P4S55FX2

User Manual

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Chapter 1 Introduction

Thank you for purchasing ASRock P4S55FX2 motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD. More information of advanced BIOS setup is offered on page 22 for advanced users' reference.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest memory and CPU support lists on ASRock website as well. ASRock website http://www.asrock.com

1.1 Package Contents

ASRock P4S55FX2 Motherboard
(ATX Form Factor: 12.0-in x 7.2 -in, 30.5 cm x 18.3 cm)
ASRock P4S55FX2 Quick Installation Guide
ASRock P4S55FX2 Support CD
One 80-conductor Ultra ATA 66/100/133 IDE Ribbon Cable
One Ribbon Cable for a 3.5-in Floppy Drive
One ASRock I/O Plus™ Shield

1.2 Specifications

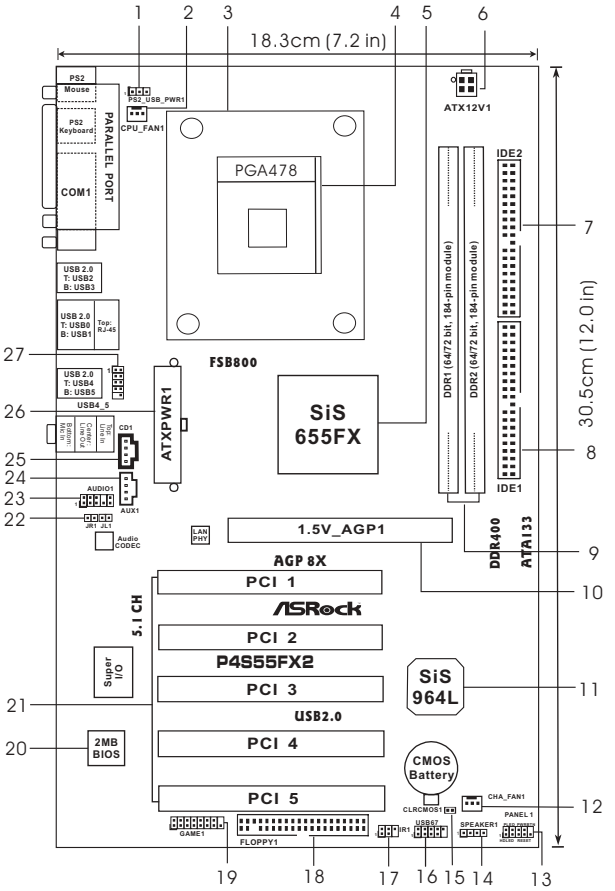
Platform:	ATX Form Factor: 12.0-in x 7.2-in, 30.5 cm x 18.3 cm
CPU:	Socket 478, supports Intel® Pentium® 4 (Prescott, Northwood, Willimate) / Celeron® processor
Chipsets:	North Bridge: SiS 655FX, FSB @ 800/533/400 MHz, with Intel® Hyper-Threading Technology ready South Bridge: SiS 964L, supports USB 2.0, ATA 133
Memory:	2 DDR DIMM Slots: DDR1, DDR2 Supports PC3200 (DDR400) / PC2700 (DDR333) / PC2100 (DDR266) , Max. 2 GB Dual Channel Memory Technology support (see **CAUTION 1**)
IDE:	IDE1: ATA 133 / Ultra DMA Mode 6 IDE2: ATA 133 / Ultra DMA Mode 6 Supports up to 4 IDE devices
Floppy Port:	Supports up to 2 floppy disk drives
Audio:	5.1 channels AC'97 Audio
LAN:	Speed: 802.3u (10/100 Ethernet), supports Wake-On-LAN
Hardware Monitor:	CPU temperature sensing Chassis temperature sensing CPU overheat shutdown to protect CPU life (ASRock U-COP)(see **CAUTION 2**) CPU fan tachometer Chassis fan tachometer Voltage monitoring: +12V, +5V, +3V, Vcore
PCI slots:	5 slots with PCI Specification 2.2
AGP slot:	1 AGP slot, supports 1.5V, 8X/4X AGP card (see **CAUTION 3**)
USB 2.0:	8 USB 2.0 ports: includes 6 default USB 2.0 ports on the rear panel, plus one header to support 2 additional USB 2.0 ports (see **CAUTION 4**)
ASRock I/O Plus™:	1 PS/2 mouse port, 1 PS/2 keyboard port, 1 serial port: COM1, 1 parallel port: ECP/EPP support, 6 default USB 2.0 ports, 1 RJ 45 port, Audio Jack: Line In / Line Out / Microphone

BIOS:	AMI BIOS Supports “Plug and Play” ACPI 1.1 compliance wake up events Supports jumperfree SMBIOS 2.3.1 support CPU frequency stepless control (only for advanced users’ reference, see **CAUTION 5**)
OS:	Microsoft® Windows® 98SE / ME / 2000 / XP compliant

CAUTION!

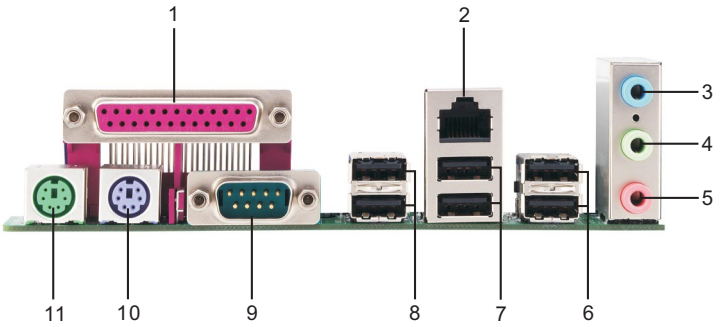
1. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 11 for proper installation.
2. If the CPU is overheated, please check if the CPU fan on the motherboard functions properly before you resume the system. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
3. Do NOT use a 3.3V AGP card on the AGP slot of this motherboard! It may cause permanent damage!
4. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 / 2000 SP4. It may not work properly under Microsoft® Windows® 98 / ME. Please refer to Microsoft® official document at http://www.microsoft.com/whdc/hwdev/bus/USB/USB2support.mspx
5. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.

1.3 Motherboard Layout



1 PS2_USB_PWR1 Jumper
2 CPU Fan Connector (CPU_FAN1)
3 CPU Heatsink Retention Module
4 CPU Socket
5 North Bridge Controller
6 ATX 12V Connector (ATX12V1)
7 Secondary IDE Connector (IDE2, Black)
8 Primary IDE Connector (IDE1, Blue)
9 184-pin DDR DIMM Slots
10 AGP Slot (1.5V_AGP1)
11 South Bridge Controller
12 Chassis Fan Connector (CHA_FAN1)
13 System Panel Header (PANEL1)
14 Chassis Speaker Header (SPEAKER 1)
15 Clear CMOS Solder Points (CLRCMOS1)
16 USB 2.0 Header (USB67, Blue)
17 Infrared Module Header (IR1)
18 Floppy Connector (FLOPPY1)
19 Game Connector (GAME1)
20 Flash Memory
21 PCI Slots (PCI1- 5)
22 JR1 Jumper / JL1 Jumper
23 Front Panel Audio Header (AUDIO1)
24 Internal Audio Connector: AUX1 (White)
25 Internal Audio Connector: CD1 (Black)
26 ATX Power Connector (ATXPWR1)
27 USB 2.0 Header (USB4_5, Blue)

1.4 ASRock I/O Plus™



1	Parallel Port	7	USB 2.0 Ports (USB0, USB1)
2	RJ-45 Port	8	USB 2.0 Ports (USB2, USB3)
3	Line In (Light Blue)	9	Serial Port: COM1
4	Line Out (Lime)	10	PS/2 Keyboard Port (Purple)
5	Microphone (Pink)	11	PS/2 Mouse Port (Green)
6	USB 2.0 Ports (USB4, USB5)		

Chapter 2 Installation

P4S55FX2 is an ATX form factor (12.0-in x 7.2-in, 30.5 cm x 18.3 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

2.1 CPU Installation

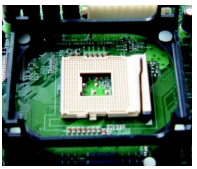
Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that its marked corner matches the base of the socket lever.

Step 3. Carefully insert the CPU into the socket until it fits in place.

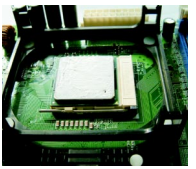
The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



Step 1

Step 2, 3



Step 4

2.2 Installation of CPU Fan and Heatsink

This motherboard adopts 478-pin CPU socket to support Intel® Pentium® 4 / Celeron® CPU. It requires larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU_FAN connector (CPU_FAN1, see p.7 No. 2). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

2.3 Installation of Memory Modules (DIMM)

P4S55FX2 motherboard provides two 184-pin DDR (Double Data Rate) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install two **identical** (the same brand, speed, size and chip-type) memory modules in the DDR DIMM slots to activate Dual Channel Memory Technology. Otherwise, it will operate at single channel mode.

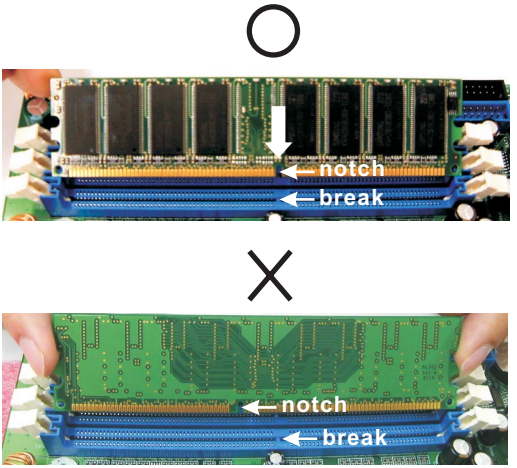
If you install only one memory module or two non-identical memory modules, it is unable to activate the Dual Channel Memory Technology.

Installing a DIMM

Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.

Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.4 Expansion Slots (PCI and AGP Slots)

There are 5 PCI slots and 1 AGP slot on P4S55FX2 motherboard.

PCI slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface.

AGP slot: The AGP slot is used to install a graphics card. The ASRock AGP slot has a special locking mechanism which can securely fasten the graphics card inserted.

Please do NOT use a 3.3V AGP card on the AGP slot of this motherboard! It may cause permanent damage! For the voltage information of your AGP card, please check with the AGP card vendors.

Installing an expansion card

Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).

Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

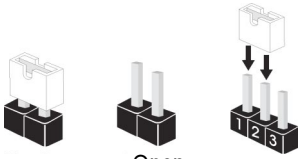
Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

Step 5. Fasten the card to the chassis with screws.

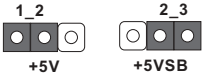
Step 6. Replace the system cover.

2.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “Short”. If no jumper cap is placed on pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when jumper cap is placed on these 2 pins.



Short Open

Jumper	Setting	
PS2_USB_PWR1 (see p.7 No. 1)		Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

JR1/JL1 Jumpers
(see p.7 No. 22)

Note: If the jumpers JL1 and JR1 are short, both the front panel and the rear panel audio connectors can work.

Clear CMOS
(CLRCMOS1, 2 solder points)
(see p.7 No. 15)


solder points

Note: CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then short the solder points for more than 3 seconds by using metal material, e.g., a paper clip. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.

2.6 Onboard Headers and Connectors

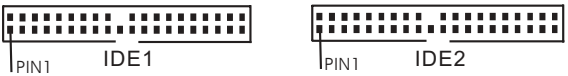
Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

FDD Connector
(33-pin FLOPPY1)
(see p.7 No. 18)

Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector.

Primary IDE Connector (Blue)
(39-pin IDE1, see p.7 No. 8)

Secondary IDE Connector (Black)
(39-pin IDE2, see p.7 No.7)



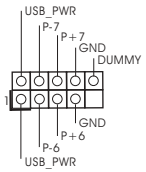
connect the blue end to the motherboard

connect the black end to the IDE devices

80-conductor ATA 66/100/133 cable

Note: If you use only one IDE device on this motherboard, please set the IDE device as “Master”. Please refer to the instruction of your IDE device vendor for the details. Besides, to optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black).

USB 2.0 Header
(9-pin USB67)
(see p.7 No. 16)



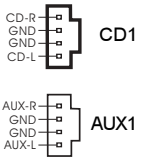
ASRock I/O Plus™ provides you 6 default USB 2.0 ports on the rear panel. If the rear USB ports are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.

Internal Audio Connectors

(4-pin CD1, 4-pin AUX1)

(CD1: see p.7 No.25)

(AUX1: see p.7 No.24)

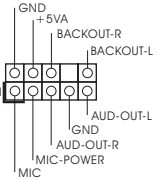


These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Front Panel Audio Header

(9-pin AUDIO1)

(see p.7 No.23)

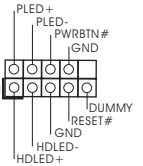


This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.

System Panel Header

(9-pin PANEL1)

(see p.7 No.13)

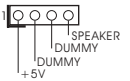


This header accommodates several system front panel functions.

Chassis Speaker Header

(4-pin SPEAKER 1)

(see p.7 No.14)

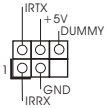


Please connect the chassis speaker to this header.

Infrared Module Header

(5-pin IR1)

(see p.7 No. 17)

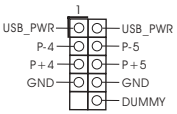


This header supports an optional wireless transmitting and receiving infrared module.

Shared USB 2.0 Header

(9-pin USB4_5)

(see p.7 No. 27)

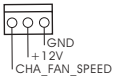


This USB4_5 connector is shared with the USB 2.0 ports 4,5 on ASRock I/O Plus™. When using the front panel USB ports by attaching the front panel USB cable to this connector (USB4_5), the USB ports 4,5 on ASRock I/O Plus™ will not be able to function.

Chassis Fan Connector

(3-pin CHA_FAN1)

(see p.7 No. 12)

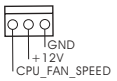


Please connect the chassis fan cable to this connector and match the black wire to the ground pin.

CPU Fan Connector

(3-pin CPU_FAN1)

(see p.7 No. 2)

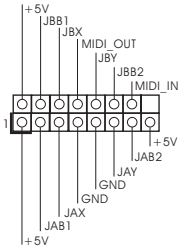


Please connect the CPU fan cable to this connector and match the black wire to the ground pin.

Game Connector

(15-pin GAME1)

(see p.7 No. 19)



Connect a Game cable to this connector if the Game port bracket is installed.

ATX Power Connector

(20-pin ATXPWR1)

(see p.7 No. 26)

Please connect an ATX power supply to this connector.

ATX 12V Connector

(4-pin ATX12V1)

(see p.7 No. 6)

Please connect an ATX 12V power supply to this connector.

Chapter 3 BIOS Setup

3.1 BIOS Setup Utility

This section explains how to use the BIOS Setup Utility to configure your system. The Flash Memory on the motherboard stores the BIOS Setup Utility. You may run the BIOS Setup Utility when you start up the computer. Please press <F2> during the Power-On-Self-Test (POST) to enter the BIOS Setup Utility, otherwise, POST continues with its test routines.

If you wish to enter the BIOS Setup after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

The BIOS Setup Utility is designed to be user-friendly. It is a menu-driven program, which allows you to scroll through its various sub-menus and select among the predetermined choices.

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and may not exactly match what you see on your screen.

3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

MAIN	Sets up the basic system configuration
ADVANCED	Sets up the advanced features
SECURITY	Sets up the security features
POWER	Configures Power Management features
BOOT	Configures the default system device that is used to locate and load the Operating System
EXIT	Exits the current menu or the BIOS Setup

To access the menu bar items, press the right or left arrow key on the keyboard until the desired item is highlighted.

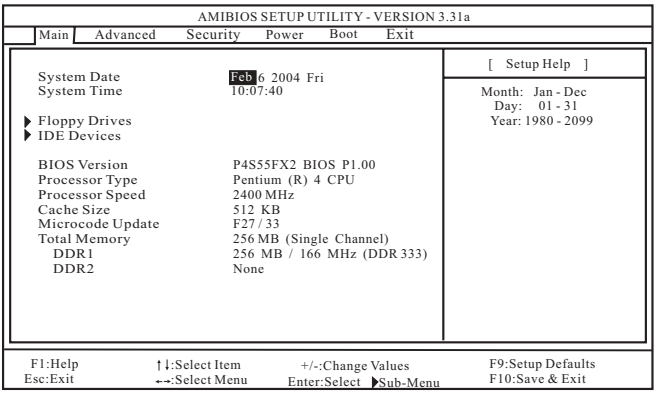
3.1.2 Legend Bar

At the bottom of the Setup Screen is a legend bar. The following table lists the keys in the legend bar with their corresponding functions.

Navigation Key(s)	Function Description
<F1>	Displays the General Help Screen
<ESC>	Jumps to the Exit menu or returns to the upper menu from the current menu
↑ / ↓	Moves cursor up or down between fields
← / →	Selects menu to the left or right
+ / -	Increases or decreases values
<Enter>	Brings up a selected menu for a highlighted field
<F9>	Loads all the setup items to default value
<F10>	Saves changes and exits Setup

3.2 Main Menu

When you enter the BIOS Setup Utility, the following screen appears.



System Date [Month/Day/Year]

Set the system date that you specify. Valid values for month, day, and year are Month: (Jan to Dec), Day: (1 to 31), Year: (up to 2099). Use ↑ ↓ keys to move between the Month, Day and Year fields.

System Time [Hour:Minute:Second]

Set the system to the time that you specify. Use ↑ ↓ keys to move between the Hour, Minute and Second fields.

Floppy Drives

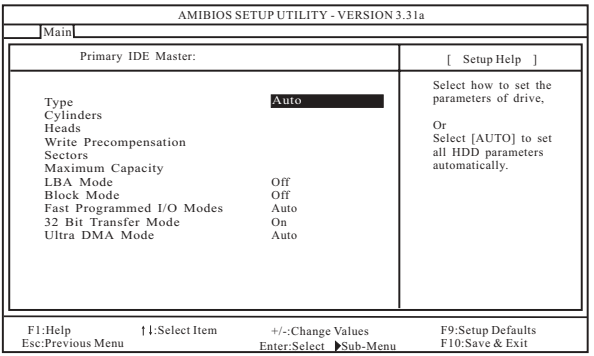
Use this to set the type of floppy drives installed.

IDE Devices

Use this to configure IDE devices.

TYPE

To set the type of the IDE device, first, please select “IDE Devices” on Main menu and press <Enter> to get into the sub-menu. Then, select among “Primary IDE Master”, “Primary IDE Slave”, “Secondary IDE Master”, and “Secondary IDE Slave” to make configuration of its type. After making your selections on this sub-menu, press <ESC> key to return to the upper menu, in whcih the hard disk drive field will display the size of the hard disk drive that you configured. Below are the configuration options.



[USER]: It allows user to manually enter the number of cylinders, heads, and sectors per track for the drive.

Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

[Auto]: Select [Auto] to automatically detect hard disk drive. If auto-detection is successful, the BIOS Setup automatically fills in the correct values for the remaining fields on this sub-menu. If the auto-detection fails, it may due to that the hard disk is too old or too new. If the hard disk was already formatted on an older system, the BIOS Setup may detect incorrect parameters. In these cases, select [User] to manually enter the IDE hard disk drive parameters.

After entering the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives.

[ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

Cylinders

This is used to configure the number of cylinders. Refer to the drive documentation to determine the correct value.

Heads

This is used to configure the number of read/write heads. Refer to the drive documentation to determine the correct values.

Write Pre-compensation

Enter Write Pre-compensation sector. Refer to the drive documentation to determine the correct value.

Sectors

This is used to configure the number of sectors per track. Refer to the drive documentation to determine the correct value.

Maximum Capacity

This field shows the drive's maximum capacity as calculated by the BIOS based on the drive information you entered.

LBA Mode

This allows user to select the LBA mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Off] to disable the LBA mode.

Block Mode

Set the block mode to [On] will enhance hard disk performance by reading or writing more data during each transfer.

Fast Programmed I/O Modes

This allows user to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

32 Bit Transfer Mode

It allows user to enable 32-bit access to maximize the IDE hard disk data transfer rate.

Ultra DMA Mode

Ultra DMA capability allows improved transfer speeds and data integrity for compatible IDE devices. Set to [Disabled] to suppress Ultra DMA capability.

3.3 Advanced, Security, Power, Boot, and Exit Menus

Detailed descriptions of these menus are listed in the Appendix. See page 22.

Chapter 4 Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 98 SE / ME / 2000 / XP. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file ASSETUP.EXE from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers if the system detects installed devices. Install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 ASRock PC-DIY Live Demo Program

ASRock presents you a multimedia PC-DIY live demo, which shows you how to install your own PC system step by step. You can find the file through the following path:

..\MPEGAV\AVSEQ01.DAT

To see this demo program, you can run Microsoft® Media Player® to play the file.

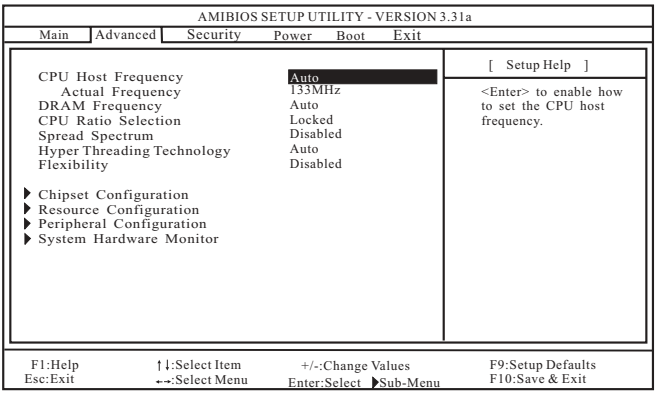
4.2.5 Contact Information

If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.

Appendix: Advanced BIOS Setup

This section will introduce you the following BIOS Setup menus: “Advanced,” “Security,” “Power,” “Boot,” and “Exit.”

1. Advanced BIOS Setup Menu



CPU Host Frequency:

This shows current CPU host frequency of the installed motherboard.

DRAM Frequency:

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically. You may also select other value as operating frequency: [100MHz (DDR 200)], [133MHz (DDR 266)], [166MHz (DDR 333)], [200MHz (DDR 400)]. If the installed CPU is an FSB-800MHz CPU, the option [100MHz (DDR 200)] will not be available.

CPU Ratio Selection:

CPU Ratio is the multiple that times the frontside bus frequency will equal the core speed of the installed processor. Whether the option is open or locked is determined by the installed processor.

Spread Spectrum:

This field should always be set to [Disabled] for better system stability.

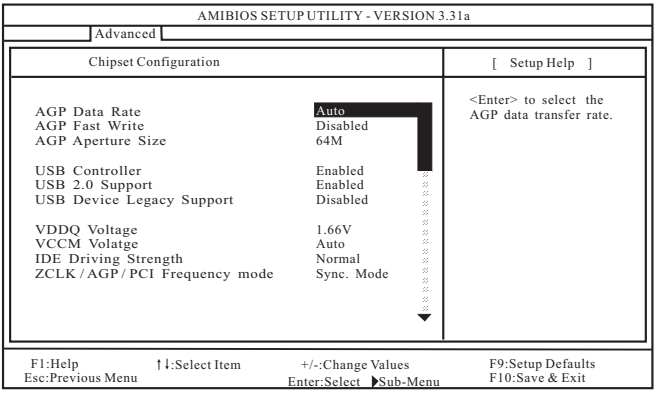
Hyper-Threading Technology:

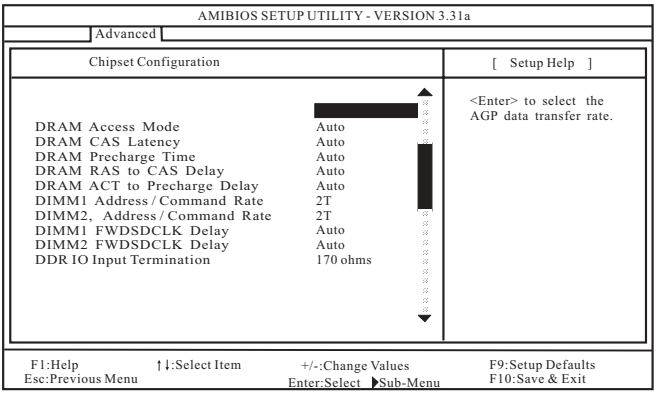
To enable this feature, it requires a computer system with an Intel Pentium®4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Auto] if using Microsoft® Windows® XP, or Linux kernel version 2.4.18 or higher. This option will be hidden if the current CPU does not support Hyper-Threading technology.

Flexibility:

The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled].

Chipset Configuration:





AGP Data Rate: This allows you to select the AGP data transfer rate between [8X] or [4X] for an AGP 3.0 card. For AGP 2.0 card, you may select between [4X], [2X], and [1X]. The default value is [Auto].

AGP Fast Write: This allows you to enable or disable the feature of AGP fast write protocol support.

AGP Aperture Size: It refers to a section of the PCI memory address range used for graphics memory. It is recommended to leave this field at the default value unless the installed AGP card's specifications requires other sizes.

USB Controller: Use this to enable or disable the use of USB controller.

USB 2.0 Support: Use this to enable or disable the use of USB 2.0 support.

USB Device Legacy Support: Use this to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc.

VDDQ Voltage: Use this to select VDDQ voltage between [1.57V] and [1.66V].

VCCM Voltage: Use this to select VCCM voltage between [2.55V] , [2.64V], [2.71V] and [2.78V]

IDE Driving Strength: Select [Normal] or [Strong] for IDE driving strength.

ZCLK/AGP/PCI Frequency mode: If the item **CPU Host Frequency** is set to [Manual], it allows you to set the value for this item. You may set this item to synchronize with CPU Host Frequency or fix it at 132/66/33 MHz.

DRAM Access Mode: The default value is [Auto], which will automatically select the proper access mode for the system. You may select between [Single Channel] and [Dual Channel] if you have properly set the dual channel memory configuration.

DRAM CAS Latency: This is used to adjust the means of memory accessing. Configuration options: [Auto], [2T], [2.5T], [3T]. Please note that not all the DDR DIMMs can support CAS latency=3T.

DRAM Precharge Time: Use this to select among [Auto], [3T], [2T], [4T], and [5T] for DRAM Precharge Time <tRP>.

DRAM RAS to CAS Delay: Use this to select among [Auto], [3T], [2T], [4T], and [5T] for DRAM RAS to CAS Delay <tRCD>.

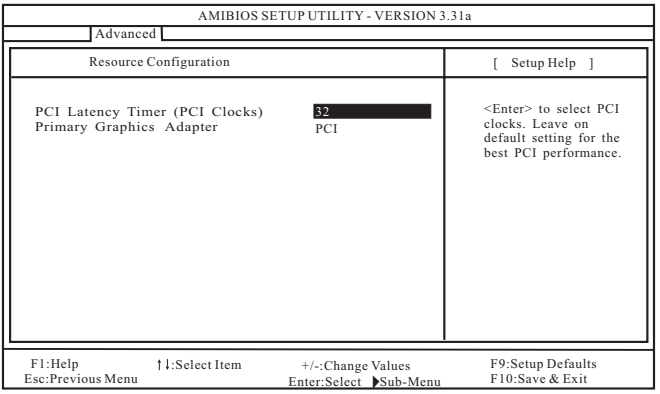
DRAM ACT to Precharge Delay: Use this to select among [Auto], [6T], [7T], [5T], [4T], [8T] and [9T] for DRAM ACT to Precharge Delay <tRAS>.

DIMM1, 2 Address/Command Rate: Use this to select among [Auto], [2T], and [1T] for DIMM1, 2 Address/Command Rate <MA>.

DIMM1, 2 FWDSDCLK Delay: Use this to select [Auto] or other values for DIMM1, 2 FWDSDCLK delay.

DDR IO Input Termination: Use this to adjust chipset DDR interface termination strength.

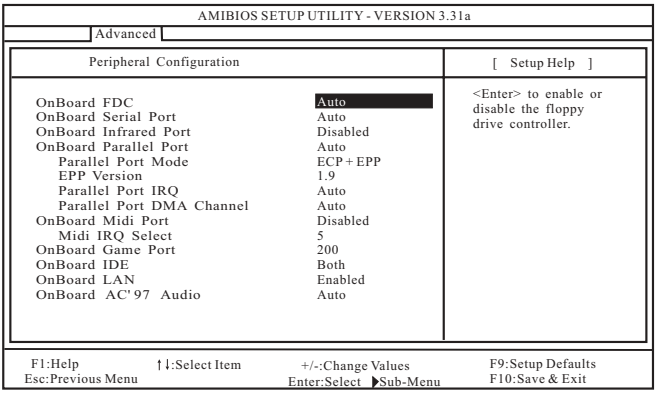
Resource Configuration:



PCI Latency Timer (PCI Clocks): The default is 32. It is recommended to keep the default value unless the inserted PCI expansion cards' specifications require other settings.

Primary Graphics Adapter: This allows you to select [AGP] or [PCI] as the primary graphics adapter.

Peripheral Configuration:



OnBoard FDC: Use this to enable or disable floppy drive controller.

OnBoard Serial Port: Use this to set the address for the serial port COM1. Configuration options: [Auto], [Disabled], [3F8 / IRQ4 / COM1], [2F8 / IRQ3 / COM2], [3E8 / IRQ4 / COM3], [2E8 / IRQ3 / COM4].

OnBoard Serial Port

Use this to set addresses for the on-board serial ports or disable serial ports. Configuration options: [Auto], [Disabled], [3F8 / IRQ4 / COM1], [2F8 / IRQ3 / COM2], [3E8 / IRQ4 / COM3], [2E8 / IRQ3 / COM4].

OnBoard Infrared Port

You may select [Auto] for the on-board infrared port feature, which will enable this feature if the infrared module is installed. Or you may disable the feature by selecting [Disabled].

OnBoard Parallel Port: Select Parallel Port address or disable Parallel Port. Configuration options: [Auto], [Disabled], [378], [278].

Parallel Port Mode: Set the operation mode of the parallel port. The default value is [ECP+CPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, “EPP Version”.

OnBoard Midi Port: Select address for Midi Port or disable Midi Port. Configuration options: [Disabled], [330], [300].

Midi IRQ Select: Use this to select Midi IRQ.

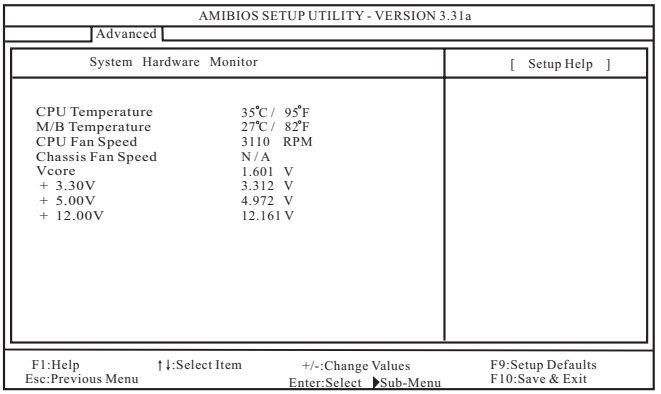
OnBoard Game Port: Select address for Game Port or disable Game Port. Configuration options: [Disabled], [200], [208].

OnBoard IDE: This allows you to enable or disable the onboard IDE controller.

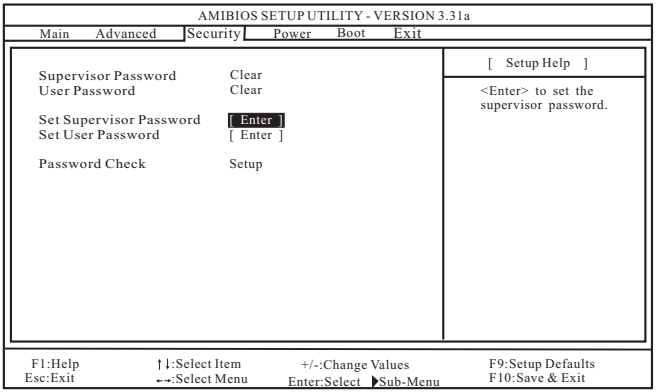
OnBoard LAN: This allows you to enable or disable the onboard LAN feature.

OnBoard AC’97 Audio: Select [Disabled], [Auto] or [Enabled] for the onboard AC’97 Audio feature.

System Hardware Monitor: You can check the status of the hardware on your system. It allows you to monitor the parameters for CPU temperature, Motherboard temperature, CPU fan speed, and critical voltage.



2. Security Setup Menu



Supervisor Password: This field shows the status of the Supervisor Password.

[Clear]: No password has been set.

[Set]: Supervisor password has been set.

User Password: This field shows the status of the User Password.

[Clear]: No password has been set.

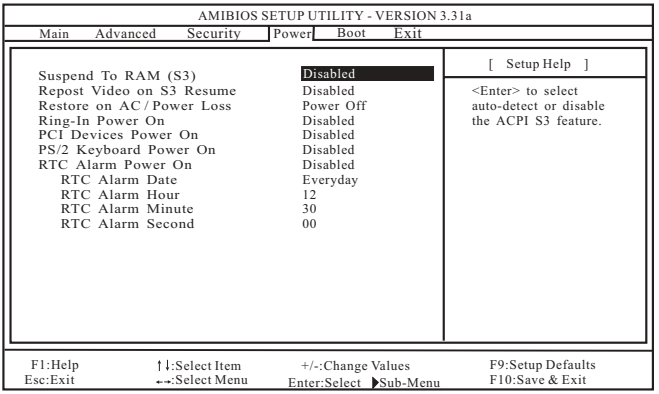
[Set]: User password has been set.

Set Supervisor Password: Press <Enter> to set Supervisor Password. Valid password can be a 1 to 6 alphanumeric characters combination. If you already have a password, you must enter your current password first in order to create a new password.

Set User Password: Press <Enter> to set User Password. Valid password can be a 1 to 6 alphanumeric characters combination. If you already have a password, you must enter your current password first in order to create a new password.

Password Check: Select the check point for “Password Check”. Configuration options: [Setup], [Always]. If [Setup] option is selected, the “Password Check” is performed before BIOS setup. If [Always] option is selected, the “Password Check” is performed before both boot-up and BIOS setup.

3. Power Setup Menu



Suspend to RAM (S3): This field allows you to select whether to auto-detect or disable the Suspend-to-RAM (S3) feature. Select [Auto] will enable this feature if the system supports it.

Repost Video on S3 Resume: This feature allows you to repost video on S3 resume. It is recommended to enable this feature under Microsoft® Windows® 98 / ME.

Restore on AC/Power Loss: This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

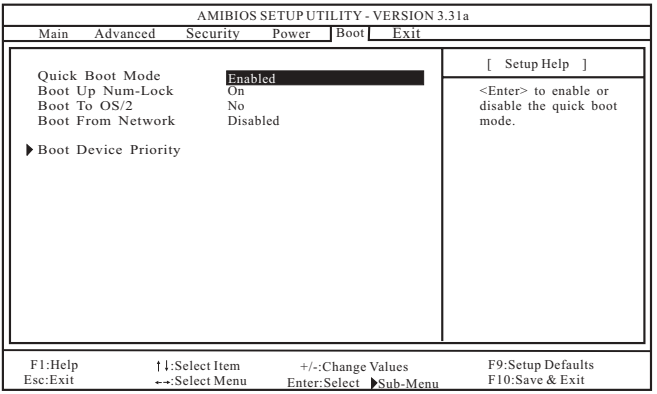
Ring-In Power On: Use this to enable or disable Ring-in signals to turn on the system from the power-soft-off mode.

PCI Devices Power On: Use this to enable or disable PCI devices to turn on the system from the power-soft-off mode.

PS/2 Keyboard Power On: Use this to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

RTC Alarm Power On: Use this to enable or disable RTC (Real Time Clock) to power on the system. If [Enable] is selected, you will need to fill the RTC Alarm Date / Hour / Minute / Second sub-fields with the actual wake up time you desire.

4. Boot Setup Menu



Quick Boot Mode: Enable this mode will speed up the boot-up routine by skipping memory retestings. The default value is [Enabled].

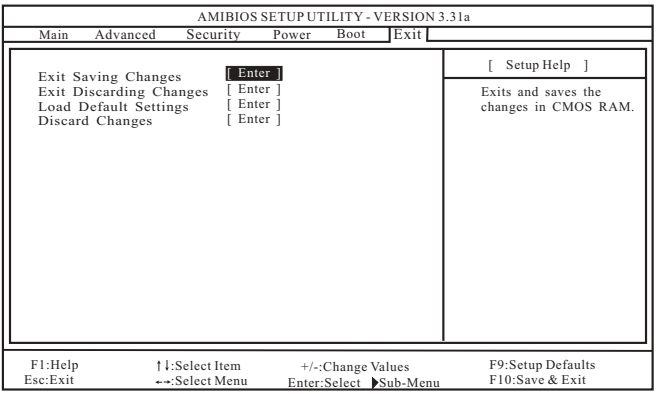
Boot Up Num-Lock: If this is enabled, it will automatically activate the Numeric Lock function after boot-up. The default value is [On].

Boot To OS/2: This enables boot-up to OS/2 operating system. The default value is [No].

Boot From Network: Use this to enable or disable “boot from network” feature. The default value is [Disabled].

Boot Device Priority: This allows you to set the boot device priority.

5. Exit Menu



Exit Saving Changes: After you enter the sub-menu, the message “Save current settings and exit” will appear. If you press <ENTER>, it will save the current settings and exit the BIOS SETUP Utility.

Exit Discarding Changes: After you enter the submenu, the message “Quit without saving changes” will appear. If you press <ENTER>, you will exit the BIOS Setup Utility without making any changes to the settings.

Load Default Settings: After you enter the submenu, the message “Load default settings” will appear. If you press <Enter>, it will load the default values for all the setup configurations.

Discard Changes: After you enter the sub-menu, the message “Load setup original values” will appear. If you press <ENTER>, the original values will be restored and all changes are discarded.