

FN41

**AMD AthlonXP/Athlon/Duron Processor
Based MAIN BOARD**

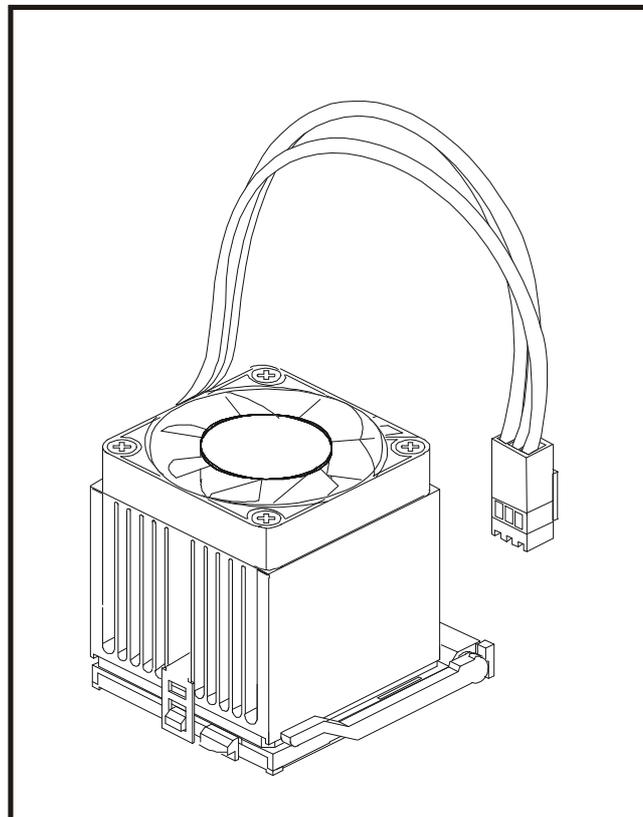
WARNING

Thermal issue is highly essential for processors with a speed of 600MHz and above. Hence, we recommend you to use the CPU fan qualified by AMD or motherboard manufacturer. Meanwhile, please make sure CPU and fan are securely fastened well. Otherwise, improper fan installation not only gets system unstable but also could damage both CPU and motherboard because insufficient thermal dissipation.

If you would like to know more about thermal topic please see **AMD website** for detailed thermal requirement through the address:

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

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



Shuttle® FN41

Socket 462

AMD AthlonXP/Athlon/Duron Processor
based DDR Mainboard

Manual Version 1.0

Copyright

Copyright© 2002 by Shuttle® Inc. All Rights Reserved.

No part of this publication may be reproduced, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without prior written permission from Shuttle® Inc.

Disclaimer

Shuttle® Inc. shall not be liable for any incidental or consequential damages resulting from the performance or use of this product.

This company makes no representations or warranties regarding the contents of this manual. Information in this manual has been carefully checked for reliability; however, no guarantee is given as to the correctness of the contents. In the interest of continued product improvement, this company reserves the right to revise the manual or include changes in the specifications of the product described within it at any time without notice and without obligation to notify any person of such revision or changes. The information contained in this manual is provided for general use by the customers.

Trademarks

Shuttle is a registered trademark of Shuttle Inc.

AMD, Athlon, and Duron are registered trademarks of AMD Corporation.

Nvidia is a registered trademark of Nvidia Corporation.

PS/2 is a registered trademark of IBM Corporation.

AWARD is a registered trademark of Award Software Inc.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

General Notice: Other brand and product names used herein are for identification purposes only and may be trademarks of their respective owners.

TABLE OF CONTENTS

WHAT'S IN THE MANUAL	5
Quick Reference	5
About This Manual	5
1 INTRODUCTION	6
1.1 TO DIFFERENT USERS	6
FIRST-TIME DIY SYSTEM BUILDER	6
EXPERIENCED DIY USER	6
SYSTEM INTEGRATOR.....	6
1.2 ITEM CHECKLIST	7
2 FEATURES	8
2.1 SPECIFICATIONS	8
3 HARDWARE INSTALLATION	11
3.1 STEP BY STEP INSTALLATION	11
Accessories of FN41	11
STEP 1 Install the CPU	12
STEP 2 Set Jumpers	13
STEP 3 Install DDR SDRAM System Memory.....	13
STEP 4 Install Peripherals in System Case	14
STEP 5 Mount the Mainboard on the Computer Chassis.....	15
STEP 6 Connect Front Panel Switches/LEDs/Speaker/USB	16
STEP 7 Connect IDE and Floppy Disk Drives	17
STEP 8 Connect Other Internal Peripherals.....	17
STEP 9 Connect the Power Supply	19
STEP 10 Install Add-on Cards in Expansion Slots	19
STEP 11 Connect External Peripherals to Back Panel	20
STEP 12 First Time System Boot Up	21
STEP 13 Install Drivers & Software Components	22

3.2 JUMPER SETTINGS	23
JUMPERS & CONNECTORS GUIDE	24
<i>Jumpers</i>	
Clear CMOS Setting (JP1)	27
<i>Back-Panel Connectors</i>	
VGA Port Connectors	28
COM1 Port Connector	28
TV-Out Connectors	28
IEEE 1394 Port Connectors	28
LAN Port Connector	28
USB1/2 Port Connectors	28
PS/2 Keyboard & PS/2 Mouse Connectors	29
Bass/Center-Out Port Connector	29
Line-Out (Front-Out) Port Connector	29
Rear-Out Port Connector	29
<i>Front-Panel Connectors</i>	
ATX Power On/Off Switch Connector (POWER ON)	30
HDD LED Connector (HDD LED)	30
Green LED / Power LED Connector (GREEN LED/POWER LED)	31
Hardware Reset Connector (RESET)	31
Extended USB Headers (JP3/JP11)	32
Front-Panel 1394 Header (JP8)	32
Front Audio Header (JP6)	33
<i>Internal Peripherals Connectors</i>	
Enhanced IDE and Floppy Connector	34
<i>Other Connectors</i>	
ATX Power Supply Connector (CN9 and JP13)	35
Cooling Fan Connectors for System(FAN1), Chipset (FAN2), CPU (FAN3)	36

Audio CD-IN Connector (CN6) (Black)	36
IR for Keyboard and Mouse Connectors (JP2).....	37
SPDIF Headers (JP7)	37
IR (JP5)	37
AGP Protection LED (D16).....	38
CPU OVERTEMPATURE LED (D14)	38
3.3 SYSTEM MEMORY CONFIGURATION	39
1. INSTALL MEMORY	39
2. UPGRADE MEMORY	39
4 SOFTWARE UTILITY	40
4.1 Mainboard CD Overview	40
4.2 Install Nvidia Chipset Driver	41
4.3 Install VGA Driver(Only for Win9X, WinMe, and Win2K).....	42
4.4 Install USB2.0 Driver(Only for WinXP)	43
4.5 View the User's Manual	44
5 BIOS SETUP	45
5.1 ENTER BIOS	45
5.2 THE MAIN MENU	46
STANDARD CMOS FEATURES	48
ADVANCED BIOS FEATURES	51
ADVANCED CHIPSET FEATURES	55
INTEGRATED PERIPHERALS	58
POWER MANAGEMENT SETUP	62
PNP/PCI CONFIGURATION	65
PC HEALTH STATUS	67
LOAD FAIL-SAFE DEFAULTS.....	69
LOAD OPTIMIZED DEFAULTS	69

SET PASSWORD	70
SAVE & EXIT SETUP	71
EXIT WITHOUT SAVING	71

WHAT'S IN THE MANUAL

Quick Reference

Hardware Installation >> Step-by-Step	Page 11
Jumper Settings >> A Closer Look	Page 23
Drivers/Software Utilities >> How to Install	Page 40
BIOS Setup >> How to Configure	Page 45

About This Manual

For First-Time DIY System Builder	Page 6
For Experienced DIY User	Page 6
For System Integrator	Page 6

1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the 3.1 Hardware Installation section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new Shuttle FN41 mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle FN41 mainboard. You will find that installing your new Shuttle FN41 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated FN41 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections 3.2 Jumper Settings and Chapter 4 Drivers/Software Utilities to find out how to get the best out of your new mainboard. Chapter 5 BIOS Setup also contains the relevant information on how to tune up your system to achieve higher performance.

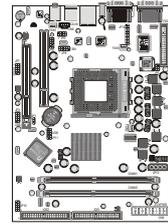
System Integrator

You have wisely chosen Shuttle FN41 to construct your system. Shuttle FN41 incorporates all the state-of-the-art technology of the nforce Crush18G chipset . It integrates the most advanced functions you can find to date in a compact Flex ATX board.

1.2 Item Checklist

Check all items with you FN41 mainboard to make sure nothing is missing.
The complete package should include:

- * One piece of Shuttle FN41 Mainboard



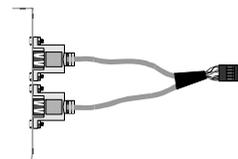
- * One piece of ATA100/66 Ribbon Cable



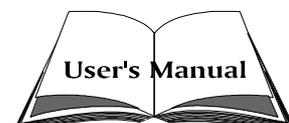
- * One piece of Floppy Ribbon Cable



- * One piece of twin ports USB Cable (optional)



- * FN41 User's Manual



- * One piece of Bundled CD-ROM with containing:
 - FN41 user's manual saved in PDF format
 - nVidia nForce Chipset driver
 - Nvidia VGA driver
 - Nvidia USB2.0 driver (For WinXP)
 - Award Flashing Utility



2 FEATURES

FN41 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

* CPU Support

Support Socket462 package CPU.

AMD AthlonXP/Athlon/Duron Processor with 200/266/333 MHz FSB.

* Chipset

Features nforce Crush18G N.B. and MCP2 S.B..

Onboard Lan

Realtek 8201BL, support 10Mb/s and 100Mb/s operation.

Onboard 1394

Realtek 8801, support 400Mb/s, 200Mb/s, 100Mb/s data transfer rate.

Onboard Audio

Realtek ALC 650, 18-bit ADC and DAC resolution.

* Jumperless CPU Configuration

Soft-configuration FSB (The FSB speed is software configurable from 100MHz to 166MHz in the Advanced Chipset Features of BIOS setup program.)

* On Board Graphical Controller

The Crush18G IGP Host Controller integrates a high performance and high quality 3D/2D Graphical Accelerator.

- Integrated Geforce4 MX GPU
- Built-in a high performance and high quality 256-bit 3D/2D graphic accelerator.
- nView dual-display architecture supporting desktop VGA monitor; DVI display or TV set.
- Dual CRTc/simultaneous Dual Display.
- Integrated dual 300 MHz palette-DACs for analog VGA monitors up to 1920x1440.

* Versatile Memory Support

Integrated 128bit TWm Bank memory controller.

Two 184-pin DIMM slots to support up to 2GB of DDR200, DDR266, DDR333, DDR400 compliant DDR SDRAM module.

* Expansion Slots

Provides one 3.0 compliant AGP slot and one 32-bit PCI slots.

* 6 USB Interface Onboard

- 2 USB connectors on back-panel and two sets of dual USB ports headers on mid-board.

* I/O Interface

Provides a variety of I/O interfaces:

- 1 Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.
- 1 Composite TV-Out connector.
- 2 VGA Ports.
- 2 IEEE1394a Ports.
- 1 RJ45 LAN connector.
- 1 PS/2 Mouse connector.
- 1 PS/2 Keyboard connector.
- 1 Line-Out (Front-Out) port.
- 1 Rear out.
- 1 Bass/Center-Out port.
- 2 USB2.0 Ports

* PCI Bus Master IDE Controller Onboard

Two Ultra DMA 133 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to 133/100/66/33 MB/sec and also supports Enhanced PIO Modes.

80-pin Cable Backward Compatible Legacy ATAPI Devices, ATAPI IDE CD-ROM, CD-R, CD-RW, and LS-120 Supports.

* ATX Power Supply Connector

ATX power supply unit can connected to the onboard 20-pin standard ATX power connectors, supporting Suspend and Soft-On/Off by dual-function power button.

The Pentium 4 ATX power include other 4-pin + 12V ATX power connector.

* **Advanced Configuration and Power Interface**

Features four power saving modes: S1 (Snoop), S3 (Suspend to RAM), S4 (Suspend to DISK), and S5 (Soft-Off). ACPI provides more efficient Energy Saving Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

* **System BIOS**

Provides licensed Award BIOS V6.0 PG on 2Mb Flash core and supports Green PC, Desktop Management Interface (DMI).

* **ATX Form Factor**

System board conforms to Shuttle form factor ATX specification.

Board dimension: 254mm X185mm.

* **Advanced Features**

- Low EMI - Built in spread spectrum and automatic clock shut-off of unused PCI/SDRAMS slots to reduce EMI.
- Dual Function Power Button - The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters Soft-Off mode.
- Modem Ring Power-On - The system can be powered on automatically by the activation of modem ringing.
- CPU Host/SDRAM - This item allows users to adjust CPU Host Clock, and SDRAM in BIOS.

* **Intelligent Features**

- Voltage Monitoring - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current passing through mainboard components.
- Fan Status Monitoring - To prevent CPU from overheating, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)
- Temperature Monitoring - This item allows users to make sure whether the CPU or system runs in a suitable temperature.

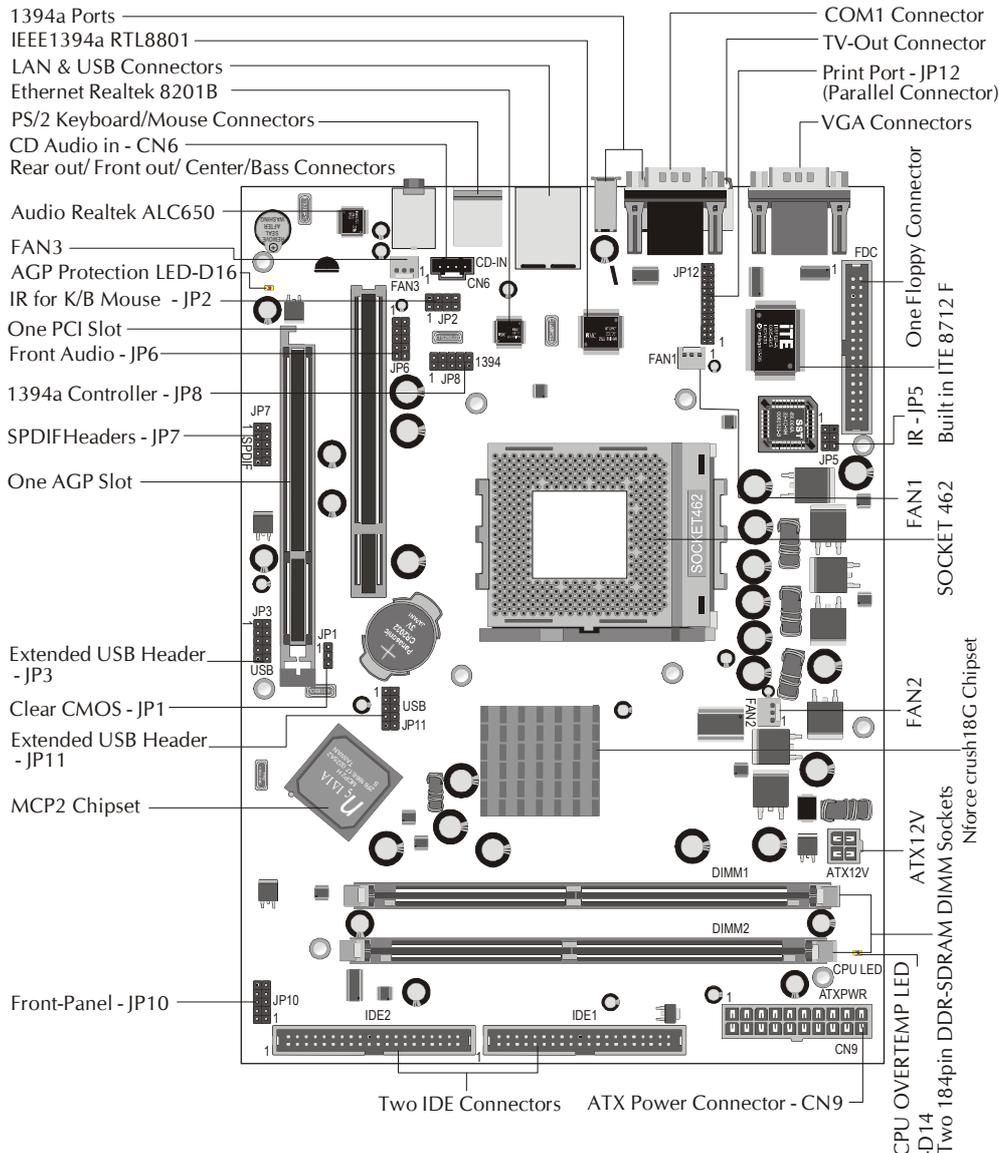
3 HARDWARE INSTALLATION

Before removing or installing any of these devices including CPU, DIMMs, Add-On Cards, Cables, please make sure to unplug the onboard power connector.

This section outlines how to install and configure your mainboard. Refer to the following mainboard layout to help you to identify various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

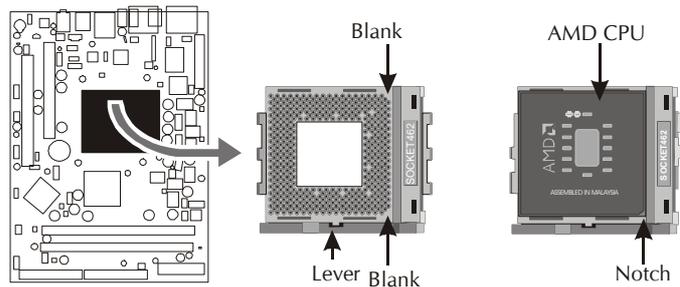
Accessories Of FN41



Step 1

Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory slots).
2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, and then bring it to an upwardly vertical position.
3. Place your AMD 462 AthlonXP/Athlon/Duron processor in the socket A. Note that the CPU's edges have been purposely designed non-symmetrically to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the two blunt-edged corners should face towards the socket-lever.



4. Slightly push the AMD 462 AthlonXP/Athlon/Duron processor into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.
5. The AMD 462 AthlonXP/Athlon/Duron processor requires a set of heatsink/fan to ensure proper cooling of the processor. If heatsink/fan have not been already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit. Please refer to the following diagram.

Step 2.

Set Jumpers

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as any of the following cases:

Clear CMOS

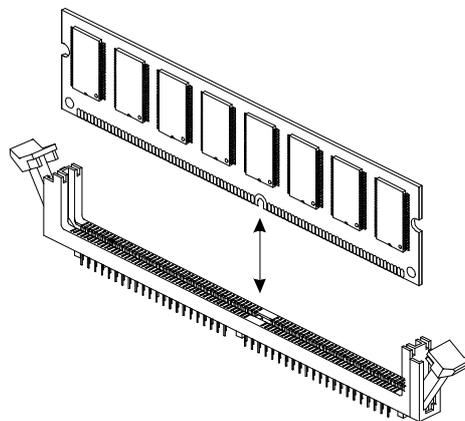
For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with the mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section 3.2 Jumper Settings will provide detailed information on how to configure your mainboard manually.

Step 3

Install DDR SDRAM System Memory

To install memory, insert DDR SDRAM memory module(s) in DIMM slot(s). Note that DDR SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM slots, lift the clips of both sides of the DIMM slot to lock the module in place.

DDR SDRAM



Step 4

Install Internal Peripherals in System Case

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE/HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

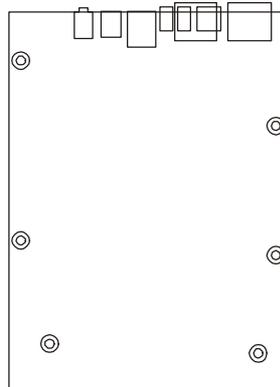
To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM, have to set jumpers to Master or Slave mode depending on whether you install more than one device of each kind.)
2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices to the corresponding headers on board. Note that the cable should be oriented with its colored stripe (usually red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable from your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose correct mounting holes, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



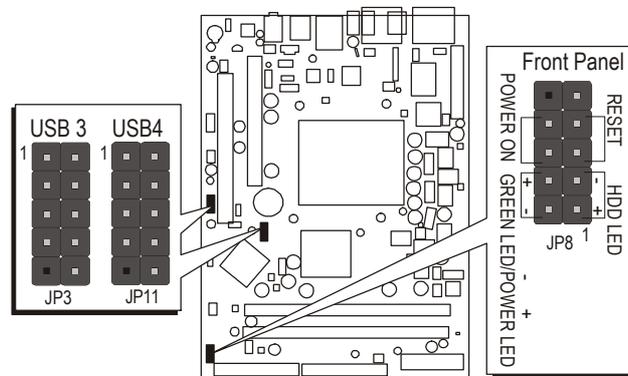
2. After deciding on the proper mounting holes, position the studs between the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

Note: In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and then fix the mainboard. If there aren't enough matching holes, then make sure to install at least 4 mounting studs to ensure proper attachment of the mainboard.

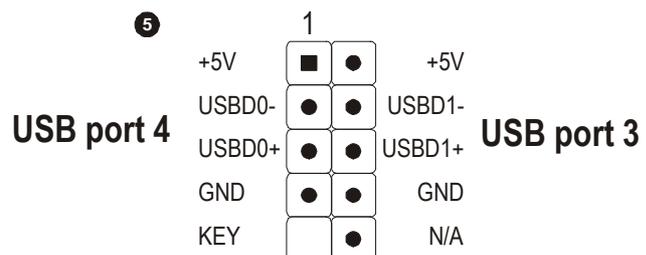
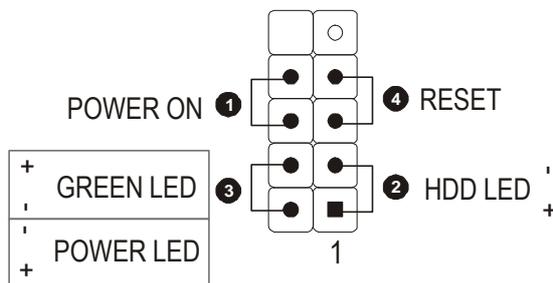
Step 6

Connect Front Panel Switches/LEDs/Speaker/USB

You can find there are several different cables already existing in the system case and originating from the computer's Front-panel devices (HDD LED, Power LED, Reset Switch, or USB devices etc.) These cables serve to connect the front-panel switches, LEDs, and USB connectors to the mainboard's front-panel connectors group (JP3, JP11, and JP8), as shown below.



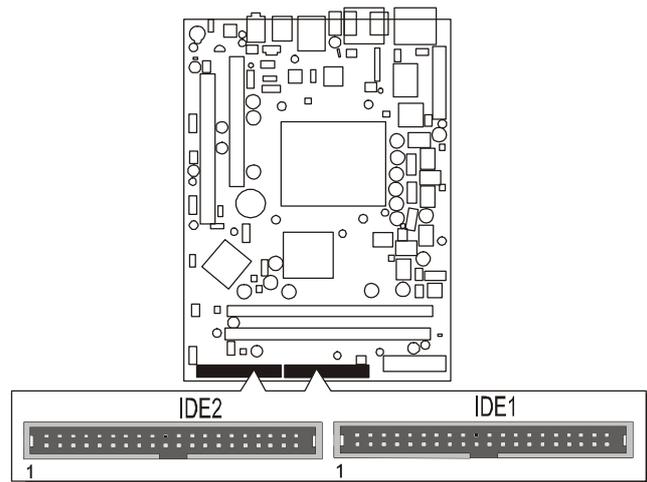
1. ATX Soft Power On/Off (POWER ON)
2. HDD-LED (HDD LED)
3. Green-LED and Power-LED (GREEN LED/POWER LED)
4. Hardware Reset Switch Button (RESET)
5. Extended USB Header



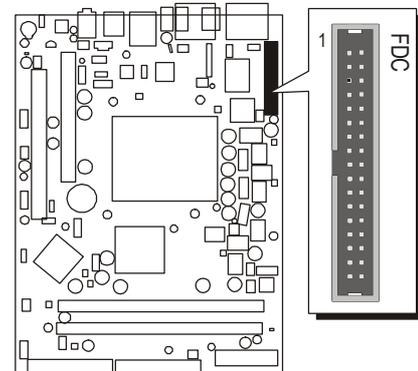
Step 7

Connect IDE and Floppy Disk Drives

1. IDE cable connector



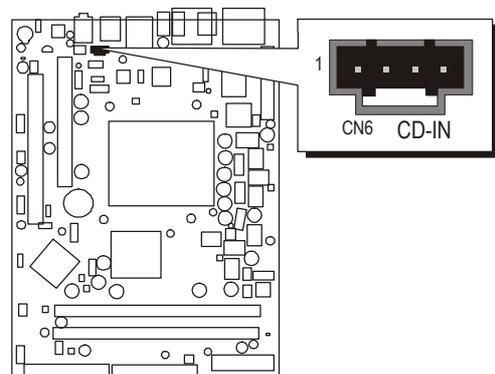
2. Floppy cable connector



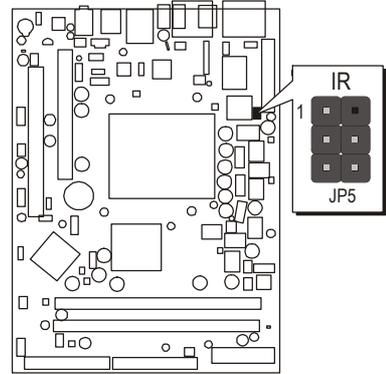
Step 8

Connect Other Internal Peripherals

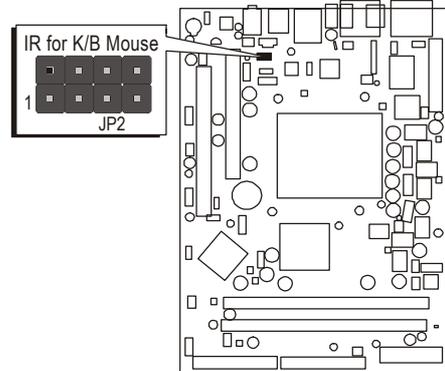
1. CD-IN connector (CN6)



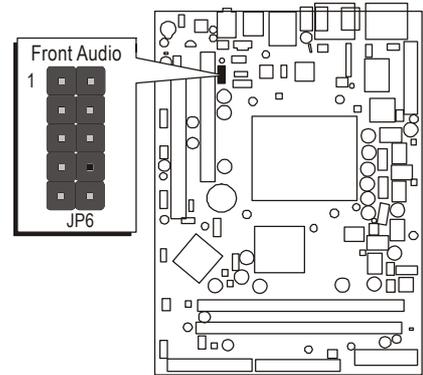
2. IR header (JP5)



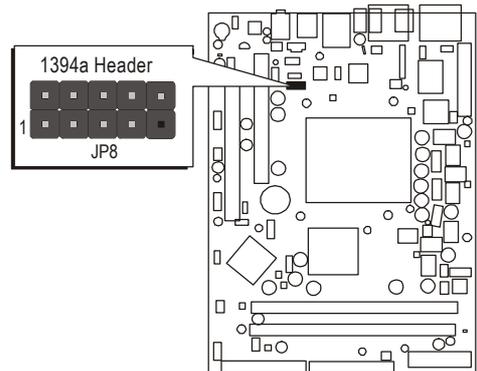
3. IR for K/B Mouse (JP2)



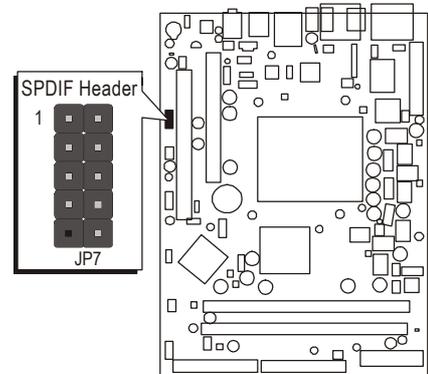
4. Front Audio (JP6)



5. 1394a Controller (JP8)



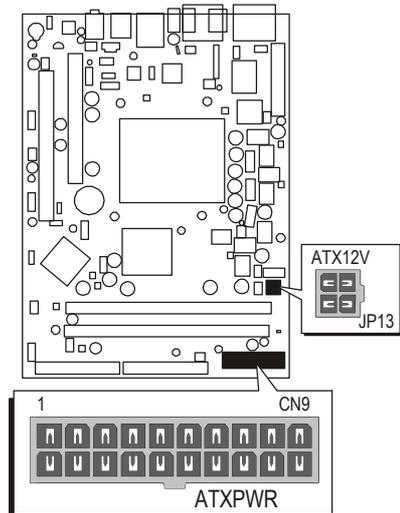
7. SPDIF Header (JP7)



Step 9

Connect the Power Supply

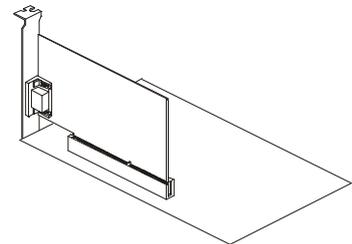
1. System power connector (CN9/JP13)



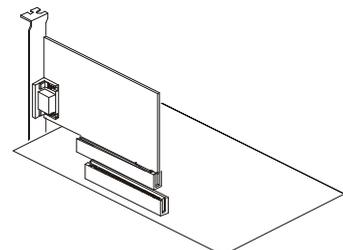
Step 10

Install Add-on Cards in Expansion Slots

1. PCI Card



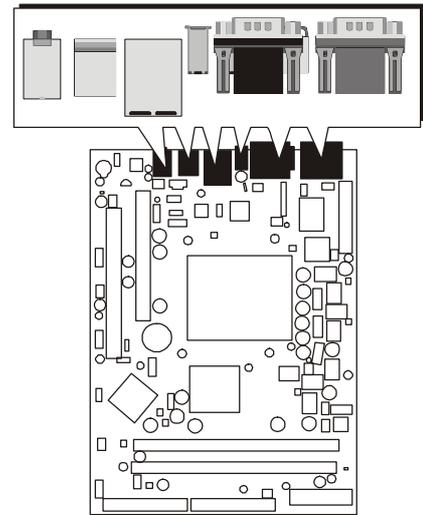
2. AGP Card



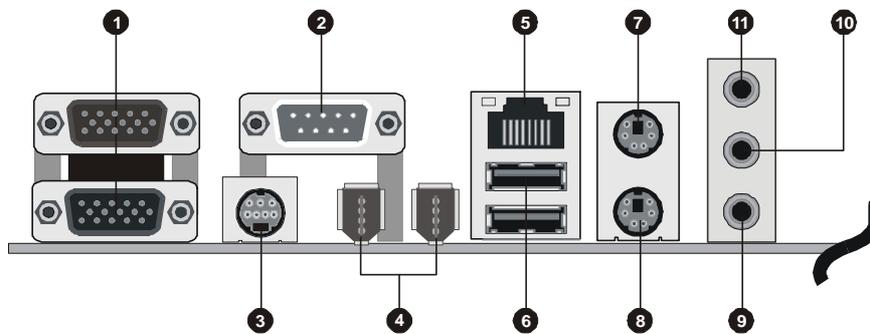
Step 11

Connect External Peripherals to Back-Panel

You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.



1. VGA PortS
2. COM1 Port
3. TV-Out Connector
4. 1394a Ports
5. LAN Port
6. USB1/2 Ports
7. PS/2 Mouse
8. PS/2 Keyboard
9. Audio Line-Out (Front-Out) Port
10. Audio Rear-Out Port
11. Audio Bass/Center-Out Port



Step 12

First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partitions to occupy all the space available to the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

Note: DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only install your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the `FORMAT C: /S` command.

Note: `FORMAT C: /S` can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

Step 13

Install Drivers & Software Components

Please note that all the system utilities and drivers are designed for Win 9x/2000/ME/XP/NT operating systems only. Make sure your operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the FN41 bundled CD-ROM into your CD-ROM drive. The autorun program will display the drivers main installation window on screen.
2. Choose "Install Nvidia Chipset Driver" and complete it.
3. Choose "Install VGA Device Driver" and complete it. (Only for Win9X, WinMe, and Win2K)
4. Choose "Install Nvidia USB2.0 Driver" and complete it. (For WinXP)
5. Exit from the autorun drivers installation program.

⊗ Please refer to section Chapter 4 Software Utility to install driver.

3.2 Jumper Settings

Several hardware settings are made through the use of mini jumpers to connect jumper pins on the mainboard. Pin #1 could be located at any corner of each jumper, you just find the location with a white right angle which stands for pin 1#. There are several types of pin 1# shown as below:

3-pin and multi (> 3) pin jumpers shown as following:

Pin #1 to the left:



Pin #1 on the top:



Pin #1 to the right:



Pin #1 on the bottom:



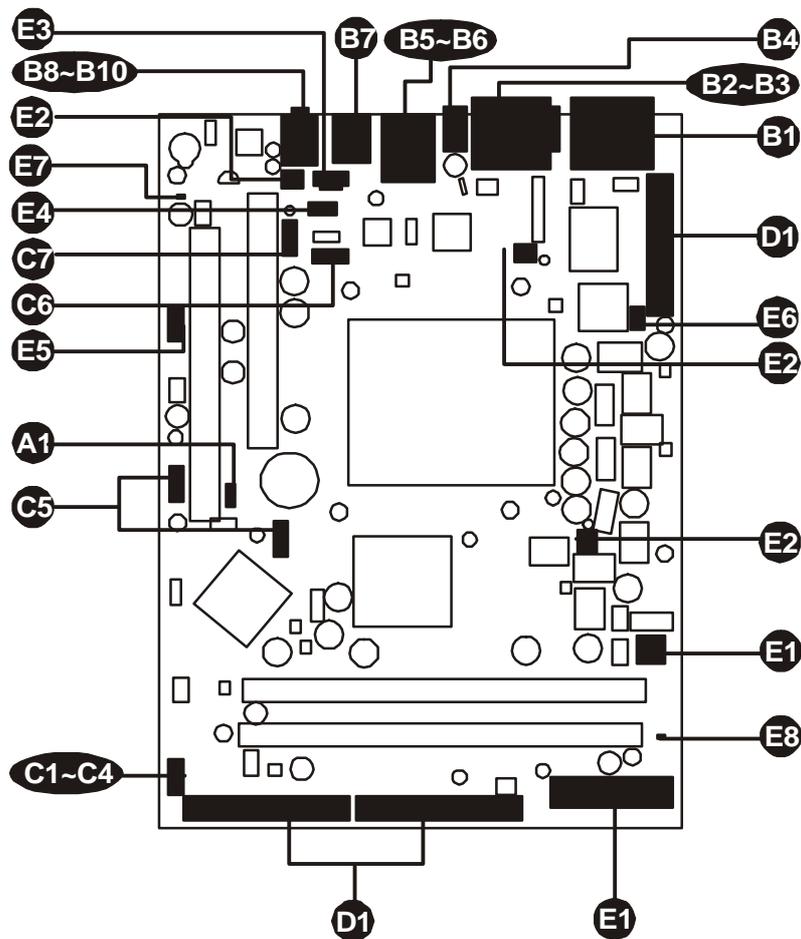
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To Short jumper pins, simply place a plastic mini jumpers over the desired pair of pins.

Caution!

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on top of its original packaging film, on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

Jumpers & Connectors Guide

Use the mainboard layout on page 11 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during the installation. The following list will help you to identify jumpers, slots, and connectors along with their assigned functions:



CPU/Memory/Expansion Slots

- | | |
|------------|--|
| Socket 462 | : CPU Socket for AMD AthlonXP/Althlon/Duron and Duron processors. |
| DIMM1/2 | : Two 184-pin DIMM Slots for 64, 128, 256, 512 MB, and 1GB of 2.5V DDR SDRAM
(The total installed memory does not exceed 2GB) |
| PCI | : One 32-bit PCI Expansion Slot |
| AGP | : One AGP Slot 4X/8X Slot |

Jumpers

- Ⓐ1 JP1 : Clear CMOS setting

Back Panel Connectors

- Ⓑ1 VGA : 2 VGA ports (DB15 female)
Ⓑ2 COM1 : serial port
Ⓑ3 TV-Out : TV-Out Port
Ⓑ4 1394a : 2 x1394a (1/2) Ports
Ⓑ5 LAN : LAN Port
Ⓑ6 USB : 2 USB (1/2) (Universal Serial Bus) ports
Ⓑ7 MS : PS/2 mouse port
Ⓑ7 KB : PS/2 keyboard port
Ⓑ8 BASS/CENTER : Audio Bass/Center-Out Port
Ⓑ9 LINE-OUT : Audio Line-Out (Front-Out) Port
Ⓑ10 Rear-OUT : Rear-Out Port

Front Panel Connectors

- Ⓒ1 POWER ON : ATX power on/off momentary type switch
Ⓒ2 HDD LED : IDE drive active LED
Ⓒ3 GREEN LED/POWER LED : Green LED (ON when system stays in power saving mode)/System power LED
Ⓒ4 RESET : Hardware reset switch
Ⓒ5 USB3/4 : Extended USB Headers (JP3/JP11)
Ⓒ6 JP8 : Front-Panel 1394a header
Ⓒ7 JP6 : Front Audio connector

Internal Peripherals Connectors

- Ⓓ1 FDC : Floppy disk drive interface
Ⓓ1 IDE1 : IDE primary interface (Dual-channel)
Ⓓ1 IDE2 : IDE secondary interface (Dual-channel)

Other Connectors

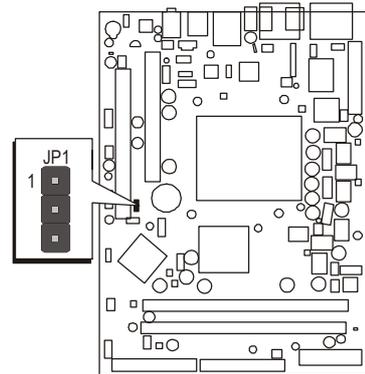
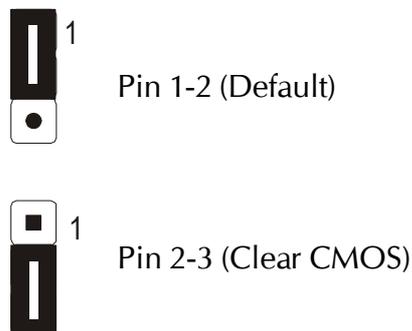
- Ⓔ1 CN9/JP13 : ATX power connectors
Ⓔ2 FAN1 : CPU fan connector
Ⓔ2 FAN2 : Chipset fan connector

Ⓔ	FAN3	: System fan connector
Ⓕ	CN6	: Audio CD_IN connector
Ⓖ	JP2	: IR for Keyboard and Mouse connector
Ⓗ	JP7	: SPDIF header
Ⓘ	JP5	: IR header
Ⓛ	D16	: AGP Protection LED
Ⓜ	D14	: CPU OVERTEMPERATURE LED

Jumpers

A1 Clear CMOS Setting (JP1)

JP1 is used to clear CMOS data. Clearing CMOS will result in the permanently erasing previous system configuration settings and the restoring original (factory-set) system settings.

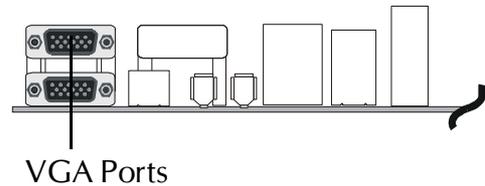


- Step 1. Turn off the system power (PC-> Off).
- Step 2. Remove ATX Power cable from ATX Power connector.
- Step 3. Remove jumper cap from JP1 pins 1-2.
- Step 4. Place the jumper cap on JP1 pin 2-3 for a few seconds.
- Step 5. Return the jumper cap to pin 1-2.
- Step 6. Plug ATX Power cable into ATX Power connector.
- Step 7. Turn on the system power (PC-> On).

☞ **Back-Panel Connectors**

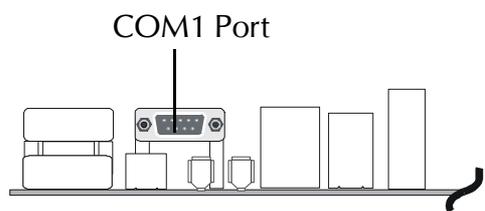
B1 VGA Connectors

Two 15-pin VGA connectors are located at the rear panel of the mainboard.



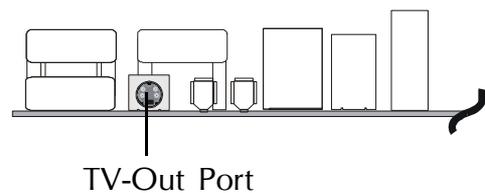
B2 COM1 Port Connector

This mainboard can accommodate one serial device on COM1. Attach a serial device cable to the DB9 serial port COM1 at the back-panel of your computer.



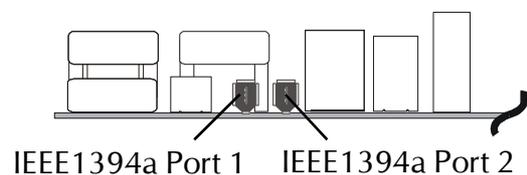
B3 TV-Out Connectors

This mainboard can accommodate AV and S Video ports on back-panel.



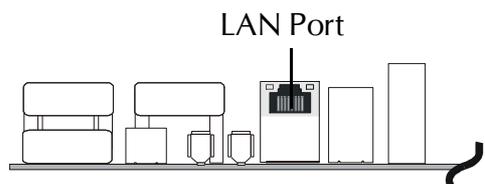
B4 IEEE 1394a Port Connectors

This mainboard offers two 1394a ports on back-panel. Plug each device jack into an available 1394a connector.



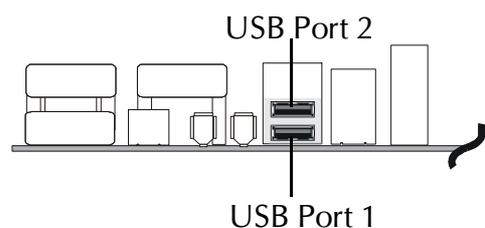
B5 LAN Port Connector

This mainboard can accommodate one device on LAN. Attach a RJ45 cable to the LAN port at the back-panel of your computer.



B6 USB Port 1/2 Connectors

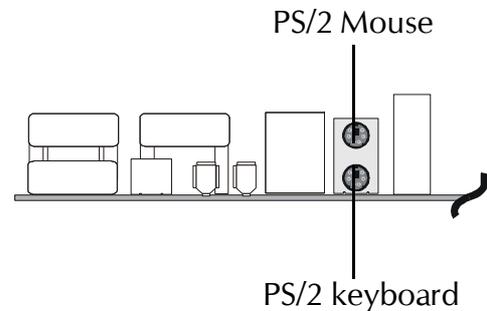
Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.



B7 PS/2 Keyboard & PS/2 Mouse Connectors

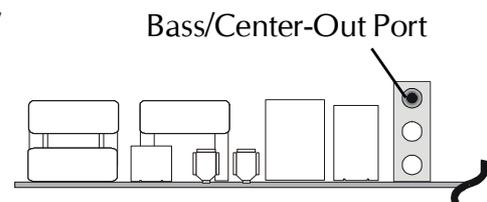
Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of the mainboard.

Depending on the computer housing you use (desktop or tower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a tower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard's. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.



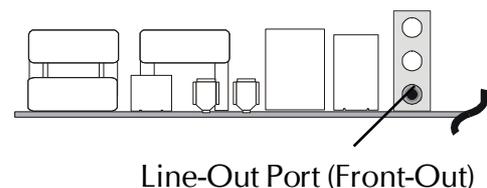
B8 Bass/Center-Out Port Connector

Bass/Center-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to bass/center amplified speakers.



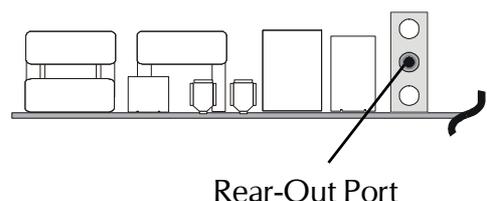
B9 Line-Out (Front-Out) Port Connector

Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.



B10 Rear-Out Port Connector

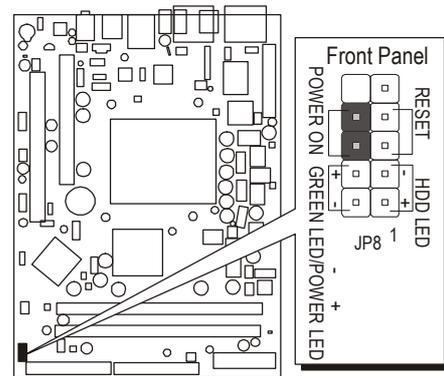
Stereo out of rear (surround) channel.



☞ **Front-Panel Connectors**

① **ATX Power On/Off Switch Connector (POWER ON)**

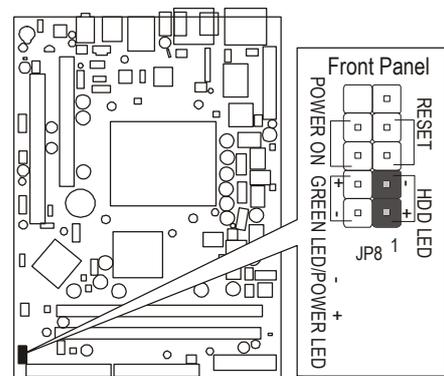
The Power On/Off Switch is a momentary type switch used for turning on or off the system ATX power supply. Attach the connector cable from the Power Switch to the 2-pin (POWER ON) header on the mainboard.



Note : Please notice all the LED connectors are directional. If your chassis's LED does not light up during running, please simply change to the opposite direction.

② **HDD LED Connector (HDD LED)**

Attach the connector cable from the IDE device LED to the 2-pin (HDD LED) header. The HDD LED lights up whenever an IDE device is active.



③ Green LED / Power LED Connector (GREEN LED/POWER LED)

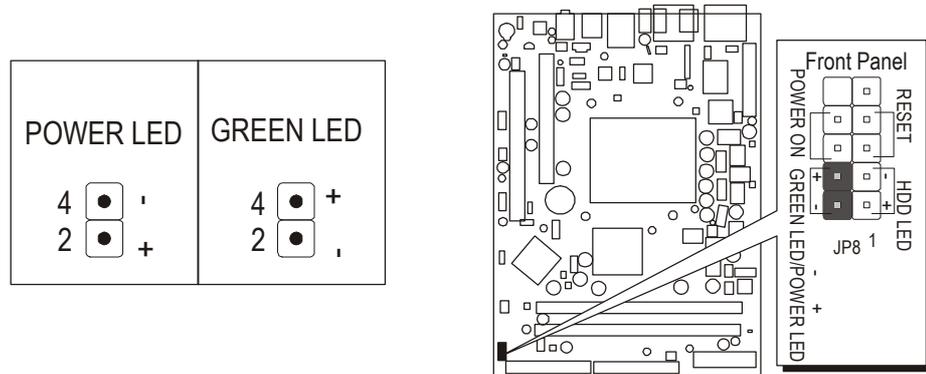
This header is dual color LED function.

Dual color LED function is defined by either Power LED or Green LED, the header can be in these states.

The Green LED indicates that the system is currently in one of the power saving mode (Doze/Standby/Suspend). When the system resumes to normal operation mode, the Green LED will go off, power LED on.

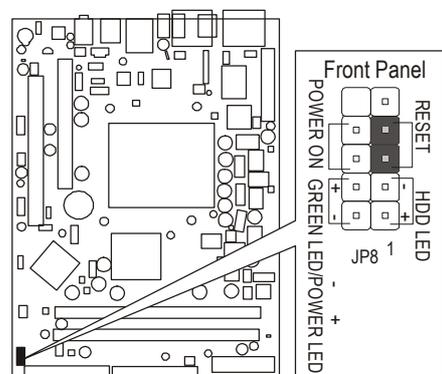
This Power LED will go off during power saving mode.

Attach a 2-pin Green LED/Power LED cable to (GREEN LED/POWER LED) header.



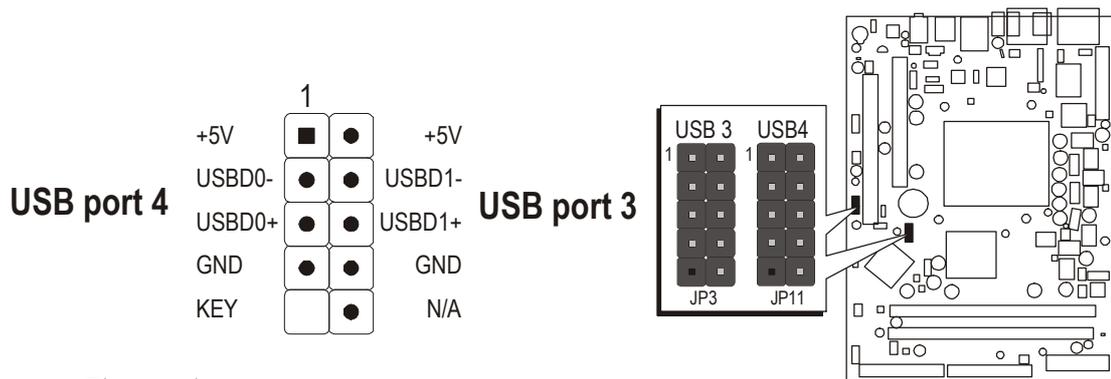
④ Hardware Reset Connector (RESET)

Attach the 2-pin hardware reset switch cable to the (RESET) header. Pressing the reset switch causes the system to restart.



⑤ Extended USB Header (JP3/JP11)

The headers are used to connect the cable attached to USB connectors which are mounted on front panel or back panel. But the USB cable is optional at the time of purchase.

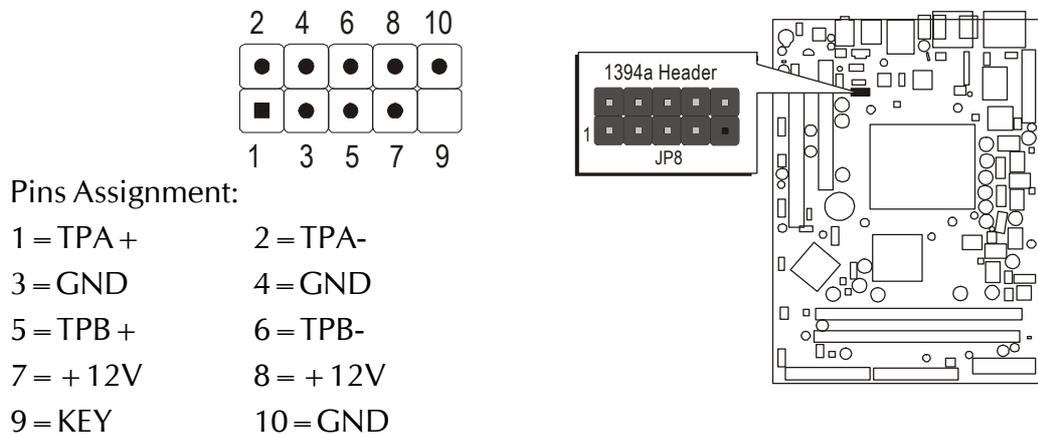


Pins Assignment:

1 = +5V	3 = USBD0-	5 = USBD0 +
7 = GND	9 = KEY	
2 = +5V	4 = USBD1-	6 = USBD1 +
8 = GND	10 = N/A	

⑥ Front-Panel 1394a Header (JP8)

The header are used to connect the cable attached to 1394a connector which are mounted on front panel or back panel. But the 1394a cable is optional at the time of purchase.

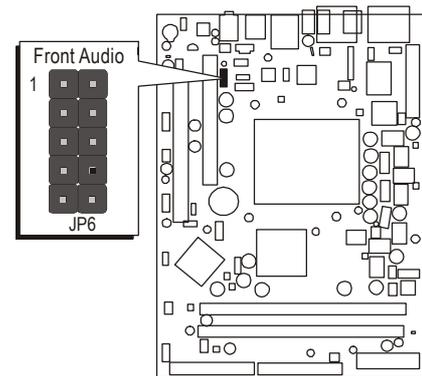
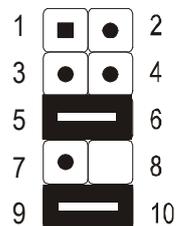


Pins Assignment:

1 = TPA +	2 = TPA-
3 = GND	4 = GND
5 = TPB +	6 = TPB-
7 = +12V	8 = +12V
9 = KEY	10 = GND

⑦ Front Audio Header (JP6)

This header allows users to install auxiliary front-oriented microphone and line-out ports for easier access. Either the Line-out connector on back-panel or JP4 header are available at the same time. If you would like to use this JP4 header on front-panel, please remove all jumpers from JP4 and install your special Extra Mic / Line-out cable instead.



Two mini jumpers must be setted on pin5-6 and pin 9-10, when this header is not used.

Pins Assignment:

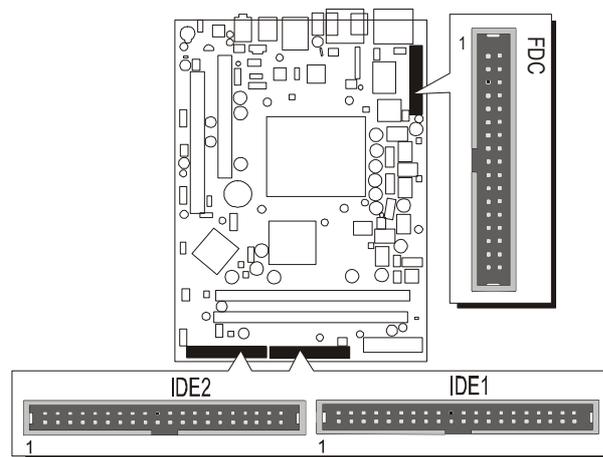
1 = AUD_MIC	2 = AUD_GND
3 = AUD_MIC_VCC	4 = LINE_IN_R
5 = AUD_FRONT_R	6 = AUD_RET_R
7 = LINE_IN_L	8 = KEY
9 = AUD_FRONT_L	10 = AUD_RET_L

☞ **Internal Peripherals Connectors**

① Enhanced IDE and Floppy Connectors

The mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.).

This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 80-pin ATA 133/100/66/33 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.

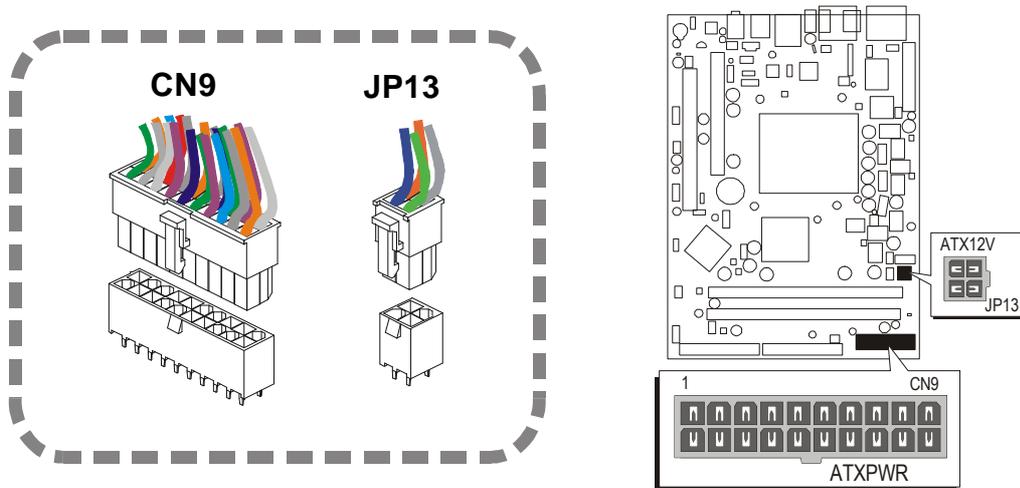


Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

☞ **Other Connectors**

ⓔ ATX Power Supply Connectors (CN9 and JP13)

This motherboard uses 20-pin (CN9) Pentium 4 standard ATX power header, and other JP13 with 2X2-pin + 12V PC ATX power supply headers. Please make sure you plug in the right direction.

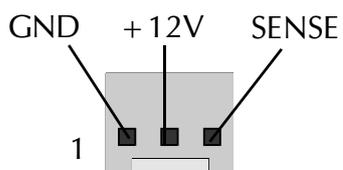


Note: This motherboard can't support AC power resumes from power failure, you must press power button to power-on.

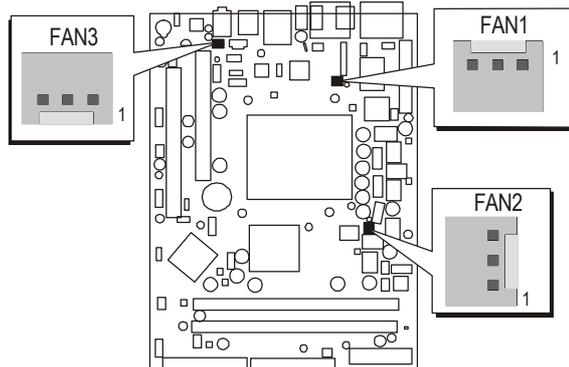
- Note 1: The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.
- Note 2: Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.
- Note 3: Your ATX power supply must be supplied to ACPI + 5V standby power and at least 720mA compatible.
- Note 4: Make sure your power supply have enough power for higher speed processor installed.

② CPU and System Fan Connectors - FAN1/2/3

The mainboard provides four onboard 12V cooling fan power connectors to support CPU (FAN3), Chipset (FAN2), or System (FAN1) cooling fans.



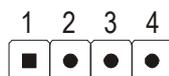
FAN1/2/3 with rotate sense.



Note: Both cable wiring and type of plug may vary, which depends on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

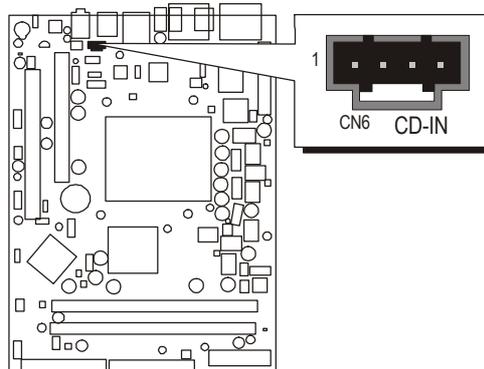
③ Audio CD_IN Connector (CN6) (Black)

Port CN6 is used to attach an audio connector cable from the CD-ROM drive.



Pin Assignments:

1 = CD-L 2 = CD-GND
3 = CD-GND 4 = CD-R

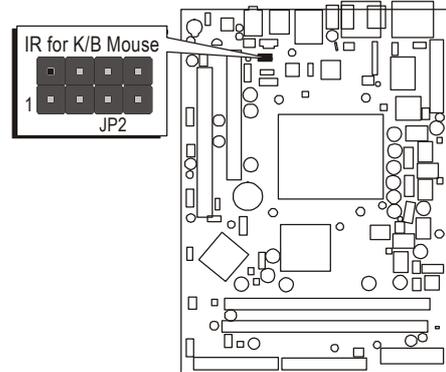
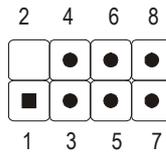


E4 IR for Keyboard and Mouse Connector (JP2)

Port JP2 can be used to connect wireless keyboard and mouse device.

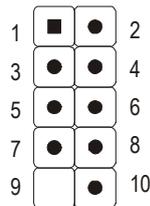
Pin Assignments:

1 = +5V	2 = KEY
3 = MS-DT	4 = KB-DT
5 = MS-CK	6 = KB-CK
7 = GND	8 = GND



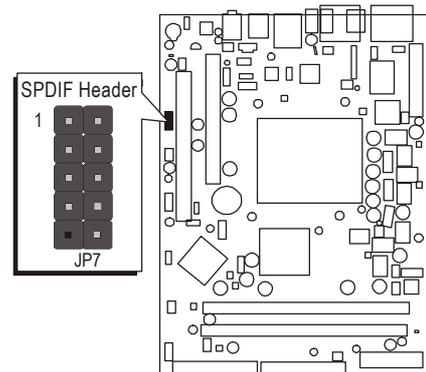
E5 SPDIF Headers (JP7)

Port JP7 can be used to connect special device.



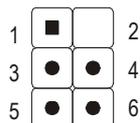
Pin Assignments:

1 = +12V	2 = +5V
3 = N/A	4 = SPDIF-OUT
5 = SPDIF-IN	6 = GND
7 = N/A	8 = N/A
9 = KEY	10 = GND



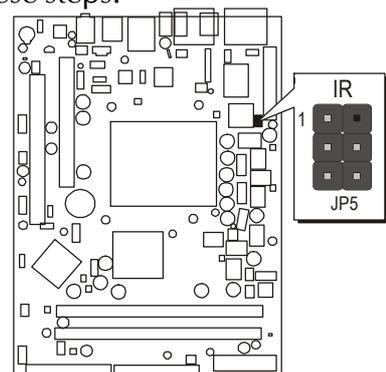
E6 IR Header (JP5)

If you have an Infrared device, this mainboard can implement IR transfer function. To enable the IR transfer function, follow these steps:



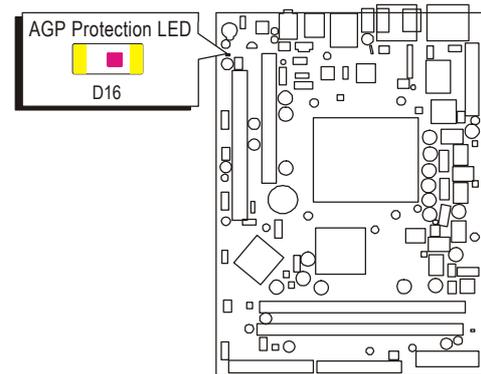
Pin Assignments:

1 = NC	2 = KEY
3 = +5V	4 = GND
5 = IRTX	6 = IRRX



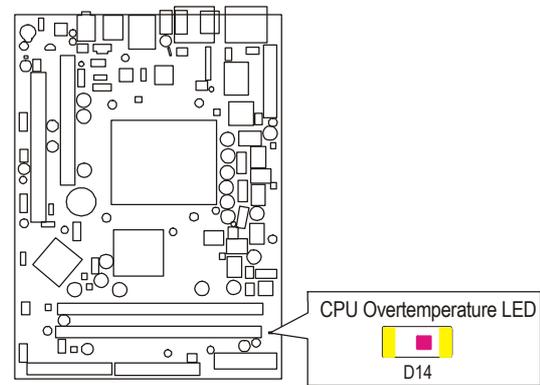
E7 AGP Protection LED (D16)

The mainboard provides one 1.5V AGP card which supports to 4X and 8X. If you plug the 3V AGP card on the mainboard, the AGP Protection LED will flash and you can't turn on the computer.



E8 CPU OVERTEMPATURE LED (D14)

When CPU temperture over 85°C, the system will cut off the power supply directly, and the CPU OVERTEMPATURE LED will flash. You must remove AC Power and check the CPU and heatsink are securely fastened well.



3.3 System Memory Configuration

The FN41 mainboard has two 184-pin DIMM slots that allow you to install from 64MB up to 2GB of system memory.

Each 184-pin DIMM (Dual In-line Memory Module) Slot can accommodate 64MB, 128MB, 256MB, 512MB, 1G of DDR200, DDR266, DDR333, and DDR400 compliant 2.5V single (1 Bank) or double (2 Bank) side 64-bit wide data path DDR SDRAM modules.

Install Memory:

Install memory in any or all of the slots and in any combination shown as follows.

DIMM Socket	Memory Modules	Module Quantity
DIMM 1	64MB, 128MB, 256MB, 512M , and 1G 184-pin 2.5V DDR SDRAM DIMM	x 1
DIMM 2	64MB, 128MB, 256MB, 512M , and 1G 184-pin 2.5V DDR SDRAM DIMM	x 1

Note: Maximum installed memory is 2GB.

Note: You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional DDR SDRAM modules in available DIMM slots. The total system memory is calculated by simply adding up the memory in all DIMM slots. After upgrade, the new system memory value will automatically be computed and displayed in the field "Standard CMOS Setup" of BIOS setup program.

4 SOFTWARE UTILITY

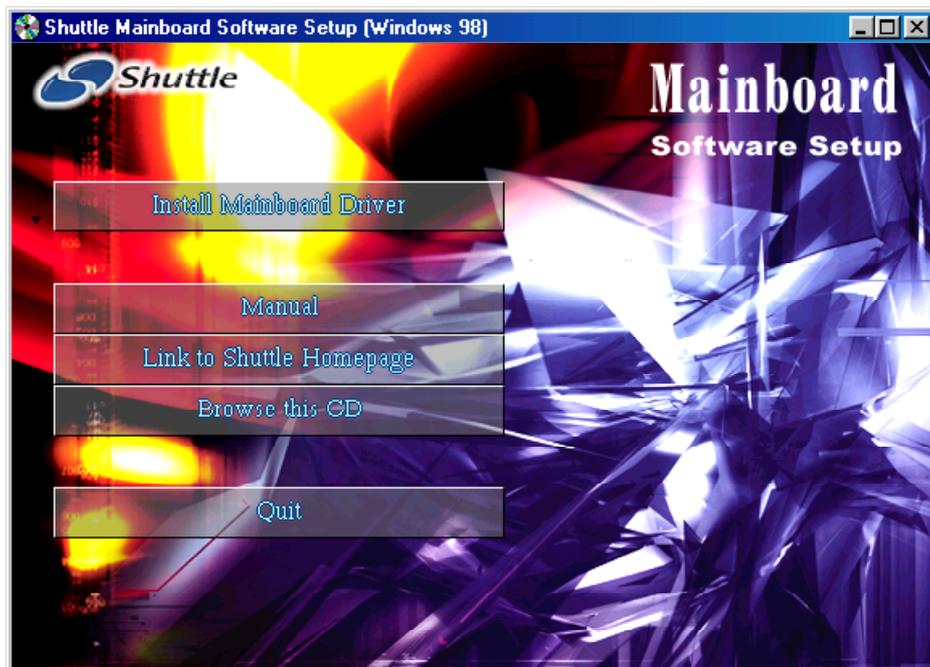
4.1 Mainboard CD Overview

Note: The CD contents attached in FN41 mainboard are subject to change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

Navigation Bar Description:

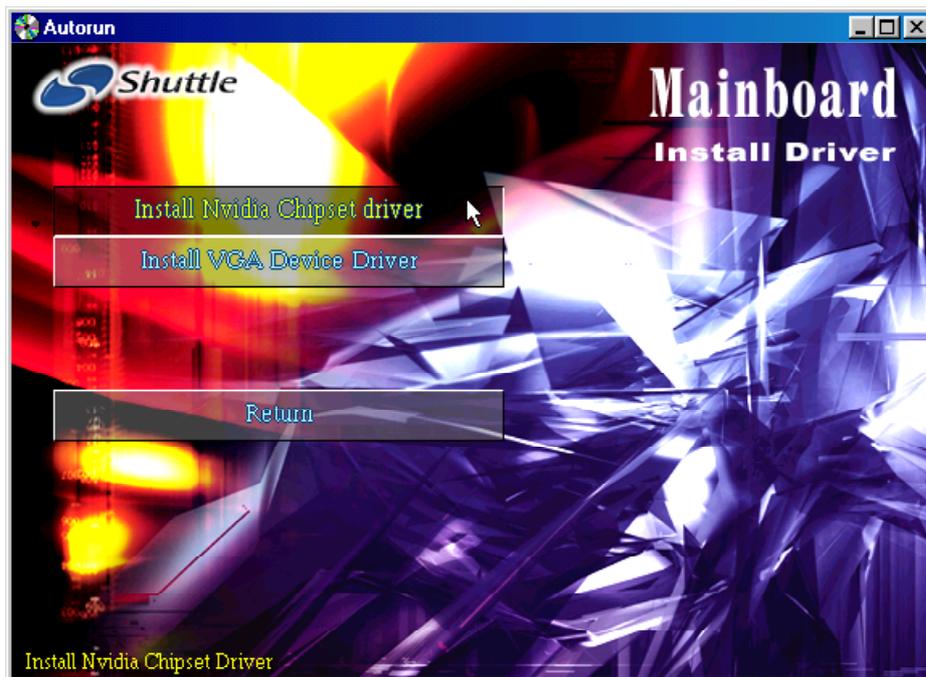
- ☞ Install Mainboard Software - Installing Nvidia chipset, VGA, USB2.0 driver.
- ☞ Manual - FN41 Series mainboard user's manual in PDF format.
- ☞ Link to Shuttle Homepage - Link to shuttle website homepage.
- ☞ Browse this CD - Allows you to see contents of this CD.
- ☞ Quit - Close this CD.



4.2 Install Nvidia Chipset Driver

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

Select using your pointing device (e.g. mouse) on the "Install Nvidia Chipset Driver" bar to install Nvidia chipset driver.



Once you made your selection, a Setup window run the installation automatically.

When the copying files is done, make sure you reboot the system to take the installation effect.

4.3 Install VGA Driver (Only for Win9X, WinMe, and Win2K)

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

Select using your pointing device (e.g. mouse) on the "Install VGA Device Driver" bar to install VGA driver.



Once you made your selection, a Setup window run the installation automatically.

When the copying files is done, make sure you reboot the system to take the installation effect.

4.4 Install USB2.0 Driver (Only for WinXP)

Select using your pointing device (e.g. mouse) on the "Install USB2.0 Driver" bar to install USB driver.



Once you made your selection, a Setup window run the installation automatically.

When the copying files is done, make sure you reboot the system to take the installation effect.

Note: To install USB2.0 driver in WinXP,you must follow the steps list below.

Step 1:

Please go to "Windows Update" (<http://windowsupdate.microsoft.com>) to Install Microsoft USB 2.0 Host Controller Driver or Windows XP Service Pack1.

Step 2:

Open Device Manager and open the properties for the USB 2.0 host controller. Then Click 'Refresh' button and you will see the USB2.0 driver is install already.

4.5 View the User's Manual

Insert the attached CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on AutoRun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

Select using your pointing device (e.g. mouse) on the "Manual" bar.



Then Online Information windows will appear on your screen. Click on the "Install Acrobat Reader" bar if you need to install acrobat reader.



Then click on "FN41 Manual" bar to view user's manual.

5 BIOS SETUP

FN41 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

5.1 Enter the BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

- Step 1. Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.
- Step 2. Press key immediately, or at the following message:
Press DEL to enter SETUP, or simultaneously press <Ctrl>, <Alt>, <Esc> keys

Note 1. If you miss trains of words meationed in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer's front-panel. You may also reboot by simultaneously pressing the <Ctrl>, <Alt>, keys.

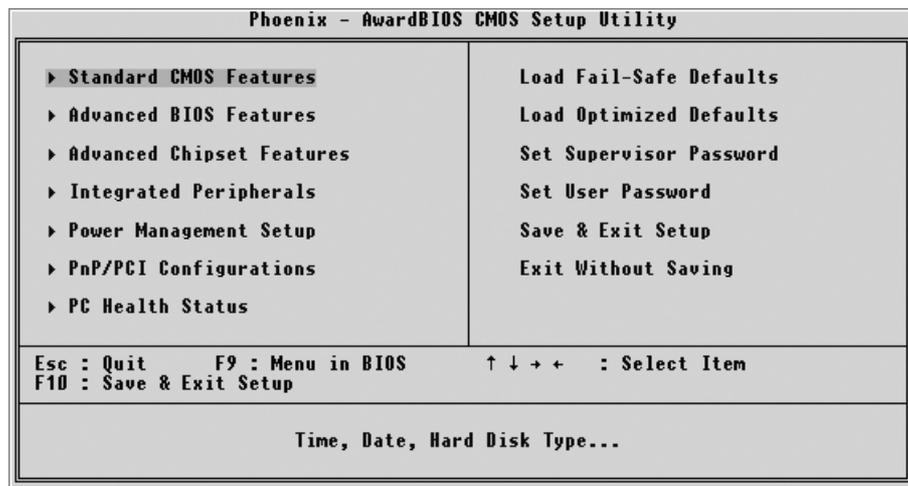
Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

“Press F1 to Continue, DEL to Enter Setup”

- Step 3. As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.

5.2 The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.



Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

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 the current system temperature, Voltage, and FAN speed.

Load Fail-Safe Defaults

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

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory-set for optimal performance system operation. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Set Password

Use this menu to change, set, or disable password. It allows you to limit access to the system and Setup, or only to Setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit from setup.

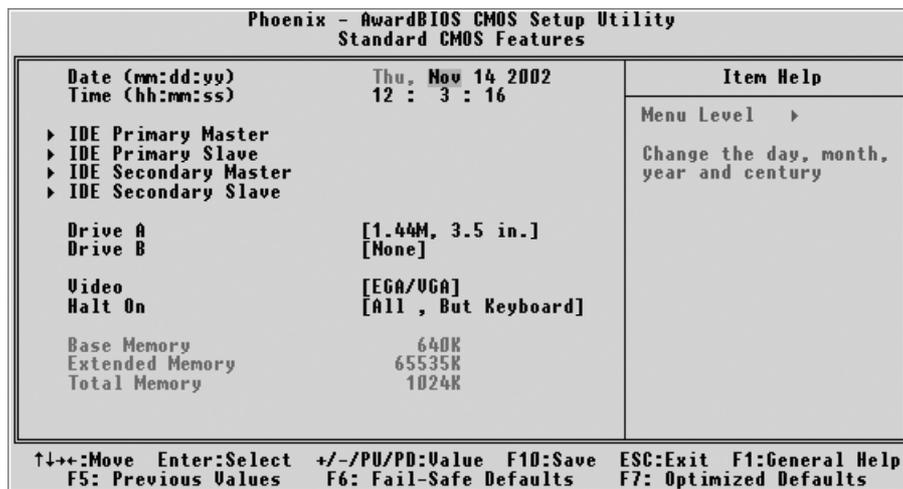
Exit Without Saving

Abandon all CMOS value changes and exit from setup.



Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 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.



Date

<Month> <DD> <YYYY>

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time

<HH : MM : SS>

The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Primary Master

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Primary Slave

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Secondary Master

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

IDE Secondary Slave

Options are in its sub menu.

Press <Enter> to enter the sub-menu of detailed options.

Drive A/Drive B

Select the type of floppy disk drive installed in your system.

- The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in.

Video

Select the default video device.

- The choice: EGA/VGA, CGA 40, CGA 80, or MONO.

Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

- The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key.

Base/Extended/Total Memory

These items are automatically detected by the system at start up time.

These are display-only fields. You can't make change to these fields.

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

IDE HDD Auto-Detection

Press <Enter> to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

- Press Enter

IDE Primary Master

Selecting 'manual' lets you set the remaining fields on this screen and select the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc., Note: PRECOMP = 65535 means

NONE!

- The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

- The choice: CHS, LBA, Large, or Auto.

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

- Auto-Display your disk drive size.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'

Cylinder

Set the number of cylinders for this hard disk.

- Min = 0, Max = 65535

Head

Set the number of read/write heads.

- Min = 0, Max = 255

Precomp

Warning: Setting a value of 65535 means no hard disk.

- Min = 0, Max = 65535

Landing zone

Set the Landing zone size.

- Min = 0, Max = 65535

Sector

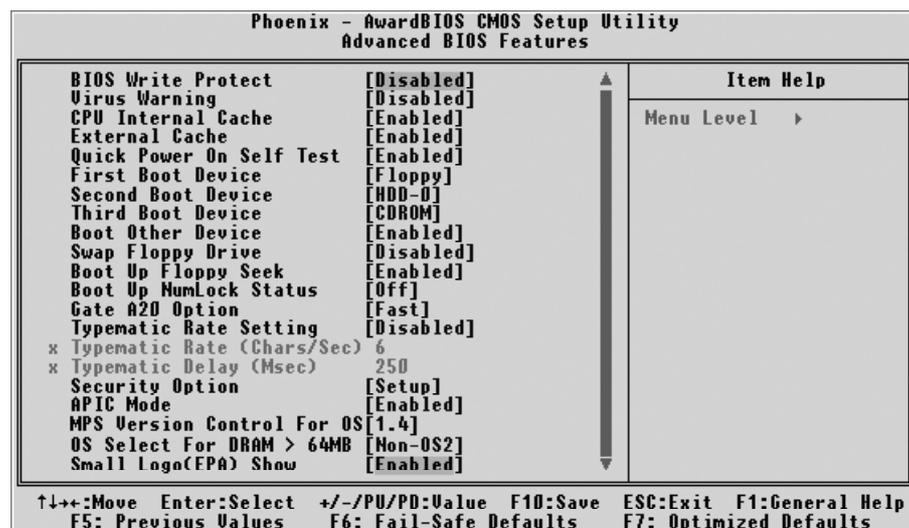
Number of sector per track.

- Min = 0, Max = 255



Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.



BIOS Write Protect

The item allows you to enable/disable the Bios Write Protect.

- The choice: Enabled or Disabled.

Virus Warning

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

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

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

- The choice: Enabled or Disabled.

CPU Internal Cache

All processors that can be installed in this mainboard use internal level 1 (L1) cache memory to improve performance. Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

External Cache

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

Quick Power On Self Test

This item speeds up Power-On Self Test (POST) after you power on the computer. If it is set to enabled, BIOS will shorten or skip some check items during POST.

- The choice: Enabled or Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

- The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.

- The choice: Enabled or Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignment.

- The choice: Enabled or Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot-Up. Disabling speed boots up.

- The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power-on state for NumLock.

- The choice: Off or On.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used for above 1MByte of address memory. Initially, the gate A20 was handled via a pin on the keyboard. Today, while a keyboard still provides this support, it is more common and much faster in setting to Fast for the system chipset to provide support for gate A20.

- The choice: Normal, or Fast.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When this controller enabled, the typematic rate and typematic delay can be selected.

- The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

This item sets how many times the keystroke will be repeated in a second when you hold the key down.

- The choice: 6, 8, 10, 12, 15, 20, 24, or 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

- The choice: 250, 500, 750, or 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

- | | |
|--------|--|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered promptly. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered promptly. |

- The choice: System or Setup.

Note: To disabled security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press <Enter > ; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

APIC Mode

Selects enable/disable IO APIC function

- The choice: Enabled or Disabled.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

- The choice: 1.1 or 1.4

OS Select For DRAM > 64MB

Selects the operating system that is running with greater than 64MB of RAM in the system.

- The choice: Non-OS2 or OS2.

Small Logo(EPA) Show

This item allows you to enable/disable the EPA Logo.

- The choice: Enabled or Disabled.



Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It states that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. If you discovered that data was being lost while using your system, you might consider making any changes.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
Advanced Chipset Features		
System Performance	[Optimal]	Menu Level ▶
FSB Frequency	[100 MHz]	
CPU Interface	[Optimal]	[Optimal] - Use the most stable settings.
Memory Frequency	[By SPD]	
Resulting Frequency		
Memory Timings	[Optimal]	[Aggressive/Turbo] - Use over clocked settings for higher performance but with higher risk of instability.
x T(RAS)	7	
x T(RCD)	1	
x T(RP)	1	
x CAS Latency	2.5	[Expert] - Allows full customization of performance options. Advanced users only.
FSB Spread Spectrum	[0.50 %]	
AGP Spread Spectrum	[0.50 %]	
Frame Buffer Size	[32M]	
AGP Aperture Size (MB)	[64M]	
AGP 8X Support	[Enabled]	
AGP Fast Write Capability	[Enabled]	
System BIOS Cacheable	[Disabled]	
Video RAM Cacheable	[Disabled]	
TU Mode Support	[NTSC-M]	

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

System Performance

[Optimal]-

Use the most stable settings.

[Aggressive/Turbo]-

Use over clocked settings for higher performance but with higher risk of instability.

[Expert]-

Allows full customization of performance options.

Advanced users only.

➤ The choice: Optional, Aggressive, Turbo, or Expert.

FSB Frequency

This item select FSB frequency.

➤ The Choice: 100MHz, 102MHz, 103MHz, 104MHz, 105MHz, 106MHz, 107MHz, 108MHz, 109MHz, 110MHz, 111MHz, 112MHz, 113MHz, 114MHz, 115MHz, 116MHz, 117MHz,

118MHz, 119MHz, 120MHz, 121MHz, 122MHz, 123MHz, 125MHz, 127MHz, 128MHz, 129MHz, 130MHz, 131MHz, 132MHz, 133MHz, 134MHz, 135MHz, 136MHz, 137MHz, 138MHz, 139MHz, 140MHz, 141MHz, 142MHz, 143MHz, 144MHz, 145MHz, 146MHz, 147MHz, 148MHz, 150MHz, 152MHz, 153MHz, 154MHz, 155MHz, 156MHz, 157MHz, 158MHz, 159MHz, 160MHz, 161MHz, 162MHz, 163MHz, 164MHz, 165MHz, 166MHz, 167MHz, 168MHz, 169MHz, 170MHz, 171MHz, 172MHz, 173MHz, 174MHz, 175MHz, 177MHz, 178MHz, 179MHz, 180MHz, 181MHz, 182MHz, 183MHz, 184MHz, 185MHz, 186MHz, 187MHz, 188MHz, 189MHz, 190MHz, 191MHz, 192MHz, 193MHz, 194MHz, 195MHz, 196MHz, 197MHz, 198MHz, 199MHz, or 200MHz.

CPU Interface

[Optimal]-

Use most stable CPU/FSB parameters.

[Aggressive]-

Use overclocked CPU/FSB parameters.

➤ The choice: Optimal or Aggressive.

Memory Frequency

This item select DDR SDRAM frequency.

➤ The choice: By SPD, 50%, 60%, 66%, 75%, 80%, 83%, Sync, 120%, 125%, 133%, 150%, 166%, or 200%.

Memory Timings

This item allows you to set the Memory Timings.

➤ The choice: Optimal, Aggressive, Turbo, or Expert.

FSB Spread Spectrum

This item allows you to set the spread spectrum modulation.

➤ The choice: Disabled, 0.50%, or 1.00%.

AGP Spread Spectrum

This item allows you to set the spread spectrum modulation.

➤ The choice: Disabled, or 0.50%.

Frame Buffer Size

This item allows you to set the VGA frame buffer size.

➤ The Choice: 8M, 16M, 32M, 64M, 128M, or Disable.

AGP Aperture Size(MB)

Select the size of Accelerated Graphics Port(AGP) aperture. The aperture is a portion of the PCI memory address range dedicated to graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

- The choice: 8M, 16M, 32M, 64M, 128M, or Disable.

AGP 8X Support

This item allows you to enable or disable AGP 8X Support.

- The choice: Enable, or Disabled.

AGP Fast Write Capability

This item enables an end user to manually select the AGP output buffer driver strength.

- The Choice: Enabled or Disabled.

System BIOS Cacheable

Select Enable allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

- The Choice: Enabled or Disabled.

Video RAM Cacheable

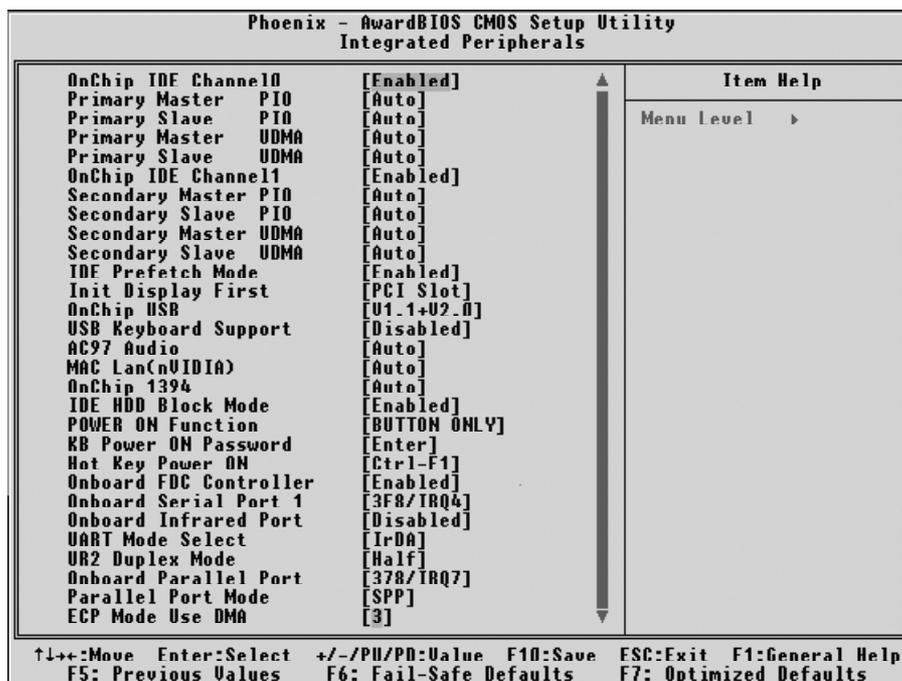
Select Enable allows caching of the video BIOS, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

- The Choice: Enabled or Disabled.

TV Mode Support

This item allows you to set the TV Mode Support.

- The Choice: NTSC-M, NTSC-J, PAL-M, PAL-BDGHI, PAL-N, PAL-NC.

 **Integrated Peripherals**

OnChip IDE Channel0

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled to activate the primary IDE interface. select Disabled to deactivate this interface.

- The Choice: Enabled or 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 choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, or Mode 4.

Primary/Secondary Master/Slave UltraDMA

Ultra DMA/100 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 both of your hard drive and your system software support Ultra DMA/100, select Auto to enable BIOS support.

- The choice: Auto or Disabled.

OnChip IDE Channel1

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled to activate the secondary IDE interface; select Disabled to deactivate this interface.

- The Choice: Enabled or Disabled.

IDE Prefetch Mode

The onboard IDE drive interface support IDE prefetching for faster drive access. If you install a primary and /or secondary add-on IDE interface, set this field to Disabled if the interface does not support prefetching.

- The Choice: Enabled or Disabled.

Init Display First

This item is used to determine initial device when system power on.

- The choice: Onboard/AGP or PCI Slot.

OnChip USB

This should be enabled if your system has a USB installed on the system board and you want to use it.

- The choice: Desable, V1.1 + V2.0, or V1.1.

USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus(USB) controller and you have a USB keyboard.

- The Choice: Enabled or Disabled.

AC97 Audio

This item allows you to control the onboard AC97 Audio.

- The Choice: AUTO or Disabled.

MAC LAN (nVIDIA)

This item allows you to set the MAC LAN.

- The Choice: AUTO or Disabled.

OnChip 1394

This item allows you to set the OoChip 1394.

- The Choice: Enable or 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 drivers do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

- The Choice: Enable or Disabled.

Power On Function

Enable you to set power on parameters. The default setting enables you to use a hot key to turn on the system.

- The Choice: Password, Hot Key, Mouse Move, Mouse Click, Any Key, BUTTON ONLY, or Keyboard 98.

K/B Power On Password

When the POWER ON Function is set to Password, use this item to set the password.

- The Choice: Enter.

Hot Key Power On

When the POWER ON Function is set to Hot Key, use this item to set the hot key combination that turns on the system.

- The Choice: Control -F1 ~ Control- F12.

Onboard FDC Controller

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector.

- The Choice: Enable or Disabled.

Onboard Serial Port1

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port1 (COM1).

- The Choice: Disabled, 3F8-IRQ4, 2F8-IRQ3, 3E8-IRQ4, 2E8-IRQ3, or Auto.

Onboard Infrared Port

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard infrared port.

- The Choice: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ, 3E8/IRQ3, or Auto.

UART Mode Select

This item allows you to select IrDA infrared through COM2 port.

- The Choice: IrDA, ASKIR, or SCR

UR2 Duplex Mode

This item allows you to select the IR half or full duplex function.

- The Choice: Full, or Half.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address and interrupt request(IRQ).

- The Choice: Disabled, 378/IRQ7, 278/IRQ5, or 3BC/IRQ7.

Parallel Port Mode

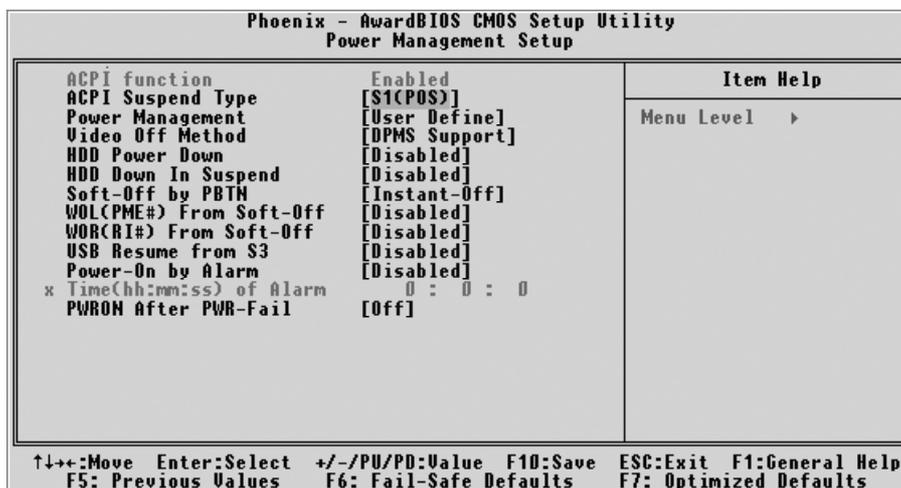
Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available mode.

- The Choice: SPP, EPP, ECP, or ECP + EPP.

ECP Mode Use DMA

When the onboard parallel is set to ECP mode, the parallel port can use DMA3 or DMA1.

- The Choice: 1 or 3.

 **Power Management Setup**

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

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI)

- The choice: Always Enabled.

ACPI Suspend Type

This item allows you to select sleep state when suspend.

- The choice: S1(POS), S3(STR), or S1&S3.

Power Management

This category allows you to select the type (or degree) of power saving mode settings.

Min Saving Minimum power management.

Suspend Mode = 1 hr.

Max Saving Maximum power management.

Suspend Mode = 1 min.

User Define Allows you to set each mode individually.

Suspend Mode = Disabled or 1 min ~ 1 hr.

- The choice: User Define, Min Saving, or Max Saving.

Video Off Method

This determines the manner in which the monitor is blanked.

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.

Blank Screen This option only writes blanks to the video buffer.

DPMS Supported Initial display power management signaling.

- The choice: V/H SYNC + Blank, Blank Screen, or DPMS Supported.

HDD Power Down

The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

- The choice: Disabled, 1 Min ~ 15 Min.

HDD Down In Suspend

The item allows you to enable or disable the HDD Down In Suspend.

- The choice: Enabled, Disabled.

Soft-Off By PBTN

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

- The choice: Delay 4 Sec, or Instant-Off.

WOL(PME#) From Soft-Off

If this item is set to Enable, the system power will be turned on when the LAN port receives an incoming signal. You have to connect the fax/modem to the mainboard Wake On LAN connector for this feature to work.

- The choice: Enabled, Disabled.

WOR(RI#) From Soft-Off

If this item is enabled, it allows the system to resume from a software power down or power-saving mode whenever there is an incoming call to an installed fax/modem. You have to connect the fax/modem to the mainboard.

- The choice: Enabled, Disabled.

USB Resume From S3

If you are using a USB keyboard, and the ACPI suspend type is set to S3, you can enable this item to allow a keystroke to wake up the system from power saving mod.

- The choice: Enabled, Disabled.

Power-On by Alarm

When set to Enabled, the following three fields become available and you can set the month, date (day of the month), hour, minute and second to turn on your system.

- The choice: Enabled, Disabled.

Time (hh : mm : ss) Alarm

This item selects the alarm Time.

[hh]

- Key in a DEC number: Min = 0, Max = 23.

[mm/ss]

- Key in a DEC number: Min = 0, Max = 59.

PWRON After PWR-Fail

This item allows you to select power on function when power fail.

- The choice: Off, On, or Former-Sts.

 **PnP/PCI Configurations**

Phoenix - AwardBIOS CMOS Setup Utility	
PnP/PCI Configurations	
Reset Configuration Data	[Disabled]
Resources Controlled By	[Auto(ESCD)]
x IRQ Resources	Press Enter
PCI/VGA Palette Snoop	[Disabled]
	Item Help
	Menu Level >
	Default is 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 OS cannot boot
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults	

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU 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.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit from Setup if you have installed a new device or software and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

- The choice: Enabled or 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.

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 proceeded by a ">").

- The choice: Auto(ESCD) or Manual.

IRQ Resources

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

IRQ3/4/5/7/9/10/11/12/14/15 assigned

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.

➤ The choice: PCI Device or Reserved.

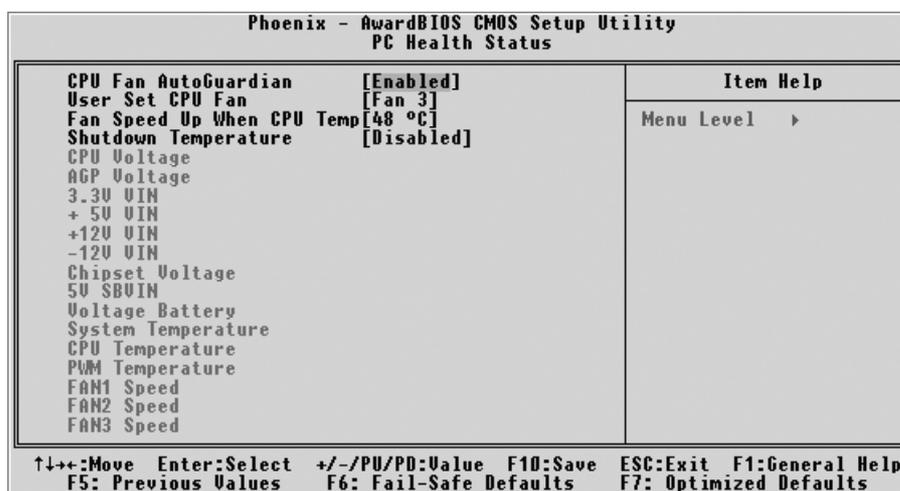
PCI/VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. If you have MPEG ISA/VESA VGA Cards and PCI/VGA Card worked, Enable this field. Otherwise, please Disable it.

➤ The choice: Enabled or Disabled.



PC Health Status



CPU Fan AutoGuardian

This SMART Bios enabled 3 phase Variable Fan Speed and CPU temperature Control feature.

By default, "CPU Fan AutoGuardian" feature under PC Health Status is enabled.

- The choice: Eabled or Disable.

Note: Before manually modifying the CPU fan setting, please Make sure both fan connectors are plug into the correct fan connector designations on the mainboard.

User Set CPU Fan

This item allows you to choose one specific fan for further setting.

- The choice: Fan1, Fan3, or Fan1&Fan3.

Fan Speed Up When CPU Temp

Enabled 3 phase smart control to the Selected fan. This feature ranges from 40°C to 52°C, in an increment of 4°C.

- The choice: 40°C, 44°C, 48°C, or 52°C.

Warning: It is Strongly recommanded to disable CPU Fan AutoGuardian feature, if you wish to use other fan cooler, allowing the fan to run at its default speed.

Shutdown Temperature

Enables you to set the maximum temperature the system can reach before powering down.

➤ The choice: 60°C/140°F, 65°C/149°F, 70°C/158°F, or Disable.

- *CPU Voltage
- *AGP Voltage
- *3.3V VIN
- * +5V VIN
- * +12V VIN
- * -12V VIN
- *Chipset Voltage
- *5V SBVIN
- *Voltage Battery
- *System Temperature
- *CPU Temperature
- *PWM Temperature
- *Fan1 Speed
- *Fan2 Speed
- *Fan3 Speed



Load Fail-Safe Defaults

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

Load Fail-Safe Defaults (Y/N) ? N

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



Load Optimized Defaults

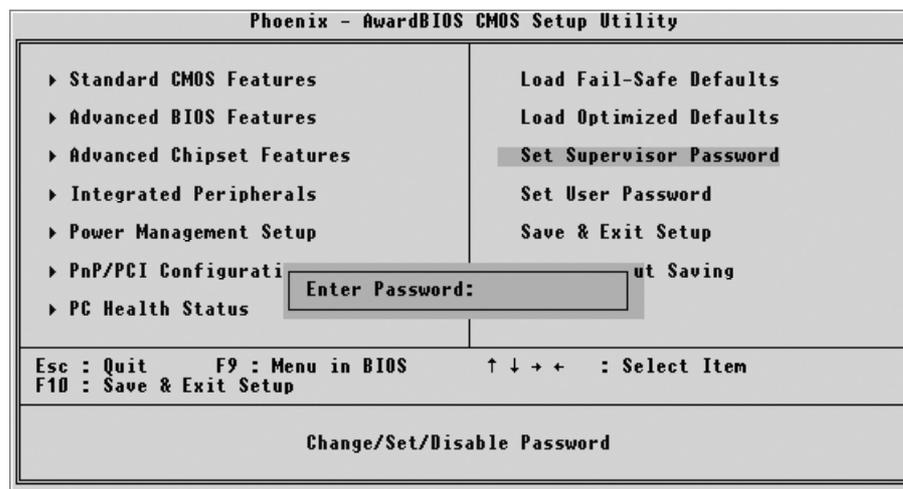
When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory-set for optimal performance system operation.



Set Password



This item is to set supervisor password. Please follow below steps.

New Password Setting :

1. While pressing <Enter> key to start setting password function, a dialog box appears to ask you's Enter password: “.
2. Key in a new password now. However, the password can not be over eight characters or numbers.
3. Then system will request you to confirm new password by asking you to key in new password again.
4. Once the confirmation is completed, new code takes effect.

No Password Setting :

5. If you want to delete password, just press <Enter> key instead of new password while password input is requested. And the other procedures are the same as above password setting.

If You Forget Password :

6. While being asked of password, you just forget it and you must access the system. The only way is to turn off system and clear CMOS memory. Please take reference in page 26 for clear CMOS setting.



Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus of CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.



Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.