	P.12
PARALLEL	Parallel Port Header	25-pin Connector	P.12
LAN	LAN Port Connector	RJ-45 Connector	P.12
VGA (for A210GDMS serial)	VGA Display Connector	15-pin Female Connector	P.13
J1	High Definition Audio Connector	6 phone jack	P.13
FDD	Floppy Driver Connector	34-pin Block	P.13
IDE1/IDE2	Primary/Secondary IDE Connector	40-pin Block	P.13
SATA1, SATA2 SATA3, SATA4	Serial ATA Port Connector	7-pin Block	P.14

Headers

Header	Name	Description	Page
AUDIO	Line-Out, MIC Header	9-pin Block	P.15
COM2A (for A210GDMS serial)	Serial Port COM2 Header	9-pin Block	P.15
USB2/USB3	USB Port Headers	9-pin Block	P.15
JW FP (Power LED/Reset/ IDE LED/ Power Button)	Front Panel Header (including Power LED/IDE activity LED/Reset switch / Power On Button lead)	9-pin Block	P.16
SPEAK	PC Speaker Connector	4-pin Block	P.16
PWR LED	Power LED	3-pin Block	P.16
SYSFAN1, SYSFAN2, CPUFAN	FAN Headers	3-pin Block	P.16
CDIN	CD Audio-In Headers	4-pin Block	P. 17
TV-Out	TV S-Video/ RCA Headers	5-pin Block	P. 17
SPDIF	SPDIF In/Out Headers	9-pin Block	P. 17

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 939 Pin	CPU Socket	939-pin mPGA AMD K8 CPU Socket	P.8
DIMM1~DIMM4	DDR Module Socket	184-pin DDR Module expansion Socket	P.9
PE1	PCI-EXPRESS x16 slot	164-pin PCI-EXPRESS x16 slot	P.11
PE2	PCI-EXPRESS x1 slot	36-pin PCI-EXPRESS x1 slot	P.11
PCI1 ~ PCI2	PCI Slot	32-bit PCI Local Bus Expansion slots	P.10

Chapter 2

Hardware installation

2-1 Pre-Hardware installation

Before starting to use the computer with the motherboard installed the components on it, please make sure complete the following steps:

1. To verify the jumper settings of your motherboard
2. To install the CPU and Cooling Kits
3. To install the system memory
4. To install the expansion cards
5. To connect with ribbon cables, panel wires, and power supply
6. To setup BIOS
7. To install software driver & utility

2-2 To verify the jumper settings of the motherboard

(1) CMOS RAM Clear (3-pin) : JP5

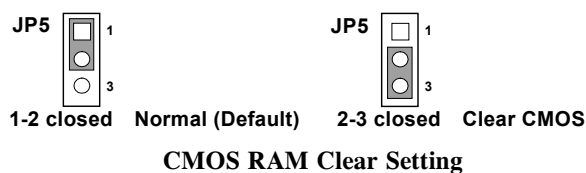
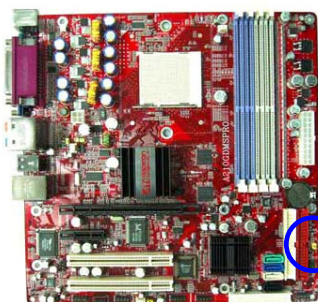
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JP5 to store the CMOS data.

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 JP5 and short pins 2-3 for a few seconds
4. Return JP5 to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

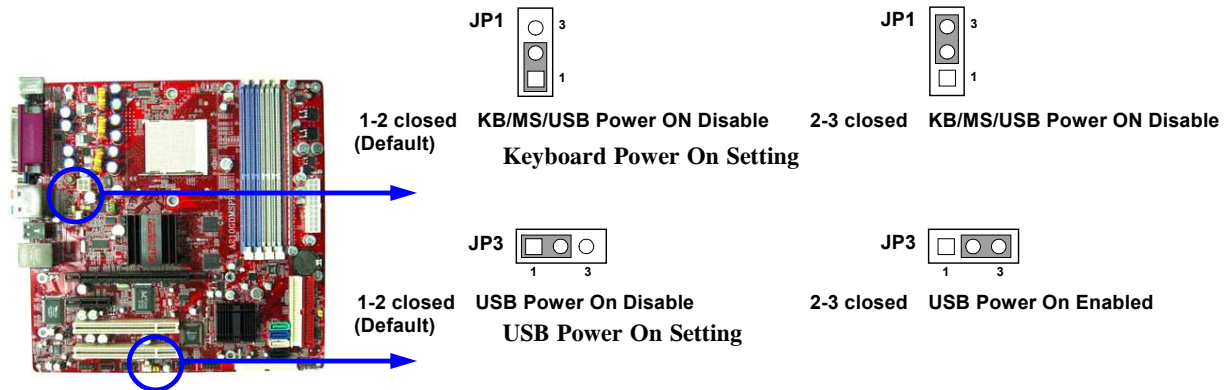
Note: When should clear CMOS

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



(2) Keyboard/USB Power On function Enabled/Disabled: JP1, JP3

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



2-3 To install the 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 socket - the socket used to mount the system processor on the motherboard.

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

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

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

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

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

USB - Universal Serial Bus - the 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 links to local area network.

BIOS (Basic Input/Output System) - the program logic used to boot up a computer and establish the relationship between 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 serial CPU has 256K or above, and Sempron has 64K.

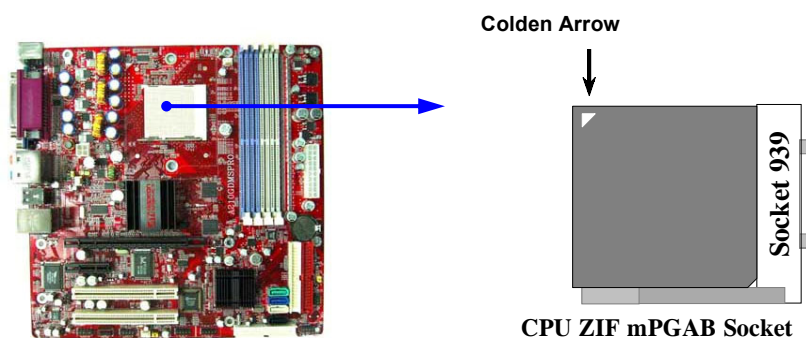
2-3-2 About AMD Athlon64 939-pin CPU

This motherboard provides a 939-pin Socket, Zero Insertion Force (ZIF) socket, referred to as the mPGA939 socket supports AMD Athlon64 processor in the 939 Pin package utilizes Flip-Chip Pin Grid Array package technology.

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.

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 To install the system memory

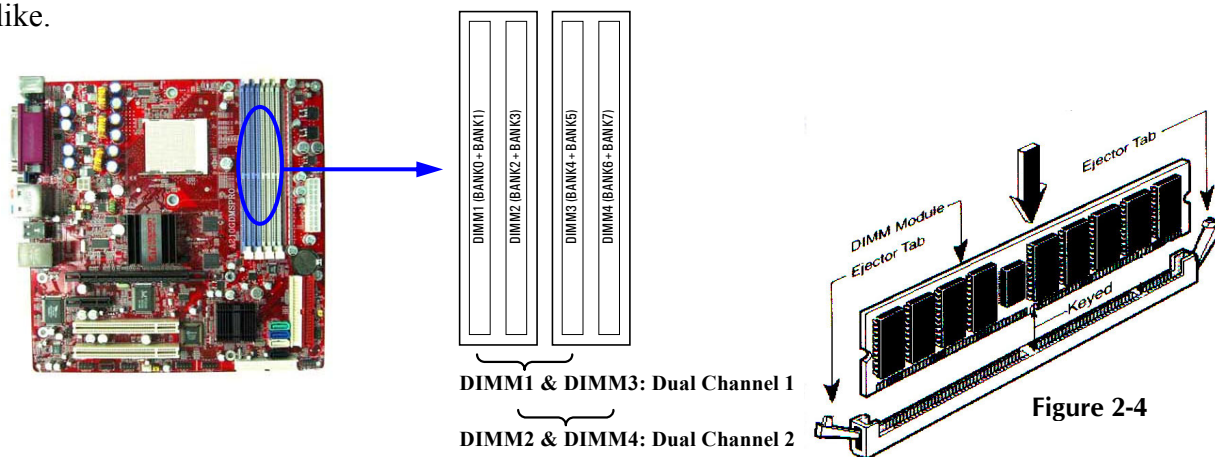
This motherboard provides **four** 184-pin DUAL INLINE MEMORY MODULES (DIMM) sites for memory expansion available from minimum memory size of 64MB to maximum memory size of 4.0GB DDR SDRAM.

Valid Memory Configurations

Bank	184-Pin DIMM	PCS	Total Memory
Bank 0, 1 (DIMM1)	PC2100/PC2700/PC3200 DDR SDRAM	X1	64MB~1.0GB
Bank 2, 3 (DIMM2)	PC2100/PC2700/PC3200 DDR SDRAM	X1	64MB~1.0GB
Bank 4, 5 (DIMM3)	PC2100/PC2700/PC3200 DDR SDRAM	X1	64MB~1.0GB
Bank 6, 7 (DIMM4)	PC2100/PC2700/PC3200 DDR SDRAM	X1	64MB~1.0GB
Total	System Memory (Max. 4.0GB)	4	64MB~4.0GB

NOTE! Make sure the total installed memory does not exceed 4.0GB, otherwise the system may hang during startup.

Generally speaking, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 184-Pin PC2100/PC2700/PC3200 DDR SDRAM module looks like.



NOTE! When you install DIMM modules fully into the DIMM sockets the eject tab should be locked into the DIMM modules firmly and fit to its indentation on both sides.

2-5 To install the 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. To read documentations or manuals for your expansion cards and make any necessary hardware or software settings for your expansion card such as jumpers.
2. To remove your computer's cover and the bracket plate on the slot you intend to use.
3. To align the card's connectors and press firmly.
4. To secure the card on the slot with the screen you remove above.
5. To replace the computer system's cover.
6. To set up the BIOS if it's necessary.
7. To install the necessary software drivers for your expansion cards.

2-5-2 Assigning IRQs For Expansion Card

Some expansion cards need to assign an IRQ address to operate. Generally speaking, an IRQ address must exclusively assign to one use only. With standard factory 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

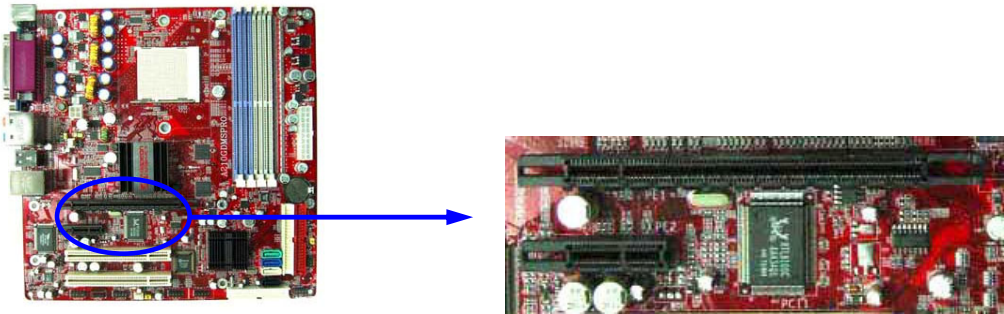
Interrupt requests are shared as shown the table below:

	INT A	INT B	INT C	INT D	INT E
PCI slot 1	Shared	—	—	—	—
PCI slot 2	—	Shared	—	—	—

IMPORTANT! While 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 Slot

2-5-4 PCI-EXPRESS Slot

This motherboard provides one 16-lane PCI Express slot intended for Graphics Attach, and one x1 PCI Express Slot. Fully compliant to the *PCI Express Base Specification revision 1.0a* , support PCI Express VGA card, and other PCI Express device.

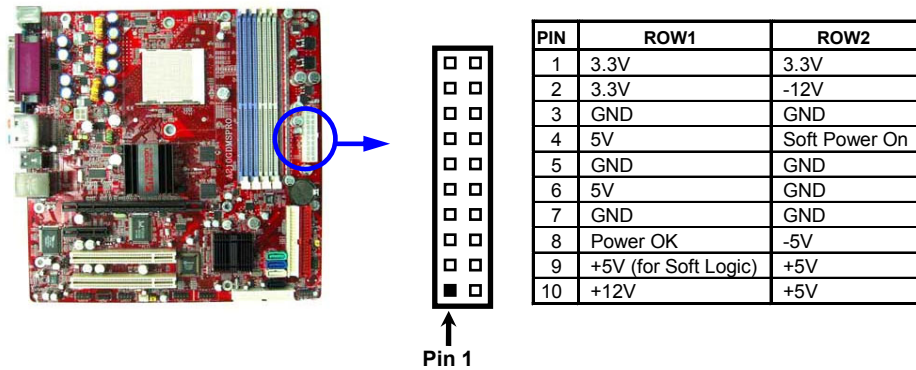


2-6 Connectors and pin headers

2-6-1 Connectors

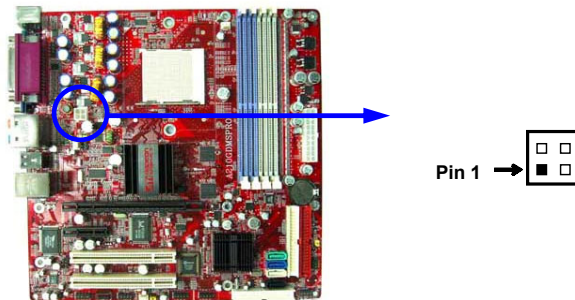
(1) Power Connector (20-pin block) : ATXPWR

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 turns 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.



(2) ATX 12V Power Connector (4-pin block) : ATX12V1

This is a new defined 4-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully support 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: KB_MS

The connectors for PS/2 keyboard and PS/2 Mouse.

(4) USB Port connector: USB1, USB

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

(5) Serial Port COM1/COM2: COM1/COM2 (COM2 only for A210PDMS)

COM1/COM2 is 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.

(6) Parallel Port Connector (25-pin female): PARALLEL

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) LAN Port connector: LAN

This connector is standard RJ45 connector for Network

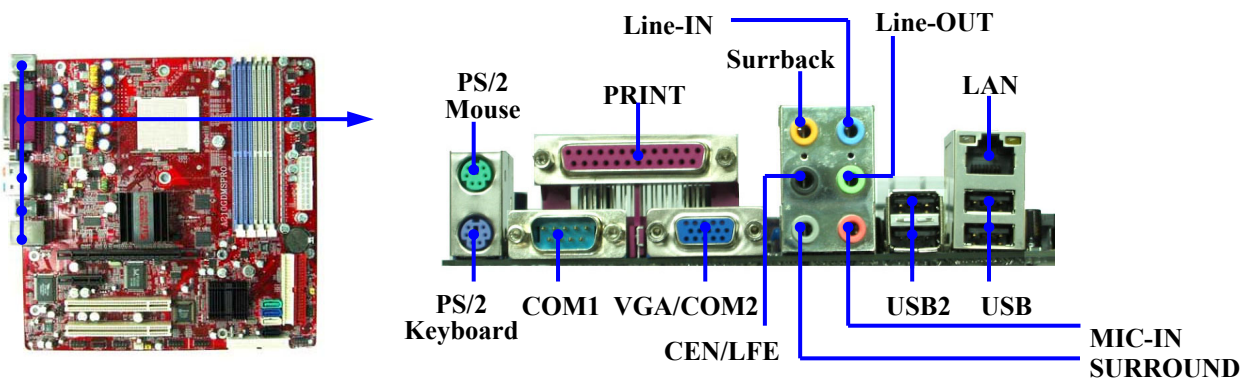
(8) High Definition Audio Connector: J1

This Connector are 6 phone Jack for LINE-OUT, LINE-IN, MIC, Surrback, Surround, CEN/LEF

- Line-out : (GREEN)** Audio output to speaker
- Line-in : (BLUE)** Audio input to sound chip
- MIC : (PINK)** Microphone Connector
- Surrback : (ORANGE)** Audio output to speaker-Rear speaker out
- CEN/LEF : (BLACKNESS)** Audio output to speaker-Center/Subwoofer speaker out
- Surround : (GRAY)** Audio output to speaker-Side speaker out

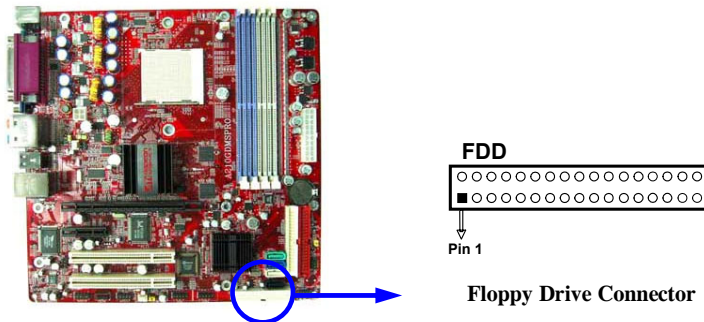
(9) VGA Connector (15-pin D-Sub) Connector: VGA (for A210GDMS serial)

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



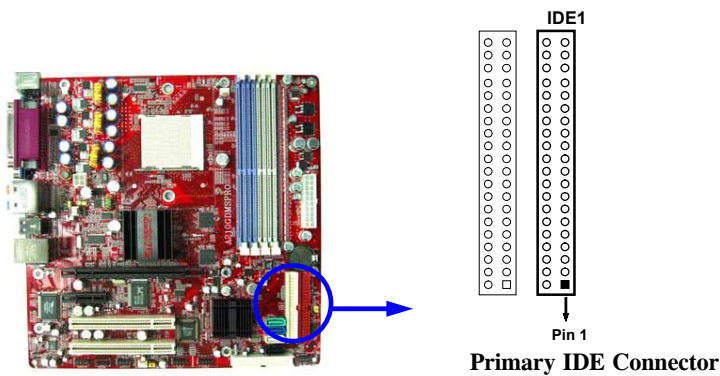
(10) Floppy drive Connector (34-pin block): FDD

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.



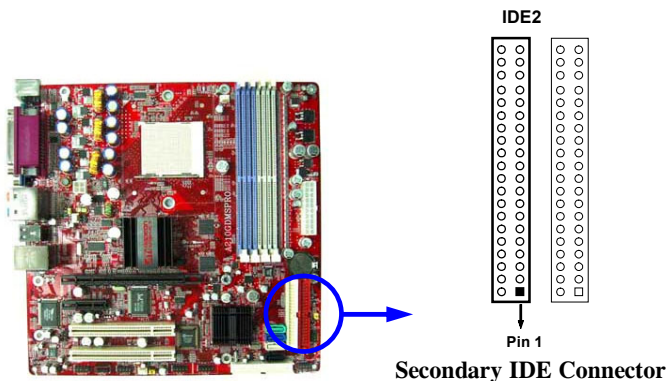
(11) Primary IDE Connector (40-pin block): IDE1

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

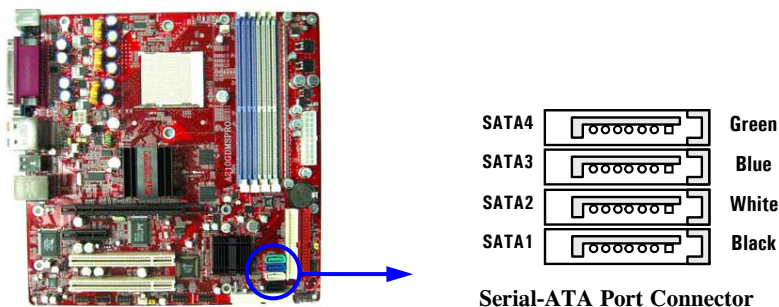
This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.



- 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/SATA3/SATA4

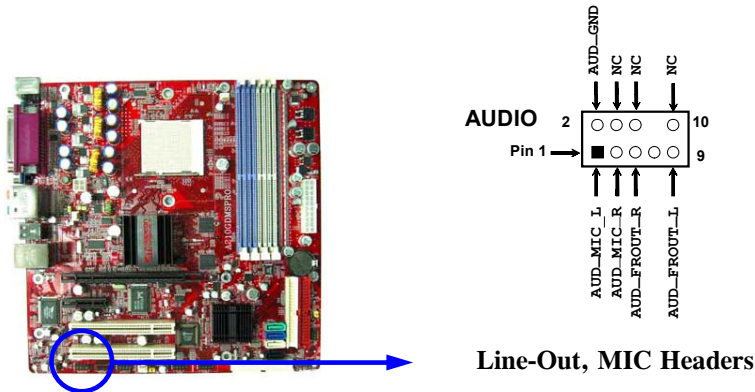
This connector support the provided Serial ATA IDE hard disk cable to connecting the motherboard and serial ATA hard disk.



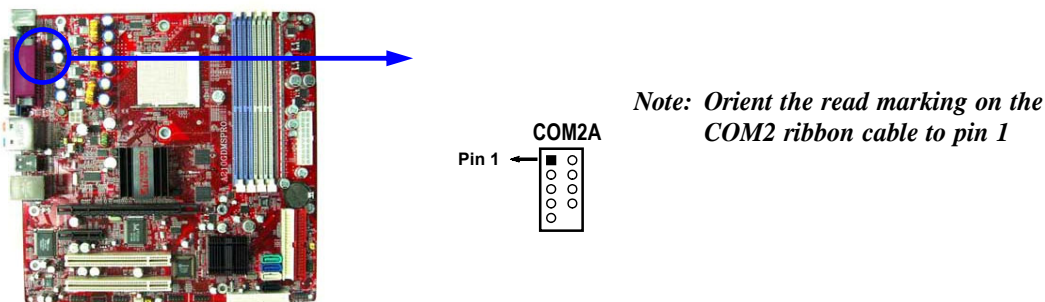
2-6-2 Pin headers

(1) Line-Out, MIC Header (9-pin): AUDIO

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

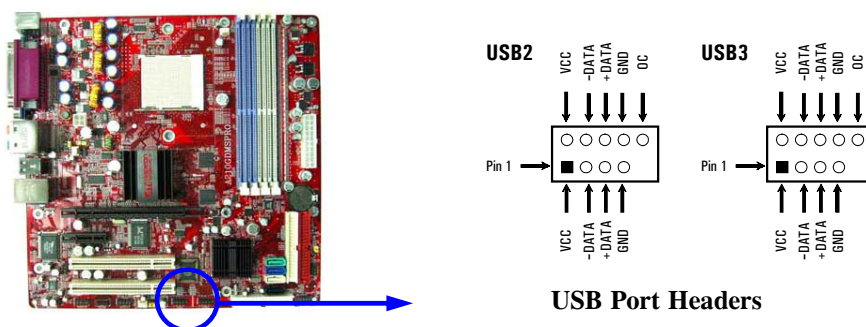


(2) Serial Port COM2 (9-pin): COM2A (for A210GDMS PRO/A210GDMS)



(3) USB Port Headers (9-pin) : USB2/USB3

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.



(4) 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 lift of the system's power supply. See the figure below.

(5) IDE Activity LED: HD LED

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

(6) Power switch: PWR BTN

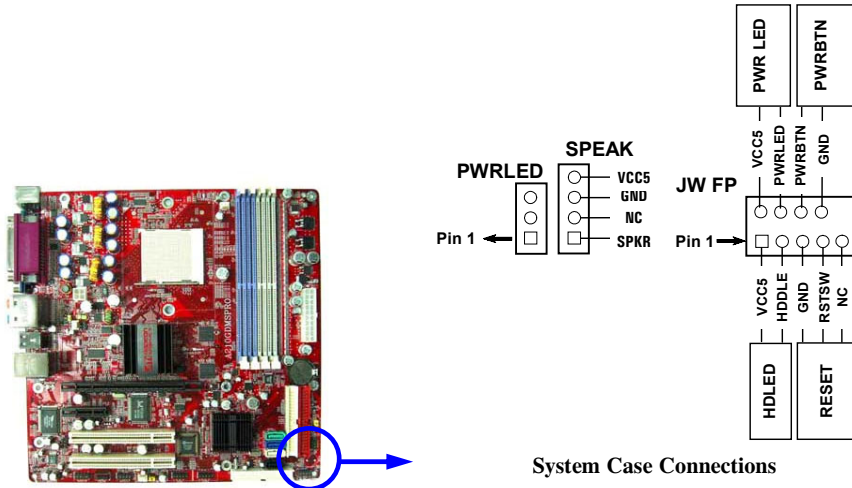
This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.

(7) Speaker connector: SPEAK

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

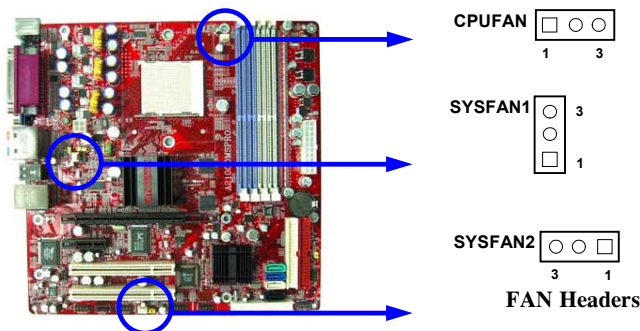
(8) Power LED: PWR LED

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



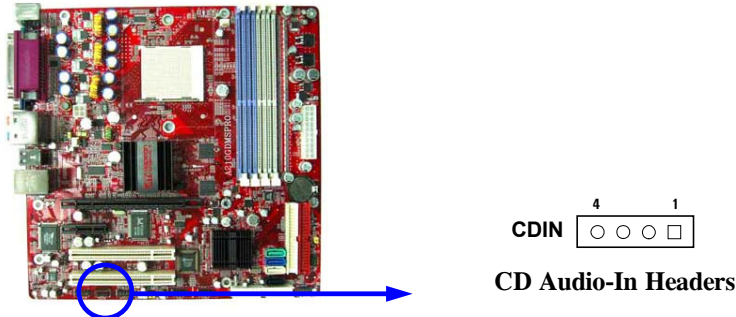
(9) FAN Headers (3-pin) : SYSFAN1, SYSFAN2, CPUFAN

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.



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

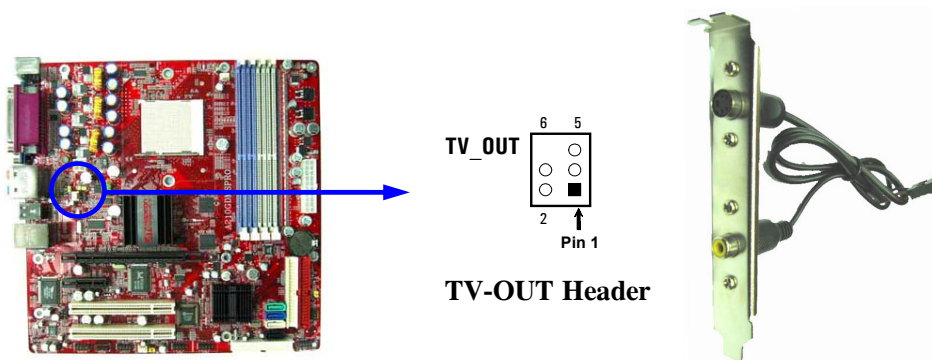
CDIN is the connector for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.



(11) TV-Out, S-Video/RCA Header (5-pin): TV_OUT

This headers is for on board VGA TV-out cable.

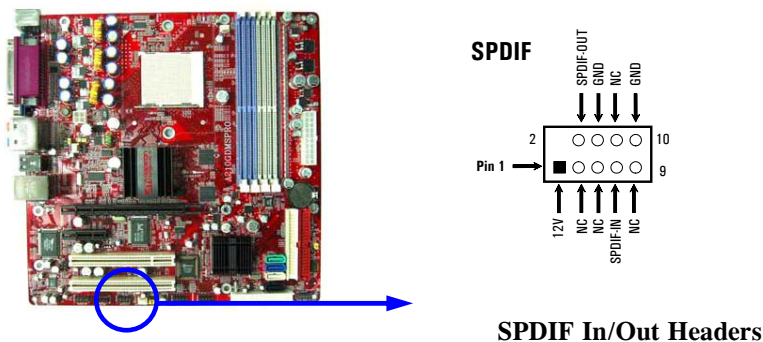
Users only can choose either CRT out-put or TV-out in Operating system, it can not support both CRT out-put and TV-out at the same time.



(12) SPDIF In/Out Headers (9-pin) : SPDIF (Cable Optional)

This headers is for SPDIF (Sony Philip Digital InterFace) Device In/Out connector.

Use this headers users can In put or Out put high quality digital signal from SPDIF devices to Computer or from computer to SPDIF devices.



2-7 Starting up your computer

1. After all connection are ready, close your computer case cover.
2. Be sure all the switches 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 peripherals as following order:
 - a. Your monitor.
 - b. Other external peripherals (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 Settings

The BIOS is a program located on a Flash Memory of the motherboard. Using this program as a bridge between motherboard and operating system. When the computer starting to work, 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 BIOS Setup. If the message disappears before your respond and you still wish to enter BIOS 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>.

3-3 The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen. The Main Menu allows you to select from fourteen setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features	Miscellaneous Control
Advanced BIOS Features	Load optimized Defaults
Advanced Chipset Features	Load Standard Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

Figure 3-1

Standard CMOS Features

Use this Menu for basic system configurations.

Advanced BIOS Features

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

Advanced Chipset Features

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

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows your PC health status.

Miscellaneous Control

Use this menu to specify your settings for Miscellaneous control.

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.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features

Date (mm:dd:yy)	Tue, Jan, 18 2005	Item Help
Time (hh:mm:ss)	16 : 45 : 35	
> IDE Primary Master	None	Menu Level > Change the day, month, year and century
> IDE Primary Slave	None	
> IDE Secondary Master	None	
> IDE Secondary Slave	None	
Drive A	1.44M, 3.25 in.	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	456704K	
Total Memory	457728K	
↑↓← 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

Phoenix - AwardBIOS CMOS Setup Utility

Advanced BIOS Features

Virus Warning	Disabled	Item Help	
L1 Cache	Enabled		
L2 Cache	Enabled	Menu Level >	
Quick Power On Self Test	Enabled		
SATA & SCSI Boot Order	SATA, SCSI		
First Boot Device	Floppy		
Second Boot Device	HDD-0		
Third Boot Device	CDROM		
Boot other Device	Enabled		
Boot Up Floppy Seek	Enabled		
Boot Up NumLock Status	On		
Gate A20 Option	Fast		
Typematic Rate Setting	Disabled		
x Typematic Rate (Chars/Sec)	6		
x Typematic Delay (Msec)	250		
Security Option	Setup		
APIC Mode	Enabled		
MPS Version Control For OS	1.4		
OS Select for DRAM > 64MB	Non-OS2		
Report No FDD For Windows	Yes		
↑↓←→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

Virus Warning

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 L1&L2 Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: The internal cache is built in the processor.

CPU L3 Cache

Choose Enabled or Disabled. This option enables the Level 3 cache memory.

CPU L2 Cache

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

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.

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.

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.

Phoenix - AwardBIOS CMOS Setup Utility

Advanced Chipset Features

> DRAM Timing Settings	Press Enter	Item Help
> PCIE Timing Settings	Press Enter	
> Hypertransport Settings	Press Enter	
Video BIOS Cacheable	Enabled	Menu Level >
System BIOS Cacheable	Enabled	
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

PCIE Timing Settings

Please refer to section 3-6-2

Hypertransport 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 BIOS 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

Phoenix - AwardBIOS CMOS Setup Utility

DRAM Timing Settings

		Item Help
Auto Configuration	Auto	Menu Level >>
x DRAM CAS Latency	CL-2.5	
x RAS Active Time	6T	
x RAS Precharge Time	4T	
x RAS to CAS Delay	Auto	
x Bank Interleave	Enabled	
DRAM Command Rate	2T	
↑↓← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

DRAM 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.

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, 3T and 4T.

RAS to CAS Delay

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: 6T, 7T and 8T.

3-6-2 PCIE Timing Settings

Phoenix - AwardBIOS CMOS Setup Utility

PCIE Timing Settings

PCIE Reset Delay	Disabled	← No for A210PDMS
Internal Video Mode	UMA,Hyper Memory	← Hyper Memory for A210GDMS PRO
UMA Frame Buffer Size	64MB	
AGP Aperture Size	128MB	← No for A210PDMS
CFX Clock Mode	Async	
Async CFX Clock	250MHz	
Video Display Devices	Auto	
TV Standard	NTSC	
* Surroundview	Disabled	
↑↓← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Internal Video Mode

The settings are: UMA, UMA+Hyper Memory (for A210GDMS PRO), Hyper Memory (for A210GDMS PRO).

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

3-6-3 Hypertransport Settings

Phoenix - AwardBIOS CMOS Setup Utility

Hypertransport Settings

Hypertransport Link Frequency	Auto	Item Help
Hypertransport Link Width In	16 bit	Menu Level >>
Hypertransport Link Width Out	16 bit	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

3-7 Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

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

OnChip IDE Function

Please refer to section 3-7-1

OnChip Device Function

Please refer to section 3-7-2

OnChip SuperIO Device

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, Onboard (No for A210PDMS), PCIEx.

3-7-1 OnChip IDE Function

Phoenix - AwardBIOS CMOS Setup Utility

OnChip IDE Function

SATA Function	Enabled	Item Help	
On-Chip Primary IDE	Enabled	Menu Level >>	
Master PIO	Auto		
Slave PIO	Auto		
Master Ultra DMA	Auto		
Slave Ultra DMA	Auto		
On-Chip Secondary IDE	Enabled		
Master PIO	Auto		
Slave PIO	Auto		
Master Ultra DMA	Auto		
Slave Ultra DMA	Auto		
IDE HDD Block Mode	Enabled		
Delay For HDD (Secs)	0		
↑↓←→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help			
F5:Previous Values F6:Optimized Defaults F7:Standard Defaults			

OnChip Primary/Secondary IDE

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

Phoenix - AwardBIOS CMOS Setup Utility

OnChip Device Function

<pre> > South Bridge Feature Press Enter Onboard LAN Device Enabled Onboard LAN Boot ROM Disabled Azalia Audio Controller Auto ***** USB Controller System ***** USB 2.0 Support Enabled USB 1.1 Support Enabled USB Keyboard Support Disabled </pre>	<pre> Item Help ----- Menu Level >> </pre>
<pre> ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults </pre>	

South Bridge Feature

Please refer to section 3-7-2.1

USB 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 Legacy Support

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

3-7-2.1 South Bridge Feature

Phoenix - AwardBIOS CMOS Setup Utility

South Bridge Feature

<pre> > P2P Pre-fetch Queue Depth Depth - 4 P2P Maximum Pre-fetch DW Pre-fetch 4x16DW PCI/14M/USB CLK PowerDown Disabled S.B. PCI-E Performance Enabled ULI HPET Disabled </pre>	<pre> Item Help ----- Menu Level >> </pre>
<pre> ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults </pre>	

3-7-3 OnChip SuperIO Device

Phoenix - AwardBIOS CMOS Setup Utility

OnChip SuperIO Device

Onboard FDC Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	Menu Level >>
UART Mode Select	Normal	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Mode	SPP	
x 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 FDC 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 1/2

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

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.

Phoenix - AwardBIOS CMOS Setup Utility

Power Management Setup

ACPI Function	Enabled	Item Help	
ACPI Support Type	S1 (POS)		
Power Management Option	User Define	Menu Level >	
HDD Power Down	Disabled		
Suspend Modem	Disabled		
Video Off In Suspend	Yes		
Video Off Method	DPMS		
MODEM Use IRQ	3		
Power Button Function	Instant-Off		
AC Loss Auto Restart	Always-Off		
AMD K8 Cool'n'Quiet Control	Auto		
> 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.

State After Power Failure

This item allows the system power ON/OFF automatic when power loss and recovery again, you can choose Auto for recovery pre-state, or always ON/OFF after power recovery.

Wake Up Events

Please refer to section 3-8-1

3-8-1 Wake Up Events

Phoenix - AwardBIOS CMOS Setup Utility

Wake Up Events

Wake-Up on Ring	Disabled	Item Help
Wake-Up on PCI PME	Disabled	
Wake-Up on USB Device	Disabled	Menu Level >>
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.

3-9 PnP/ PCI Configuration Setup

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

Phoenix - AwardBIOS CMOS Setup Utility

PnP/PCI Configurations

Reset Configuration Data	Disabled	Item Help
Resources Controlled By	Manual	
x IRQ Resources	Press Enter	Menu Level >
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	
** PCI Express relative items **		
Maximum Payload Size	4096	
↑↓→← 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

Phoenix - AwardBIOS CMOS Setup Utility

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.

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

		Item Help
Show PC Health in Post	Enabled	
CPU Thermal-Throttling	Disabled	
x CPU Thermal-Throttling Temp	85°C	Menu Level >
x CPU Thermal-Throttling Beep	Enabled	
Vcore	1.52V	
ChipVCC (V)	1.78V	
+5V (V)	4.77V	
+12V (V)	11.79V	
5VSB (V)	5.12V	
VDIMM (V)	2.65V	
VBAT (V)	3.15V	
CPU Temperature	40°C/104°F	
NB Temperature	33°C/91°F	
System Temperature	30°C/86°F	
CPUFAN Speed	0 RPM	
SFAN1 Speed	0 RPM	
SFAN2 Speed	0 RPM	
↑↓←→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Show PC Health in Post

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

CPU Thermal-Throttling

This item allow setting Thermal-Throttling function Enabled or Disabled.

CPU Thermal-Throttling Temp

This item allow to setting Thermal-Throttling function active when over the temperature you choose the Default setting is "85(C)", when the Thermal-Throttling function active, will decrease the CPU performance.

CPU Thermal-Throttling Beep

To choose Enabled after Thermal-Throttling function active, will have a beep from speaker.

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

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

3-11 Miscellaneous Control

This section is for setting CPU Frequency/Voltage Control.

CMOS Setup Utility - Copyright(C) 1984-2004 Award Software
Miscellaneous Control

CPU Ratio	Default	Item Help
Auto Detect PCI Clk	Enabled	
Spread Spectrum	Disabled	Menu Level >
*** Current Host Frequency is 200MHz ***		
CPU Clock at Next Boot is	200MHz	
*** Current DRAM Frequency is 200MHz ***		
DRAM Clock at next Boot	Auto	
CPU Vcore	Default	
Over Voltage	Enabled	
VRAM Output	2.65V(Default)	
ChipVCC Output	1.80V(Default)	
Flash Write Protect	Enabled	
↑↓← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Auto Detect PCI Clk

This item allows you to enable/disable auto detect 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: 200MHz(300MHz).

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 or 200MHz.

VRAM Output

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.

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).

The **ATI RS480 serial chipset driver only support Windows 2000 and Windows XP OS**



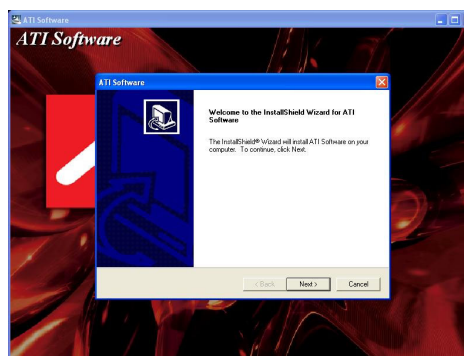
From MAGIC INSTALL MENU you may make 10 selections:

1. ATI install ATi Driver Pack
2. SOUND install Audio Codec Installing driver
3. LAN install Realtek LAN Controller driver
4. USB2.0 install USB 2.0 driver
5. RAID install ULI SATA driver
6. DIRECTX9 install Microsoft DirectX 9 driver
7. PC-CILLIN install PC-CILLIN2004 anti-virus program
8. PC-HEALTH install MyGuard hardware monitor Software
9. BROWSE CD to browse the contents of the CD
10. EXIT to exit from MAGIC INSTALL menu

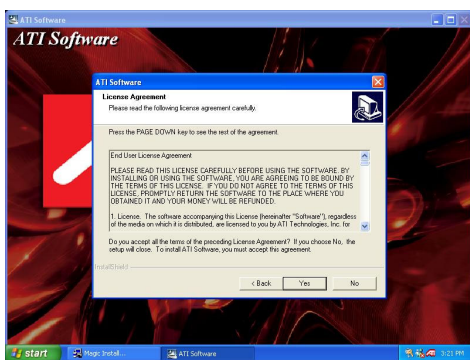
4-1 ATI Install ATI Driver Pack



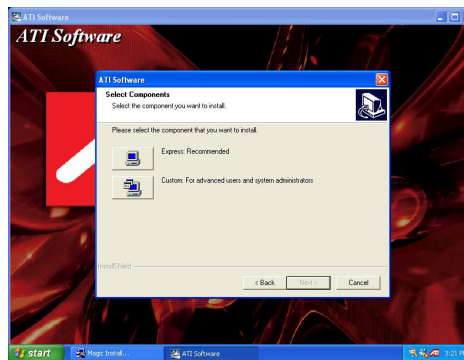
1. Click ATI when MAGIC INSTALL MENU appears



2. Click NEXT when ATI software driver pack wizard appears



3. When the license agreement window appear, click Yes

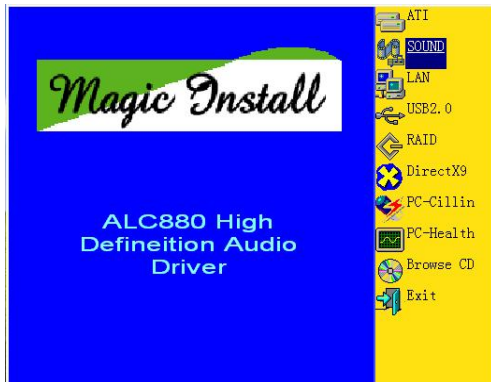


4. Select Express: recommended, install ATI AGP Gart driver/VGA driver/SMBUS driver



5. Click Finish to restart your computer

4-2 SOUND install ALC880 High Definition Audio Driver



1. Click SOUND when MAGIC INSTALL MENU appears



2. Click NEXT When Realtek High Definition Audio driver windows appear



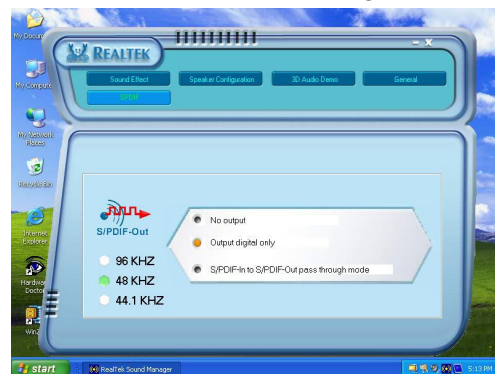
3. Click FINISH and restart your computer



4. Manual Sound Effect Setting

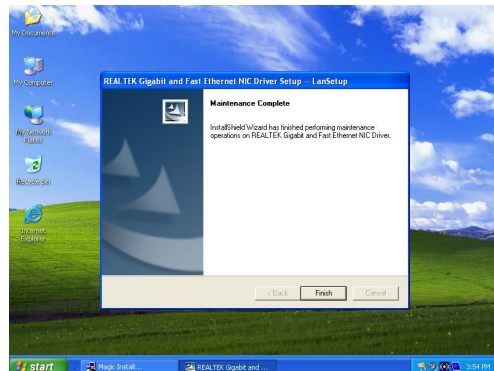
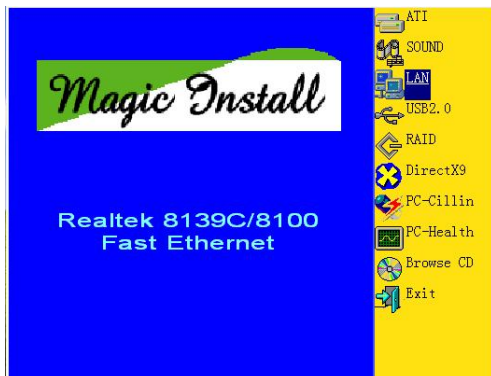


5. Speaker configuration setting



6. SPDIF out setting

4-3 LAN install Realtek RTL8100 Ethernet NIC Driver



1. Click LAN when Magic Install Menu appear
2. Click finish, and select restart computer

4-4 USB2.0 Install ULI USB2.0 Driver

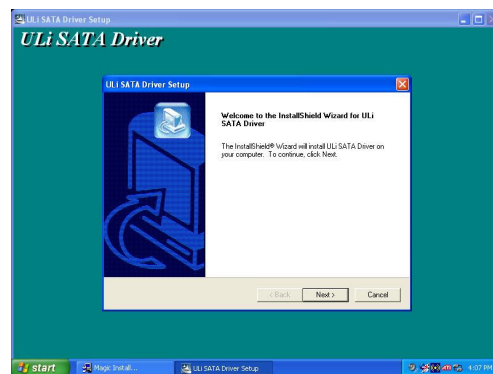
Windows 2000 OS

Please install Windows 2000 service pack 4 or later .

Windows XP OS

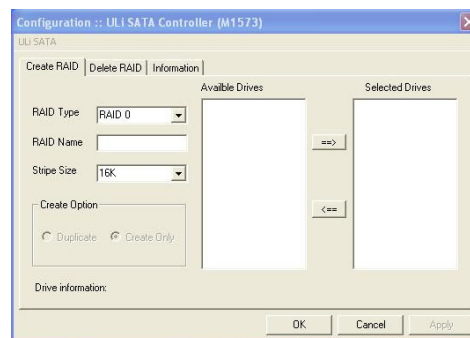
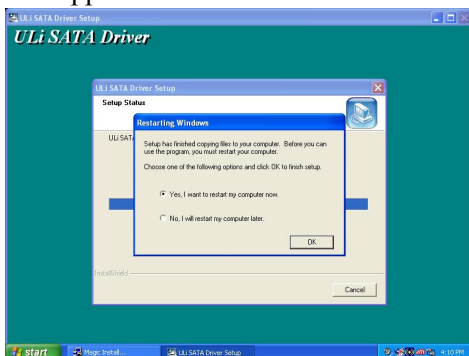
Please install Windows XP service pack 1 or later .

4-5 RAID Install ULI SATA Driver and Utility



1. Click RAID in MAGIC INSTALL MENU appear

2. When "ULI SATA Driver setup" windows appear, please click NEXT



3. Click OK and restart your computer

4. This is ULI SATA RAID utility

Making SATA HDD driver diskette before Install WindowsXP/2000

If you only have Serial ATA HDDs on your system, before you install the Windows XP or Windows 2000, you will need to make a SATA HDD driver diskette before you start to install the Operating System.

How to make a SATA HDD driver diskette?

STEP 1: Insert the diskette which been formatted in floppy drive on a system which can start OS.

STEP 2: After booting OS insert the bundle CD in your CD-ROM

STEP 3: Copy all the files from X:\ATIRS480\ULISATA\FLOPPY*. * to floppy diskette

Once you have the SATA driver diskette ready, you may start to install Windows XP or Windows 2000 on your System.

Installation of Windows XP/ Windows 2000

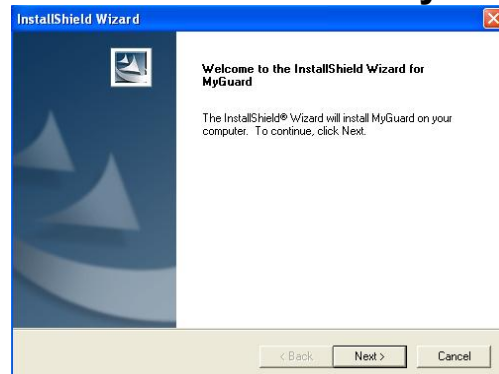
For installation of Windows XP or Windows 2000, please insert Windows XP or Windows 2000 CD into the CD-ROM drive. Then remove the floppy diskette, and boot the system. At the very beginning, you will see the message at the bottom of screen, “Press F6 if you need to install a third party SCSI or RAID driver....”

At this moment, please press <F6> key and follow the instructions of Windows XP or Windows 2000 for the proper installation.

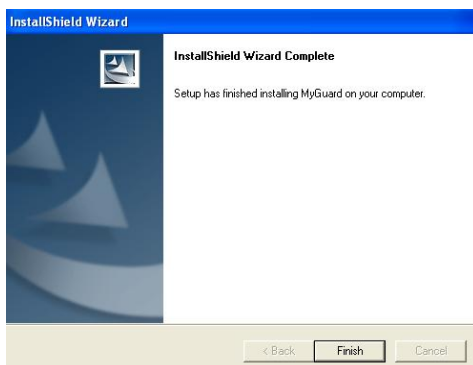
4-6 PC-HEALTH install Intel Hardware Doctor Utility



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

NOTE:

MAGIC INSTALL will auto detect file path X:\ATIRS480\MYGUARD\SETUP.EXE

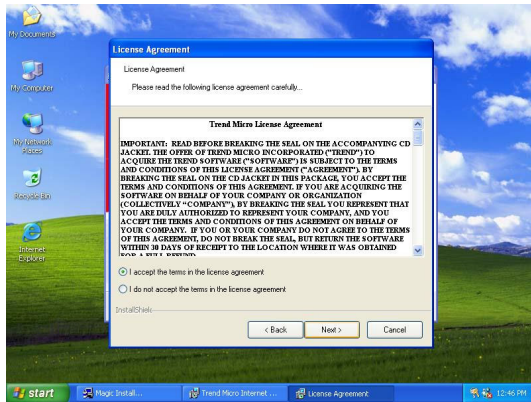
4-7 PC-CILLIN Install PC-CILLIN 2004 Anti-virus program



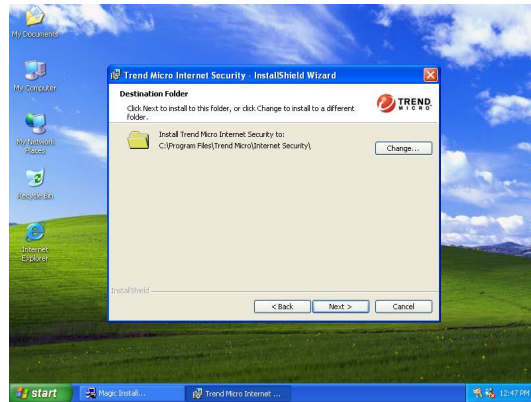
1. Click PC-CILLIN when MAGIC INSTALL MENU appear



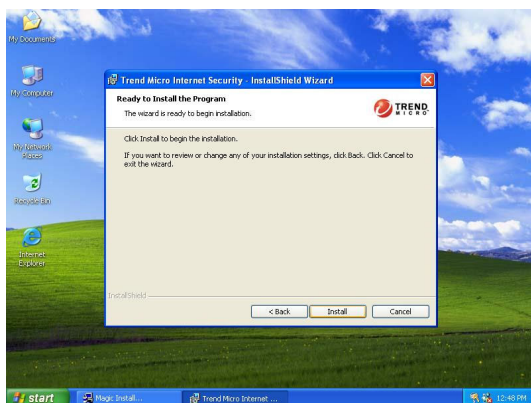
2. Click NEXT when the "Trend Micro internet security" installshield wizard windows appear



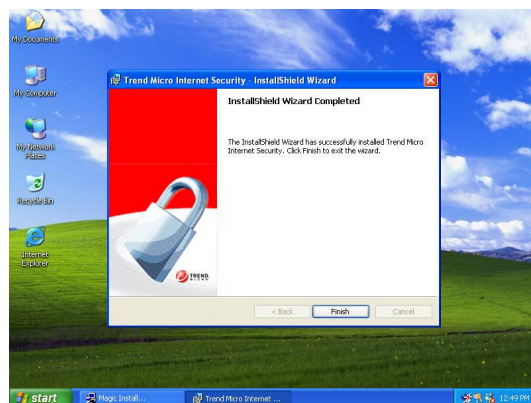
3. This is license agreement, select "I Accept the terms" and Click NEXT



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

Before update BIOS users have to “Disable”, “Flash Part Write Protect” item which in “Miscellaneous Control” of BIOS SETUP. Otherwise the system the will not allow you to upgrade BIOS by Award Flash Utility.

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 A210GDMS/A210PDMS from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,

start the computer, type “Awdflash A:\A210GDMSAxxx.BIN /SN/PY/CC/R”

A210GDMSAxxx.BIN is the file name of latest BIOS it can be A210GDMSA03.BIN or A210GDMSB02.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.

4-8 Pro Magic Plus Function Introduction

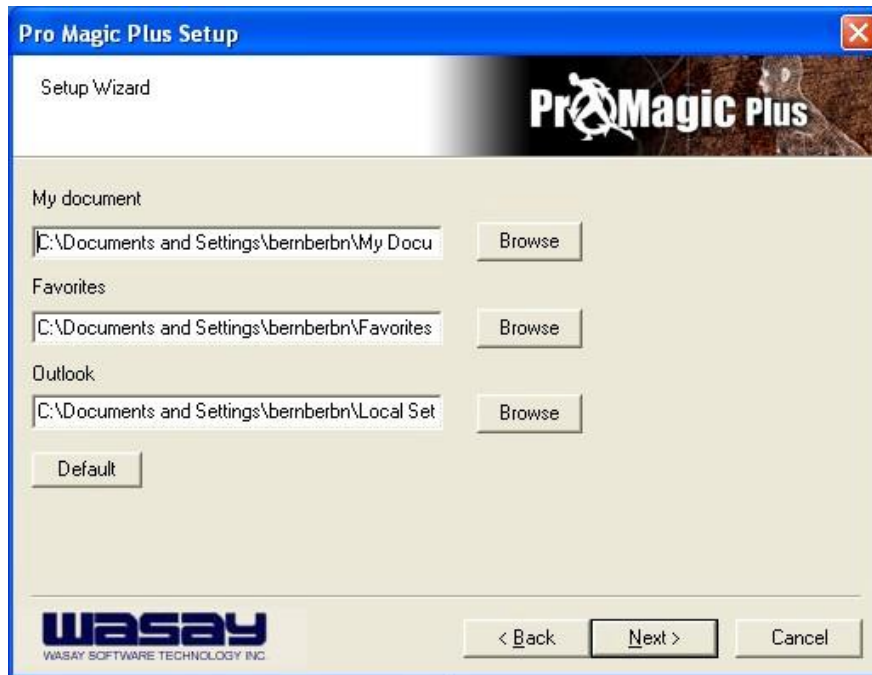
What's Pro Magic Plus?

Tired with reinstall OS each time when it doesn't work? Does your computer often crash down or unable to work after installed new software? Have you had great loses and troubles because of computer problems? Still using time-consuming backup software that occupies lots of HD space?


Pro Magic Plus- an instant system recovery software tailored to solve these problems for you. It combines various application tools (e.g. anti-virus, backup software, uninstall software, multi-boot software) to satisfy your needs of all sorts of system protections.

What functions does Pro Magic Plus have?

1. **Instant System Restoration** – Regardless of mis-operation or system crash, install Pro Magic Plus beforehand would allow you to instantly restore your system back by simply reboot your computer.
2. **Easy-to-use** – Auto installation from CD ROM; Supports Mouse
3. **System Uninstall** – Pro Magic provides a protection mode, which allows user to freely test any software. If user does not want to keep the software, just reboot the computer to restore back to the previous state, and Pro Magic will remove it completely from you computer.
4. **Password Security** – Pro Magic provides double password protection, including user password for entering each OS and manager password for managing 'Pro Magic', which can effectively prevent others from using your computer without permission or data from being stolen. (disable item for OEM version)
5. **Complete Protection** – Pro Magic not only protects the system disk, but also can protect your data disk, and does not require to reboot when backup or restore data disk.
6. **Multipoint Save/Restore** – You can backup your system whenever you need and restore them back to anytime you wish, 1 hour, 1 day or 1 month ago. Restore points are unlimited. (disable item for OEM version)
7. **Data Disk Protection** – Pro Magic Plus now comes with data disk protection, provides complete protection for your computer! (disable item for OEM version)
8. **You can choose to change the default path of 'My Document', 'My Favorite' and 'Outlook Express'**, so that when you are restoring the system, data in these folders will not be restored as well. (This is optional, you can leave it as it is).



graph 4

 **NOTE:** Functions of each version will differ from each other, and will be based on the function descriptions of each version.

System Requirements

- ◇ First OS must be Windows 98 SE/ME/2000/XP
- ◇ Support Only Windows OS (No Linux)
- ◇ Windows server OS and Windows NT not supported
- ◇ Minimum of Intel 486 or above, 16MB of memory or above
- ◇ Minimum of 500MB free/usable space or above
- ◇ Support for SCSI & SATA Hard disk

Pro Magic Plus only supports SCSI hard disk with Windows 2000 or OS above

Notice Before Installation

1. Before install Pro Magic Plus, turn off all anti-virus software. (Include BIOS anti-virus function)
2. Pro Magic Plus does not support multiple PRI partitions. If you have multiple PRI partitions, please repartition your HD before installation.
3. If your HDD is not fully partitioned (with un-partitioned/unused space at end of HDD), please repartition the HDD before install Pro Magic Plus.

Chapter 5

SURROUNDVIEW™ Installation and Setup User's Guide

5-1 Getting Started

SURROUNDVIEW™ provides the power and convenience of multi-adapter, multi-monitor support for computers that use internal ATI integrated graphics processors (IGP). Using SURROUNDVIEW, ATI's RADEON™ EXPRESS 200 in combination with an external ATI PCI-E graphics card, can support up to three, independent monitors.

Multi-monitor capability increases productivity — read email on one screen, work on a spreadsheet on another, and create a document on another. SURROUNDVIEW is also ideal for the office environment: a brokerage can monitor trades, place orders, and sell — each on a different display. When the home office computer is not being used for work, it can be used to play the latest games, several of which can take advantage of SURROUNDVIEW's multi-monitor feature. With Microsoft® Flight Simulator, cyber pilots can move different views to separate monitors.

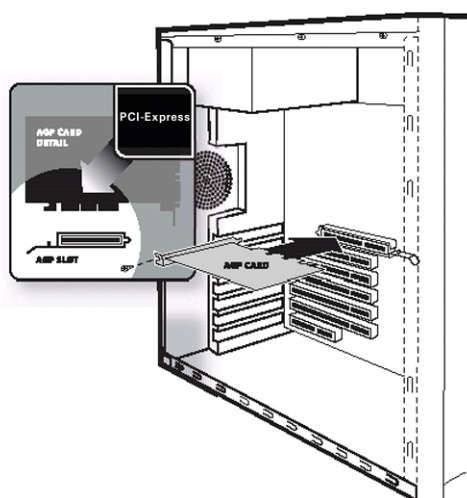
Getting SURROUNDVIEW up and running requires only two steps:

- Install an external ATI AGP graphics card — [page 47](#).
- Enable SURROUNDVIEW in the BIOS — [page 48](#).

5-2 System Requirements

Supported ATI Products	<ul style="list-style-type: none">• X300 PCI-E Serial• X600 PCI-E Serial• X800 PCI-E Serial
Expansion Slot	PCI-Express Slot
Operating System	Windows® 2000 / XP
CPU	AMD K8 3200+
System Memory	256MB minimum; 512MB recommended.
AGP Aperture	128MB minimum; 256MB recommended.

5-3 Installing the External ATI Graphics Card



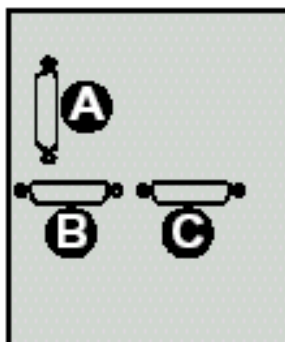
PCI-Express Slot on Motherboard

- 1 Power-off the computer and monitor, and then disconnect the monitor cable from the back of your computer.
- 2 Remove the computer cover. If necessary, consult your computer's manual for help in removing the cover.



Discharge your body's static electricity by touching the metal surface of the computer chassis.

- 3 After locating the PCI Express, and if necessary, removing the metal cover, align your ATI graphics card with the slot, and then press it in firmly until the card is fully seated.
- 4 Replace the screw to fasten the card in place, and then replace the computer cover.
- 5 Connect one display to the motherboard's internal graphics connector A, and then connect the other two displays to the external graphics card monitor connectors B and C.



Monitor Connectors on back of computer


If your monitors use DVI-I connectors, you will need DVI-I-to-VGA adapters to connect them. Adapters are available from the online ATI store at



You are now ready to enable SURROUNDVIEW™. See [page 48](#).

5-4 Enabling SURROUNDVIEW

Enable SURROUNDVIEW using the system BIOS settings.



- The motherboard manufacturer must provide an option in CMOS to enable / disable internal graphics when external graphics cards are used.
- Implementation may vary, depending upon the motherboard manufacturer.

To enable SURROUNDVIEW

- 1 Restart your system, and then enter CMOS setup (see the illustration on the following page). *When restarting, most computers prompt you to press certain keys (usually F10, DEL, F2, or F8) to enter Setup. If this does not occur, refer to the manufacturer's documentation. The CMOS Setup screen appears.*
- 2 Use the arrow keys () to navigate to **Advanced Chipset Features**, and then press Enter. *The Advanced Chipset Features screen appears.*
- 3 Use the arrow keys to navigate to **AGP Aperture Size**, and then use the + or – key to set it to **128**. (This is the recommended setting for best general performance; SURROUNDVIEW does not require it.) **Your system must have at least 256MB of RAM to use an AGP Aperture size of 128** (see [System Requirements on page 46](#)).
- 4 Use the arrow keys to navigate to **UMA Frame Buffer Size**, and then set it to **64MB**. Press Esc to return to the CMOS Setup screen.
- 5 Use the arrow keys to navigate to **Integrated Peripherals**, and then press Enter. *The Integrated Peripherals screen appears.*
- 6 Use the arrow keys to navigate to **Init Display First**, and then set it to **AGP**.
 - The motherboard manufacturer must provide an option in CMOS to enable / disable internal graphics when external graphics cards are used.
 - Implementation may vary, depending upon the motherboard manufacturer.

7 Use the arrow keys to navigate to **SURROUNDVIEW**, press Enter, use the arrow keys to select **Enable**, and then press Enter.

8 When the **Save to CMOS and Exit** prompt appears, press Y.

Advanced Chipset Features	
Feature	Value
AGP Aperture Size	128
UMA Frame Buffer Size	64MB
Feature	Value
Feature	Value
Feature	Value
ESC = Quit	
F10 = Save & Exit Setup	

BIOS Settings — Advanced Chipset Features Screen

Integrated Peripherals		
Feature	[Status]	Item Help
Feature	[Status]	
Feature	[Status]	
Init Display First	[AGP]	
SURROUNDVIEW	[Enabled]	
Feature	[Status]	
Feature	[Status]	
Feature	[Status]	
Feature	[Status]	
Feature	[Status]	

BIOS Settings — Integrated Peripherals Screen

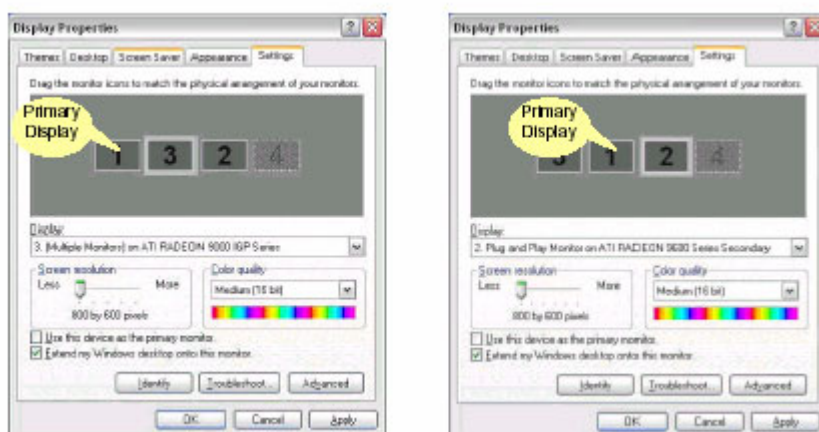
These screens may look different, depending upon the motherboard manufacturer.

5-5 Using SURROUNDVIEW™

5-5-1 Setting up Your Displays

To set up your displays

- 1 Right-click a clear area of your desktop, click **Properties**, and then click the **Settings** tab.
- 2 Click the **Identify** button to display a large number on each monitor, showing which monitor corresponds with each icon.
- 3 Right-click the icon for the display that you want to be primary, click **Use this device as the primary monitor**, and then click **Apply**. *The primary monitor displays the log-on screen when you start your computer. When you first open most programs, they display windows on the primary monitor.*
- 4 Click and drag the monitor icons to positions that represent how you want to move items from one monitor to another, and then click **OK**.
- 5 Drag an item on your desktop across your screen until it appears on an alternate monitor. You can also resize a window to stretch it across more than one monitor.



The placement of the monitor icons determines how you move items from one monitor to another.

- To move items by dragging left and right, place the icons side by side.
 - To move items by dragging up and down, place the icons one above the other.
- For ease of use, position the monitor icons to correspond to the physical positions of your monitors.

To enable displays

Right-click a monitor icon, click **Attached**, and then click **Apply**. Repeat for each display that you wish to attach.

The selected monitors are attached and available for use.

Each display can use a different resolution,

- For games, it is recommended that you use the same screen resolution on all

5-5-2 With Applications and Games

Microsoft® Flight Simulator

Using SURROUNDVIEW, you can display a different Flight Simulator view on each of your monitors.

- For best results, in the Flight Simulator Settings Display dialog, set the full screen resolution for each video adapter to match the desktop resolution for the corresponding display.
- Because the simulation creates additional information that is sent to the video hardware and monitors, running multiple displays always affects performance compared to single-display configuration.

1 Start with Flight Simulator running in windowed mode, so that you can move windows off the primary display. *To switch between full-screen and windowed mode, press **Alt + Enter** or, in the **Views** menu, click **Full Screen**.* Your displays will look like this:



2 Click the FLY NOW! button to start Flight Simulator.



3 Click the button to continue.



4 From the **Views** menu, create a new window, and then drag it to monitor 2.



- When moving a 3D window, you may see some hesitation when crossing the boundary to a secondary display. After you move the 3D window to the secondary display, that scene will be displayed in 3D. You can return to full-screen mode on each display after you move the windows.
- Multiple full-screen setups are not saved in the Flight Simulator or Flight Configuration (.cfg) files. You can save a Flight while each display is in windowed mode, and then switch to full-screen mode after you launch Flight Simulator.

5 From the **Views** menu, create another new window, and then drag it to monitor 3.



Business applications

You can run multiple business applications simultaneously — for example, a spreadsheet, a web browser, and a stock tracker.

1 Right-click a clear area of your desktop, click **Properties**, click the **Settings** tab, and then click the **Identify** button to display a large number on each monitor, showing which monitor corresponds with each icon.



-
- 2 Open your spreadsheet.
Your spreadsheet opens in the primary monitor.



- 3 Open your web browser, and then drag it to monitor 2.



- 4 Open your stock tracker, and then drag it to monitor



Frequently Asked Questions

Q1: Does the Windows “Standby” function work when SURROUNDVIEW is enabled?

Answer: Yes, Standby should work properly with SURROUNDVIEW.

Q2: Do all ATI cards support SURROUNDVIEW? Can SURROUNDVIEW run on other vendors’ graphics cards?

Answer: No, only ATI AGP graphics cards, including ALL-IN-WONDER AGP cards, support SURROUNDVIEW.

Q3: If the Integrated Graphics Processor (IGP) is AGP, and I install an external PCI card, is SURROUNDVIEW available?

Answer: No, this function is called dual adapter, similar to using two, discrete graphics cards (AGP + PCI).