

Mainboard User's Manual

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M817 Series, V1.5
AM1645/February 2002**

Mainboard User's Manual

Notice:

Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pop out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Just click the "Continue Anyway" button and go ahead the installation.



Notice for DDR SDRAM:

The table below lists the model chips of DDR that we have tested. We will test more DDR modules in the future. Users may get this information from our World Wide Web at www.pcchips.com.tw.

Model Chip	Manufacture
K4H2808388-TCBO	SAMSUNG
HY5DU28822T-H	HYUNDAI

Mainboard User's Manual

Table of Contents

Trademarks.....	I
Chapter 1: Introduction.....	1
Key Features.....	2
Package Contents.....	5
Static Electricity Precautions.....	6
Pre-Installation Inspection.....	6
Chapter 2: Mainboard Installation.....	7
Mainboard Components.....	8
I/O Ports.....	8
Install A CPU.....	9
Install Memory.....	11
Setting Jumper Switches.....	12
Install the Mainboard.....	14
Install the Extension Brackets.....	15
Optional Extension Brackets.....	17
Install Other Devices.....	18
Expansion Slots.....	21
Chapter 3: BIOS Setup Utility.....	23
Introduction.....	23
Running the Setup Utility.....	24
Standard CMOS Setup Page.....	25
Advanced Setup Page.....	26
Power Management Setup Page.....	28
PCI / Plug and Play Setup Page.....	29
Load Optimal Settings.....	30
Load Best Performance Settings.....	30
Features Setup Page.....	30
CPU PnP Setup Page.....	32
Hardware Monitor Page.....	33
Change Password.....	33
Exit.....	34
Chapter 4: Software & Applications.....	35
Introduction.....	35
Installing Support Software.....	36
Bundled Software Installation.....	38

Mainboard User's Manual

Chapter 1

Introduction

This mainboard has a **Socket-462** processor socket for an **AMD K7** type CPUs. You can install any one of these processors on the mainboard.

The mainboard supports Socket-462 processor front-side bus speeds of **200MHz** or **266MHz**.

This mainboard uses the **ALI M1645** chipset that supports a **4X AGP** slot for highly graphics display, **DDR** interface and **Ultra DMA ATA133** function, provides outstanding high system performance under all types of system operations. The mainboard has a built-in **AC97 Codec**, provides an **AMR** (Audio Modem Riser) slot to support Audio and Modem application, and has a built-in **10BaseT/100BaseTX Network Interface**. In addition, the mainboard has an extended set of **ATX I/O Ports** including PS/2 keyboard and mouse ports, two USB ports, a parallel port, and two serial ports. Two extra USB ports can be added using the Extended USB Module that connects to the mainboard.

This mainboard has all the features you need to develop a powerful multimedia workstation that is network ready. The board is **ATX size** and has power connectors for an **ATX** power supply.

Mainboard User's Manual

Key Features

The key features of this mainboard include:

Socket-462 Processor Support

- ◆ Supports AMD **Athlon XP/Athlon/Duron** processors
- ◆ Supports 200/266 MHz Front-Side Bus

Memory Support

- ◆ Two 168-pin DIMM slots for SDRAM memory modules
- ◆ Two 184-pin DIMM slots for DDR memory modules
- ◆ Support for 100/133 MHz memory bus
- ◆ Maximum installed memory is 1GB

Notice: You can NOT use SDRAM and DDR simultaneously.

Expansion Slots

- ◆ One AMR slot for a special audio/modem riser card
- ◆ One AGP4X slot for AGP 2.0-compliant interface
- ◆ Four 32-bit PCI slots for PCI 2.2-compliant bus interface

Onboard IDE channels

- ◆ Primary and Secondary PCI IDE channels
- ◆ Support for PIO (programmable input/output) modes
- ◆ Support for Multiword DMA modes
- ◆ Support for Bus Mastering and Ultra DMA **ATA133** modes

Power Supply and Power Management

- ◆ ATX power supply connector
- ◆ ACPI and previous PMU support, suspend switch, keyboard power on/off
- ◆ Supports Wake on Modem, Wake on LAN and Wake on Alarm

1: Introduction

AC97 Codec

- ◆ Compliant AC97 2.1 specification
- ◆ Supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) as well as 18-bit stereo full-duplex codec

Onboard I/O Ports

- ◆ Provides PC99 Color Connectors for easy peripheral device connections
- ◆ Floppy disk drive connector with 1Mb/s transfer rate
- ◆ Two serial ports with 16550-compatible fast UART
- ◆ One parallel port with ECP and EPP support
- ◆ Two USB ports and optional two USB ports module
- ◆ Two PS/2 ports for keyboard and mouse
- ◆ One infrared port connector for optional module

Hardware Monitoring

- ◆ Built-in hardware monitoring for CPU & System temperatures, fan speeds and mainboard voltages

Built-in Ethernet LAN

- ◆ Built-in **10BaseT/100BaseTX Ethernet LAN**
- ◆ LAN controller integrates Fast Ethernet MAC and PHY compliant with IEEE802.3u 100BASE-TX, 10BASE-T and ANSI X3.263 TP-PMD standards
- ◆ Compliant with ACPI 1.0 and the Network Device Class Power Management 1.0
- ◆ High Performance provided by 100Mbps clock generator and data recovery circuit for 100Mbps receiver

Onboard Flash ROM

- ◆ Supports Plug and Play configuration of peripheral devices and expansion cards

Mainboard User's Manual

Bundled Software

- ◆ **PC-Cillin2000** provides automatic virus protection under Windows 95/98/NT/2000
- ◆ **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
- ◆ **3Deep** delivers the precise imagery and displays accurate color in your monitor
- ◆ **Recovery Genius 21st V5.0** provides the function to recover, reserve and transfer hard disk data.
- ◆ **CD Ghost** is the software stimulating a real CD-ROM to perform equivalent function.
- ◆ **Language Genius 21st** is the software to provides learning tools of language and singing.
- ◆ **PC DJ** is a dual-MP3 player that enables users to actually mix music right on their own personal computers.
- ◆ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions

- ◆ ATX form factor (30.5cm x 22cm)

1: Introduction

Package Contents

Attention: This mainboard series includes four different models. They are M817LMR (LAN/Modem Ready), M817LR (LAN Ready), M817MR (Modem Ready) and M817 (without Modem). Please contact your local supplier for your purchase model. Each model will support different specification, list as below:

Model	Specification
M817LMR	Onboard LAN chip (U21), LAN header, LAN extension bracket and an AMR Fax/Modem card
M817LR	Onboard LAN chip (U21), LAN header and LAN extension bracket
M817MR	Provides an AMR Fax/Modem card
M817	---

Your mainboard package ships with the following items:

- The mainboard
- This User's Guide
- 1 UDMA/66 IDE cable
- 1 Floppy disk drive cable
- Support software on CD-ROM disk

Optional Accessories

You can purchase the following optional accessories for this mainboard.

- Extended USB module

Mainboard User's Manual

Static Electricity Precautions

Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.

1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.
3. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation put the mainboard on top of the static-protection packaging it came in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard for damage to the components and connectors on the board.
2. If you suspect that the mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor and report the damage.

Chapter 2

Mainboard Installation

To install this mainboard in a system, follow the procedures in this chapter:

Identify the mainboard components

Install a CPU

Install one or more system memory modules

Verify that any jumpers or switches are set correctly

Install the mainboard in a system chassis (case)

Connect any extension brackets or cables to the mainboard connector headers

Install any other devices and make the appropriate connections to the mainboard connector headers.

Note:

1. Before installing this mainboard, make sure jumper JP5 set to Normal setting. See this chapter for information on locating JP5 and the setting options.
2. Never connect power to the system during installation. Doing so may damage the mainboard.

2: Mainboard Installation

Install A CPU

This mainboard has a Socket-462 CPU socket for AMD K7 processors.

To ensure reliability, ensure that your processor has a heatsink/cooling fan assembly.

Do not try to install a Socket-370/Socket-7 processor in the Socket-462. A Socket-370/Socket-7 processor such as the PPGA Celeron, FCPGA Pentium-III, Pentium-MMX, or the AMD K5/K6 does not fit in the Socket-462.

The following list notes the processors that are currently supported by this mainboard.

Athlon XP: 1500+ ~ 2000+; FSB: 266 MHz

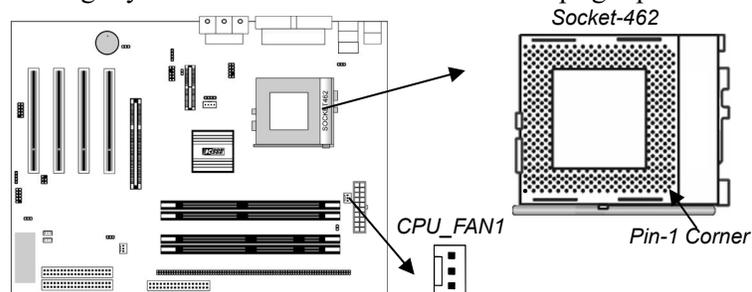
Athlon: 650 MHz~1.4 GHz, FSB: 200 MHz, 266 MHz

Duron: 550~950 MHz, FSB: 200 MHz

Installing a Socket-462 Processor

A processor installs into the ZIF (Zero Insertion Force) Socket-462 on the mainboard.

1. Locate the Socket-462 and CPU_FAN1. Pull the locking lever out slightly from the socket and raise it to the upright position.



2. On the processor, identify the Pin-1 corner by its beveled edge.
3. On the Socket-462, identify the Pin-1 corner. The Pin-1 corner is at the top of the locking lever when it is locked.

Mainboard User's Manual

4. Match the Pin-1 corners and insert the processor into the socket. No force is required and the processor should drop into place freely.
5. Swing the locking lever down and hook it under the catch on the side of the socket. This secures the CPU in the socket.
6. All processors should be installed with a combination heatsink/cooling fan (the original fan is recommended, the others' fan is not), connect the cable from the fan to the CPU fan power connector CPU_FAN1.

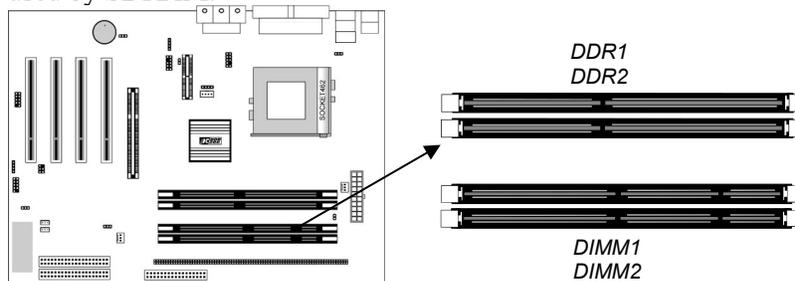
See the Setting Jumper Switches section for detail information on CPU System Bus settings.

2: Mainboard Installation

Install Memory

The mainboard has two 168-pin/184-pin DIMM sockets for SDRAM/DDR SDRAM (Double Data Rate SDRAM) system memory modules. You must install at least one memory module in order to use the mainboard, and **you can only use one of the both SDRAM and DDR SDRAM at the same time.**

DDR SDRAM provides 800 MBps or 1 GBps data transfer depending on whether the bus is 100 MHz or 133 MHz. It doubles the rate to 1.6 GBps and 2.1 GBps by transferring data on both the rising and falling edges of the clock. DDR SDRAM uses additional power and ground lines and requires 184-pin 2.5V unbuffered DIMM module rather than the 168-pin 3.3V unbuffered DIMMs used by SDRAM.



For this mainboard, the maximum memory size is 1GB.

The edge connectors on the memory modules have cut outs, which coincide with spacers in the DIMM sockets so that memory module can only be installed in the correct orientation.

To install a module, push the retaining latches at either end of the socket outwards. Position the memory module correctly and insert it into the DIMM socket. Press the module down into the socket so that the retaining latches rotate up and secure the module in place by fitting into notches on the edge of the module.

The table below lists the model chips of DDR that we have tested.

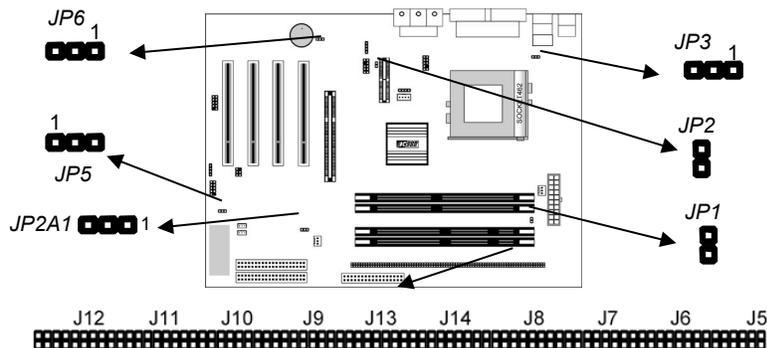
Model Chip	Manufacture
K4H2808388-TCBO	SAMSUNG
HY5DU28822T-H	HYUNDAI

See the next section for detail information on SDRAM Type and RAM Voltage settings.

Mainboard User's Manual

Setting Jumper Switches

Jumpers are sets of pins which can be connected together with jumper caps. The jumper caps change the way the mainboard operates by changing the electronic circuits on the mainboard. If a jumper cap connects two pins, we say the pins are SHORT. If a jumper cap is removed from two pins, the pins are OPEN.



Jumper J5~J14: SDRAM Type Selector

The ten jumpers all consist of eight sets of 2-pin jumpers. Use these jumpers to select the SDRAM type for the system memory.

Function	Jumper Setting
DDR DIMM socket	Short all Pins 1-2
SDRAM DIMM socket	Open all Pins 1-2

Jumper JP1: RAM Voltage Selector

Use this 2-pin jumper to select the voltage for the installed SDRAM module.

Function	Jumper Setting
3.3V for SDRAM	Short Pins 1-2
2.5V for DDR	Open Pins 1-2

Jumper JP2: Codec Selector

Use this jumper to select the onboard audio codec or Audio Modem Riser (AMR) slot.

Function	Jumper Setting
Primary codec onboard	Short Pins 1-2
Primary codec on AMR slot	Open Pins 1-2

2: Mainboard Installation

Jumper JP2A1: CPU System Bus Selector

Use this 3-pin jumper to select if the processor runs on 133 MHz or 100 MHz system bus.

Function	JP2A1
133 MHz system bus	Short Pins 1-2
100 MHz system bus	Short Pins 2-3

Jumper JP3: Keyboard Power On Selector

If you enable the keyboard power on feature, you can use hot keys on your keyboard as a power on/off switch for the system.

Note: The system must provide 1A on the +5VSB (+5V Standby) signal before using the Keyboard Power On function.

Function	Jumper Setting
Disable Keyboard Power On	Short Pins 1-2
Enable Keyboard Power On	Short Pins 2-3

Jumper JP5: Clear CMOS Memory

Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal Operation	Short Pins 1-2
Clear CMOS Memory	Short Pins 2-3

Jumper JP6: Onboard LAN Selector

Use this 3-pin jumper to enable or disable the onboard network adapter.

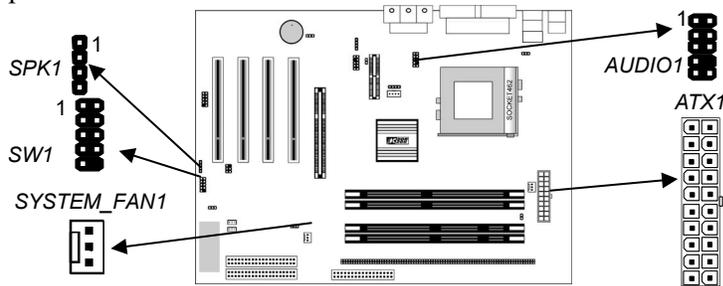
Function	Jumper Setting
Enable Onboard LAN	Short Pins 1-2
Disable Onboard LAN	Short Pins 2-3

Mainboard User's Manual

Install the Mainboard

Install the mainboard in a system chassis (case). The board is an ATX size mainboard with a twin-tier of I/O ports. You can install this mainboard in an ATX case. Ensure that your case has an I/O cover plate that matches the ports on this mainboard.

Install the mainboard in a case. Follow the instructions provided by the case manufacturer using the hardware and internal mounting points on the chassis.



Connect the power connector from the power supply to the **ATX1** connector on the mainboard.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSTEMFAN1** fan power connector on the mainboard.

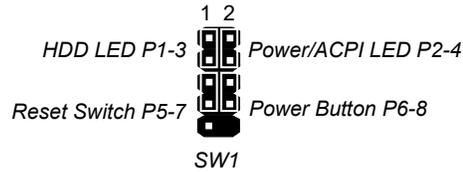
Connect the cable from the PC speaker to the **SPK1** header on the mainboard.

Pin	Signal	Pin	Signal
1	SPKR	2	NC
3	GND	4	+5V

Connect the case switches and indicator LEDs to the **SW1** header.

Pin	Signal	Pin	Signal
1	HD_LED_P	2	PWR/ACPI_LED
3	HD_LED_N	4	PWR/ACPI_LED
5	GND	6	POWER_BUTTON
7	RESET	8	GND
9	KEY	10	KEY

2: Mainboard Installation



If there are a headphone jack or/and a microphone jack on the front panel, connect the cables to the **AUDIO1** header on the mainboard. See the illustrations below for the guide to the SW1 and AUDIO1 headers pin assignments.

Pin	Signal	Pin	Signal
1	MIC	2	GND
3	MIC-P	4	VCC
5	FPOUT-R	6	GND
7	NC	8	KEY
9	FPOUT-L	10	GND



Install the Extension Brackets

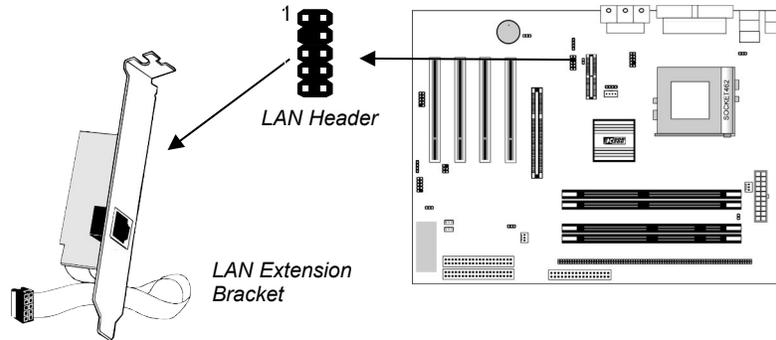
The extension brackets are used to connect features on the mainboard to external connectors that can be attached to the system chassis. Follow the steps below to install the extension brackets.

Note: All the ribbon cables used on the extension brackets have a red stripe on the Pin-1 side of the cable.

Mainboard User's Manual

LAN Adapter Extension Bracket

This bracket supports an RJ45 network connector and connects to the built in LAN header on the mainboard.



1. On the mainboard, locate the LAN header for this bracket.
2. Plug the cable from the bracket into the LAN header.
3. In the system chassis, remove a blanking plate from one of the expansion slots and install the extension bracket in the slot. Use the screw that held the blanking plate in place to secure the extension bracket.

2: Mainboard Installation

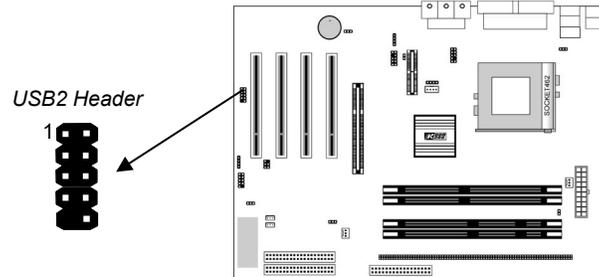
Optional Extension Brackets

For this mainboard, you can also obtain a USB module extension bracket. Install them by following the steps below.

Note: All the ribbon cables used on the extension brackets have a red stripe on the Pin-1 side of the cable.

Extended USB Module

This module bracket has two USB ports for more USB devices (USB port 3-4).



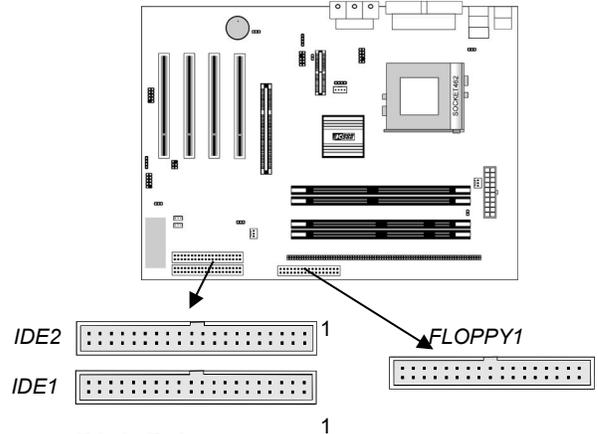
Pin	Signal	Pin	Signal
1	VERG FP USBPWR0	2	VERG FP USBPWR0
3	USB FP P0-	4	USB FP P1-
5	USB FP P0+	6	USB FP P1+
7	GROUND	8	GROUND
9	KEY	10	KEY

1. Locate the USB2 header on the mainboard.
2. Plug the bracket cable onto the USB2 header.
3. In the system chassis, remove a slot cover from one of the expansion slots and install the extension bracket in the opening. Use the screw that held the slot cover in place to secure the extension bracket to the chassis.

Mainboard User's Manual

Install Other Devices

Install and connect any other devices in the system following the steps below.



Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB. Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FLOPPY1**.

IDE Devices

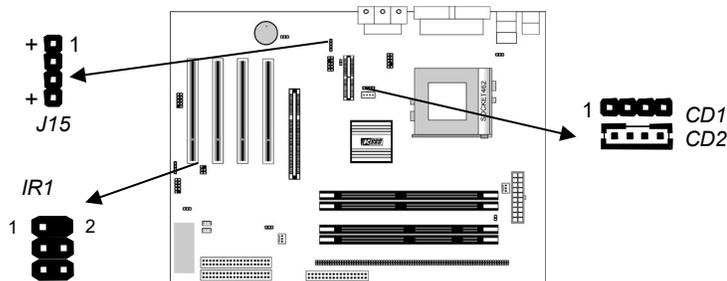
IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others. The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable. Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.

2: Mainboard Installation

If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.



On the mainboard, locate the two 4-pin connectors **CD1** and **CD2**. There are two kinds of connector because different brands of CD-ROM drive have different kinds of audio cable connectors. Connect the cable to the appropriate connector.

CD1

Pin	Signal
1	CD IN L
2	GND
3	GND
4	CD IN R

CD2

Pin	Signal
1	GND
2	CD IN R
3	GND
4	CD IN L

Mainboard User's Manual

Infrared Port

You can connect an infrared port to the mainboard. You can purchase this option from third-party vendors.

Pin	Signal	Pin	Signal
1	FIR	2	KEY
3	+5V	4	GND
5	IRTX	6	IRRX

1. Locate the infrared port **IR1** header on the mainboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the IR1 header and then secure the port to an appropriate place in your system chassis.

Onboard LAN LED Connections

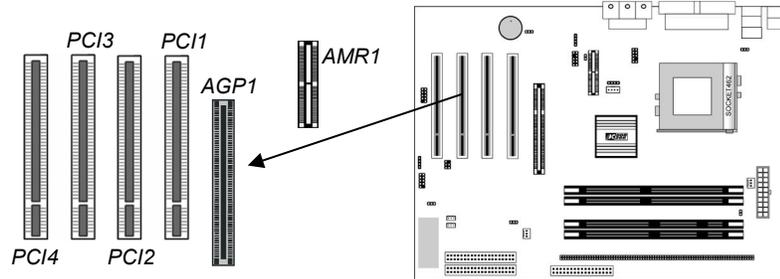
If you have a set indicator LEDs for the onboard LAN communication, you can connect the LED cable to the header **J15**. Pins 1-2 are for Link LED. Pins 3-4 are for 10/100 Mbps mode LED, the onboard LAN run in 100 Mbps mode when the LED lit.

Pin	Signal	Pin	Signal
1	Link LED	2	GND
3	GND	4	10/100 Mbps mode LED

2: Mainboard Installation

Expansion Slots

This mainboard has four 32-bit PCI slots, one AGP slot and one AMR slot.



Follow the steps below to install a PCI/AGP/AMR expansion card.

1. Locate the AMR, AGP or PCI slots on the mainboard.
2. Remove the slot cover for this slot from the system chassis.
3. Insert the expansion card edge connector into the slot and press it firmly down into it so that it is fully inserted.
4. Secure the expansion card bracket to the system chassis using the screw that held the slot cover in place.

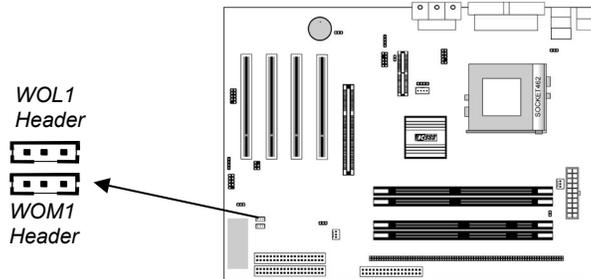
AMR Slot

The AMR (Audio Modem Riser) slot is an industry standard slot that allows for the installation of a special audio/modem riser card. Different territories have different regulations regarding the specifications of a modem card. You can purchase an AMR card that is approved in your area and install it directly into the AMR slot.

Mainboard User's Manual

Wake On LAN (WOL)

If you have installed a LAN adapter expansion card, connect the card to the Wake On LAN connector **WOL1**. This allows incoming traffic to resume the system from a software power down. You need to enable this feature in the BIOS setup utility.



Wake On Modem

If you have installed a fax/modem card, connect the fax/modem to the Wake On Modem connector **WOM1**. You can then use the setup utility to program your computer to resume from a power saving mode whenever there is an incoming call to the fax/modem.

Pin	Signal
1	5VSB
2	GND
3	PMEJ

Chapter 3

BIOS Setup Utility

Introduction

The BIOS Setup Utility records settings and information about your computer such as the date and time, the kind of hardware installed, and various configuration settings. Your computer uses this information to initialize all the components when booting up and functions as the basis for coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer from booting properly. If this happens, you can use the clear CMOS jumper to clear the CMOS memory used to store the configuration information.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install on or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

Mainboard User's Manual

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to “Hit if you want to run SETUP”. When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.

AMIBIOS SIMPLE SETUP UTILITY – VERSION 1.21.01 ©2000 American Megatrends, Inc. All Rights Reserved	
Standard CMOS Setup	Features Setup
Advanced Setup	CPU PnP Setup
Power Management Setup	Hardware Monitor
PCI / Plug and Play Setup	Change Password
Load Optimal Settings	Exit
Load Best Performance Settings	
ESC: Quit ↑↓←→: Select Item (Shift)F2: Change Color F5: Old Values F6: Optimal values F7: Best performance values F10: Save&Exit	

You can use the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the main menu page lead to dialog boxes which require you to answer Yes or No by hitting the **Y** or **N** keys.

If you have already made changes to the setup utility, press **F10** to save those changes and exit the utility. Press **F5** to reset the changes to the original values. Press **F6** to install the setup utility with a set of default values. Press **F7** to install the setup utility with a set of high-performance values.

3: BIOS Setup Utility

Standard CMOS Setup Page

Use this page to set basic information such as the date, the time, the IDE devices, and the diskette drives. If you press the F3 key, the system will automatically detect and configure the hard disks on the IDE channels.

AMIBIOS SETUP – STANDARD CMOS SETUP										
©2000 American Megatrends, Inc. All Rights Reserved										
Date (mm/dd/yy) : Tue Mar 27, 2001										
Time (hh/mm/ss) : 14:26:53										
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Blk Mode	PIO Mode	32Bit Mode
Pri Master	: Auto									On
Pri Slave	: Auto									On
Sec Master	: Auto									On
Sec Slave	: Auto									On
Floppy Drive A : 1.44MB 3 1/2"										
Floppy Drive B : Not Installed										
Month : Jan – Dec					ESC : Exit					
Day : 01 – 31					↑↓ : Select Item					
Year : 1901 – 2099					PU/PD/+/- : Modify					
					(Shift)F2 : Color					
					F3 : Detect All HDD					

Date & Time	Use these items to set the system date and time
Pri Master	Use these items to configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose <i>Auto</i> . If the <i>Auto</i> setting fails to find a hard disk drive, set it to <i>User</i> , and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting <i>CDROM</i> . If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120) select <i>Floptical</i> .
Pri Slave	
Sec Master	
Sec Slave	
Floppy Drive A	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.
Floppy Drive B	

Mainboard User's Manual

Advanced Setup Page

Use this page to set more advanced information about your system. Take some care with this page. Making changes can affect the operation of your computer.

AMIBIOS SETUP – ADVANCED SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	
1 st Boot Device	IDE-0	
2 nd Boot Device	Floppy	
3 rd Boot Device	CDROM	
Try Other Boot Devices	Yes	
S.M.A.R.T. for Hard Disks	Disabled	
PS/2 Mouse Support	Enabled	
Password Check	Setup	
Boot To OS/2 > 64MB	No	
L1 Cache	Reserved	
L2 Cache	Enabled	
DRAM Time/Freq. by SPD	Enabled	
DDR/SDR CAS Select	2.5/3	
Dram Performance	Normal	ESC : Quit ↑↓←→ : Select Item
AGP Delay Offset	Auto	F1 : Help PU/PD/+/- : Modify
AGP Driving Strength	Auto	F5 : Old Values (Shift)F2 : Color
Spread Spectrum	Disabled	F6 : Load Optimal values
Auto Detect DIMM/PCI Clk	Disabled	F7 : Load Best performance values

3: BIOS Setup Utility

Quick Boot	If you enable this item, the system starts up more quickly by elimination some of the power on test routines.
1st Boot Device 2nd Boot Device 3rd Boot Device	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
S.M.A.R.T. for Hard Disks	Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.
PS/2 Mouse Support	If this item is set to Enabled, the onboard PS/2 Mouse port will work. Setting this to Disable turns off the port.
Password Check	If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility (<i>Setup</i>) or required both at start-up and to enter the Setup Utility (<i>Always</i>).
Boot to OS/2 > 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.
L1/L2 Cache	Leave these items enabled since all the processors that can be installed on this board have internal cache memory.
DRAM Time/Freq. by SPD	This item allows you to enable or disable the DRAM timing/Frequency defined by the Serial Presence Detect electrical.
DDR/SDR CAS Select	If the item DRAM Time/Freq. by SPD is disabled, you can use this item to determine the operation of the DDR/SDRAM memory CAS (column address strobe). We recommend that you leave this item at the default value.
Dram Performance	If the item DRAM Time/Freq. by SPD is disabled, you can use this item to select the performance of the installed SDRAM. We recommend that you leave this item at the default value.
AGP Delay Offset	This item can be used to offset driving current on the delay of AGP cards. Some AGP cards need delaying than normal driving current in order to operate. We recommend that you set this item to Auto by default.
AGP Driving Strength	This item can be used to signal driving current on AGP cards to auto or Manual. Some AGP cards

Mainboard User's Manual

	need stronger than normal driving current in order to operate. We recommend that you set this item to Auto by default.
Spread Spectrum	If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.
Auto Detect DIMM/PCI Clk	When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

3: BIOS Setup Utility

Power Management Setup Page

This page sets some of the parameters for system power management operation.

AMBIOS SETUP – POWER MANAGEMENT SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
Power Management	APM/ACPI	
Ring On Power On	Disabled	
Resume On PME#	Disabled	
RTC Alarm Power On	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
KeyBoard PowerOn	Disabled	
HotKey Select	N/A	
		ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load Optimal values F7 : Load Best performance values

Power Management	Use this item to select a power management scheme. Both APM and ACPI are supported.
Ring On Power On	The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Fax/Modem. You must use an ATX power supply in order to use this feature.
Resume On PME#	The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is traffic on the onboard network adapter or PCI LAN/Modem card. You must use an ATX power supply in order to use this feature.
RTC Alarm Power On / Date / Hour / Minute / Second	The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.
KeyBoard Power On	If you enable this item, you can turn the system on and off by pressing hot keys on the keyboard. You must enable the Keyboard Power On jumper and use an ATX power supply in order to use this feature.

Mainboard User's Manual

HotKey Select	If the item KeyBoard PowerOn is enabled, you can use this item to select the hot keys to power on the system.
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PCI / Plug and Play Setup Page

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved	
Plug and Play Aware O/S	Yes
Primary Graphics Adapter	PCI
Allocate IRQ for PCI VGA	Yes
ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load Optimal values F7 : Load Best performance values	

Plug and Play Aware O/S	Enable this item if you are using an O/S that supports Plug and Play such as Windows 95 or 98.
Primary Graphics Adapter	This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default PCI setting still lets the onboard display work and allows the use of a second display card installed in a PCI slot.
Allocate IRQ for PCI VGA	If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

3: BIOS Setup Utility

Load Optimal Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

Load Best Performance Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

Features Setup Page

This page sets some of the parameters for peripheral devices connected to the system.

AMIBIOS SETUP – PERIPHERAL SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved			
OnBoard FDC	Enabled	USB Function for DOS	Disabled
OnBoard Serial Port1	3F8h/COM1		
OnBoard Serial Port2	2F8h/COM2		
OnBoard Ir Port	Disabled		
Ir Port Mode	N/A		
Ir Port IRQ	N/A		
Ir Port DMA	N/A		
Ir Transceiver Type	N/A		
Ir Half-Duplex TimeOut	N/A		
OnBoard Parallel Port	378h		
Parallel Port Mode	Normal		
EPP Version	N/A		
Parallel Port IRQ	7		
Parallel Port DMA	N/A		
OnBoard IDE	Both		
Ultra DMA Support	Disabled	ESC : Quit	↑↓←→ : Select Item
OnBoard AC'97 Audio	Enabled	F1 : Help	PU/PD/+/- : Modify
OnBoard AC'97 Modem	Auto	F5 : Old Values (Shift)	F2 : Color
OnBoard MPU401/GamePort	Enabled	F6 : Load Optimal values	
OnBoard USB Function	Enabled	F7 : Load Best performance values	

OnBoard FDC	Use this item to enable or disable the onboard floppy disk drive interface.
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Mainboard User's Manual

OnBoard Serial Port1/2	Use these items to enable or disable the onboard COM1/2 serial port, and to assign a port address.
OnBoard Ir Port, IR items	Use this item to enable or disable the Infrared port, and to assign a port address. If you select a specific address, the resources are assigned to the IR port, and you can use the five items below to determine the operation of the IR port
Onboard Parallel Port	Use this item to enable or disable the onboard LPT1 parallel port, and to assign a port address. The Auto setting will detect and available address.
Parallel Port Mode	Use this item to set the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.
EPP Version	Use this item to determine the EPP version, if you have set the Parallel Port Mode to EPP
Parallel Port IRQ	Use this item to assign either IRQ 5 or 7 to the parallel port.
Parallel Port DMA	Use this item to assign a DMA channel to the parallel port. The options are 0, 1 and 3.
Onboard IDE	Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.
Ultra DMA Support	Use this item to set Ultra DMA for IDE devices on the IDE channels. You must enable this or UDMA devices will not work at their intended speed.
Onboard AC'97 Audio	This item enables or disables the onboard AC'97 audio chip.
Onboard AC'97 Modem	This item enables or disables the onboard AC'97 modem chip.
Onboard MPU401/GamePort	Use this item to enable or disable the onboard MPU401/game port and to assign a port address.
Onboard USB Function	Enable this item if you plan to use the USB ports on this mainboard.
USB Function for DOS	Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

3: BIOS Setup Utility

CPU PnP Setup Page

This page lets you manually configure the mainboard for the CPU. The system will automatically detect the kind of CPU that you have installed and make the appropriate adjustments to the items on this page.

AMIBIOS SETUP – CPU PnP SETUP	
©2000 American Megatrends, Inc. All Rights Reserved	
CPU BRAND	AMD K7
CPU Type	Athlon
CPU Speed	933 MHz
CPU Ratio	7.0x
ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load Optimal values F7 : Load Best performance values	

CPU BRAND/Type/ Ratio	These items show the kind, core voltage, ratio and frequency of CPU that has installed in your system.
CPU Speed	Use this item to set the CPU speed that has installed in your system.

Mainboard User's Manual

Hardware Monitor Page

This page sets some of the parameters for the hardware monitoring function of this mainboard.

AMIBIOS SETUP – HARDWARE MONITOR (C) 2000 American Megatrends, Inc. All Rights Reserved	
--- Hardware Monitor ---	
System Temperature	
CPU Temperature	30°C/86°F
System Fan	
CPU Fan	
5V	5.000 V
3.3Vin	3.300 V
12Vin	12.000 V
Vcore	
ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load Optimal values F7 : Load Best performance values	

System / CPU Temperature	These items display CPU and system temperature measurement.
FANs & Voltage Measurements	These items indicate cooling fan speeds in RPM and the various system voltage measurements.

Change Password

If you highlight this item and press **Enter**, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

3: BIOS Setup Utility

Change or Remove the Password

Highlight this item, press **Enter** and type in the current password. At the next dialog box, type in the new password, or just press **Enter** to disable password protection.

Exit

Highlight this item and press **Enter** to save the changes that you have made in the Setup Utility configuration and exit the program. When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to exit without saving.

Chapter 4

Software & Applications

Introduction

This chapter describes the contents of the support CD-ROM that comes with the mainboard package.

The support CD-ROM contains all useful software, necessary drivers and utility programs to properly run our products. More program information is available in a README file, located in the same directory as the software.

To run the support CD, simply insert the CD into your CD-ROM drive. An Auto Setup screen automatically pops out, and then you can go on the auto-installing or manual installation depending on your operating system.

If your operating system is Windows 98/ME/2000/XP, it will automatically install all the drivers and utilities for your mainboard; if Windows NT or manual installation, please follow the instructions described as the Installing under Windows NT or Manual Installation section.

4: Software & Applications

Installing Support Software

1. Insert the support CD-ROM disc in the CD-ROM drive.
2. When you insert the CD-ROM disc in the system CD-ROM drive, the CD automatically displays an Auto Setup screen.
3. The screen displays three buttons of **Setup**, **Browse CD** and **Exit** on the right side, and three others **Setup**, **Application** and **ReadMe** at the bottom. Please see the following illustration.



The **Setup** button runs the software auto-installing program as explained in next section.

The **Browse CD** button is a standard Windows command that you can check the contents of the disc with the Windows 98 file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive; or click the CD-ROM driver from the Windows Explorer, and click the Setup icon.

The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

The **ReadMe** brings you to the Install Path where you can find out path names of software driver.

Mainboard User's Manual

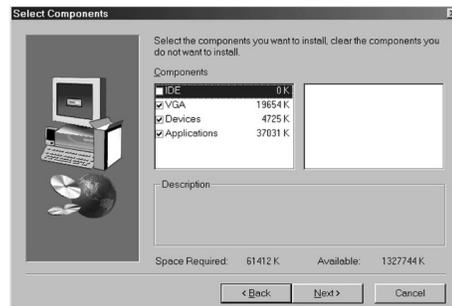
Auto-Installing under Windows 98/ME/2000/XP

If you are under Windows 98/ME/2000/XP, please click the **Setup** button to run the software auto-installing program while the Auto Setup screen pops out after inserting the support CD-ROM:

1. The installation program loads and displays the following screen. Click the **Next** button.



2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.



3. The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as needed to complete installing whatever software you selected. When the process is finished, all the support software will be installed and start working.

4: Software & Applications

Installing under Windows NT or Manual Installation

If you are under Windows NT, the auto-installing program doesn't work out; or you have to do the manual installation, please follow this procedure while the Auto Setup screen pops out after inserting the support CD-ROM:

1. Click the **Browse CD** button to bring up a file browser window. You can find out the **PATH.HTML**; or click the **ReadMe** to bring up a screen, and then click the Install Path at the bottom of the screen to find out the **PATH.HTML**, too.
2. Find out your mainboard model name from the **PATH.HTML**. Click the model name and obtain its correct driver directory.
3. Install each software in accordance with the corresponding driver path.

Bundled Software Information

All bundled software available on the CD-ROM is for users' convenience. You can install bundled software as follows:

1. Click the **Application** button while the Auto Setup screen pops out after inserting the support CD-ROM.
2. A software menu appears. Click the software you want to install.
3. Follow onscreen instructions to install the software program step by step until finished.