



Mini PC System

User's Manual

N1

The FCC wants you to know

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modification made to this equipment void the user's authority to operate this equipment.

This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- * Reorient or relocate the receiving antenna.
- * Increase the separation between the equipment and receiver.
- * Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- * Consult the dealer or an experienced radio/TV technician for help.
- * All external cables connecting to this basic unit must be shielded.

Canadian D.O.C. Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations or the Canadian Department of Communications.

Cet appareil numérique n'exécède pas les limites de catégorie B pour des émissions radio depuis un appareil numérique, comme défini dans les réglementations d'interférence radio du Ministère Canadien des Communications.

CE Mark

This equipment is in conformity with the EMC directive.

Overview

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturer.

The manufacturer assumes no responsibility for any errors that might appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license. No responsibility is assumed for the use or reliability of software or equipment that is not supplied by the manufacturer or its affiliated companies.

Copyright Notice

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, photocopying, recording or otherwise, stored in any retrieval system of any nature without the prior written permission of the manufacturer.

Trademark

Other product and company names mentioned herein may be trademarks and/or service marks of their respective owners.

Intel and Pentium are registered trademarks of Intel Corporation.

SiS is registered trademark of Silicon Integrated Systems Corporation.

PS/2 is registered trademark of International Business Machines Corporation.

Notice:

The colors and the pictures in this manual are for your reference only. For the real colors and the objects please refer to the merchandise on hand.

Important Safety Information

1. Please read these safety instructions carefully.
2. Please keep this User's Manual for later reference.
3. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or clothe for cleaning.
4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
5. Please keep this equipment from humidity.
6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
7. Do not leave this equipment in an environment unconditioned, storage temperature above 40°C, it may damage the equipment.
8. The openings on the enclosure are for air convection hence protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
9. Make sure the voltage of the power source when connect the equipment to the power outlet.
10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.
13. Never pour any liquid into ventilation openings, this could cause fire or electrical shock.

14.If one of the following situations arises, get the equipment checked by service personnel:

- a. The Power cord or plug is damaged.
- b. Liquid has penetrated into the equipment.
- c. The equipment has been exposed to moisture.
- d. The equipment has not worked well or you can not get it work according to user's manual.
- e. The equipment has dropped and damaged.
- f. If the equipment has obvious sign of breakage.

15.**CAUTION:** THE COMPUTER IS PROVIDED WITH A BATTERY-POWERED REAL-TIME CLOCK CIRCUIT. THERE IS A DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH SAME OR EQUIVLENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Table of the Contents

Section 1	Introduction	
1.1	Begin Your Tour In The DIY World	2
1.2	Checking the Equipments	3
Section 2	Mainboard Set Up	
2.1	Mainboard Features	6
2.2	Layout And Components Index	10
2.3	Hardware Installation	11
2.4	Jumpers, Headers, Connectors and Slots	16
Section 3	Peripheral Connections	
3.1	Overview	28
3.2	Connecting Peripheral Devices	29
Section 4	Software and Utilities	
4.1	Installing Drivers and Utilities	36
Section 5	Trouble Shooting	
5.1	System Does Not Start	40
5.2	Keyboard and Mouse Problems	41
5.3	USB Devices Problems	42
5.4	Software Problems	43
Section 6	Taking Care of Your Computer	
6.1	General Maintenance	46
6.2	Safe Use of The System	47
Appendix	Installing Mainboard	
A.1	Installing Mainboard	50

Section 1

Introduction



1.1 Begin Your Tour In The DIY World

Congratulations on purchasing this cutting-edge Small Form Factor System. Now you have the reliability and flexibility of a computer that offers powerful computing performance and full multimedia capabilities. As a progressive and compact-sized PC, it allows you to work effectively and play ingeniously with integrated functionality.

For utility, your computer features easy installation with better mechanism such as well-located cables and hard disk drive. Just follow the step-by-step installation guide of the manual, you will find that it is a simple process to set up CPU, memory and hard disk drive that takes only few minutes. And when you open its cover panels, you will admire the innovation of the components like side-blown CPU cooler and special-made power supply that are developed to improve the noise and thermal.

For connectivity and expandability, your computer provides four USB2.0, two IEEE1394, one SPDIF input and output, and the standard audio ports including headphone, microphone, line-in and line-out connectors, which satisfy you for attaching various digital devices. Besides, there is one AGP and one PCI slots that allow power users to add on the high-end audio and video cards. Users can enjoy a richer gaming experience and enhanced sound quality with built-in graphics engine and SPDIF jack.

To help you familiarize with your computer, we provide this user's guide including the clear and concise installation guide, trouble-shooting procedure and the other practical information. We hope you will take pleasure in using this computer as much as we enjoy designing it for you.

1.2 Checking the Equipments

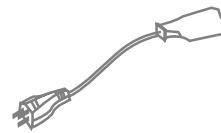
This section describes the contents of your computer pages. Before you unpack your computer, make sure you have enough room to set up your system. Then open the package and check the following items. If there are any of the equipments are missing or damaged, contact your dealer immediately.



Small Form Factor System



Driver CD



A power cord



User's manual



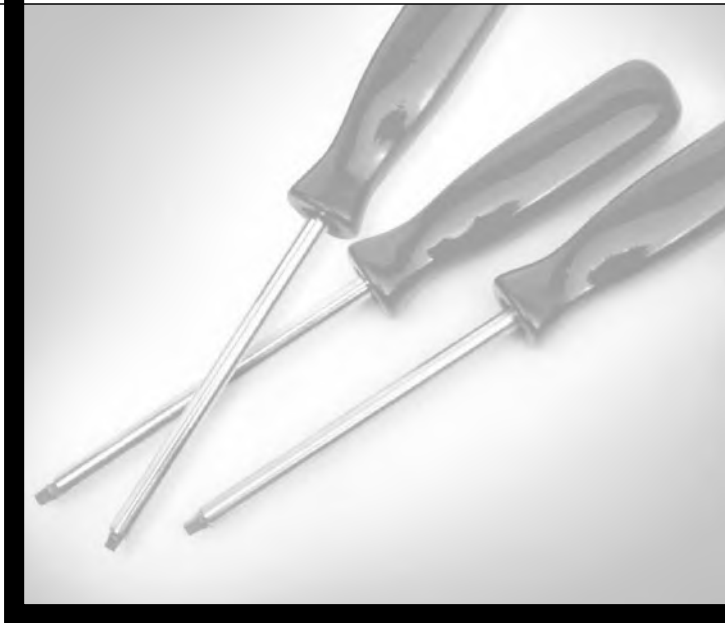
Installation Guide



Thermal Grease



Screws Pack



Section 2

Mainboard Set Up

2.1 Mainboard Feature

Model

NC51G-S7

CPU

- Supports Socket 754.
- Supports AMD Athlon 64 processor up to 3700+.
- Supports AMD Sempron processor.
- Supports HyperTransport Technology up to 2GHz.
- Supports AMD Cool'n'Quiet Technology.

Chipset

- North Bridge: nVIDIA GeForce 6100.
- South Bridge: nVIDIA nForce 410.

Dimensions

- Mini-PC Form Factor: 30.8cm (L) x 19.2cm (W)

Operating System Supporting

- Supports Windows 2000 and Windows XP.
Note: Does not support Windows 98SE and Windows ME.

Slot

- One PCI bus master slot.
- One PCI-Express x16 slot.

On-board IDE

- Two on-board connectors support 4 IDE disk drives.
- Supports PIO mode 0~4.
- Ultra DMA 33/66/100/133 bus master mode.

Super I/O

- Chip: ITE 8712AF.
- Low Pin Count Interface.
- Provides the most commonly used legacy Super I/O functionality.
- Environment Control initiatives,
 - H/W Monitor
 - Fan Speed Controller
 - ITE's "Smart Guardian" function

System Memory

Supports up to two DDR 333/400 devices.

Supports non-ECC memory only.

Registered DIMMs not supported.

Maximum memory capacity is up to 2GB. (Following table is only for reference.)

DIMM Socket Location	DDR Module	Total Memory Size
DIMM1	128MB/256MB/512MB/1GB *1	Max is 2 GB.
DIMM2	128MB/256MB/512MB/1GB *1	

Onboard AC' 97 Sound CODEC

Chip: ALC655

Support 6 channels.

Supports S/PDIF-out and S/PDIF-In functions. (optional)

Compliant with AC' 97 Version 2.3 specification.

Onboard Serial ATA 2

Integrated in nForce 410.

Supports RAID 0, RAID 1 functions.

Supports two serialATA II (SATA II) ports.

- Data transfer rates up to 3 Gb/s.
- SATA Version 2.0 specification compliant.

10/100 LAN PHY

PHY: RTL8201CL.

Supports 10 Mb/s and 100 Mb/s auto-negotiation.

Half/Full duplex capability.

Supports ACPI, PCI power management.

IEEE 1394 Chip (optional)

Chip: VIA Vt6307.

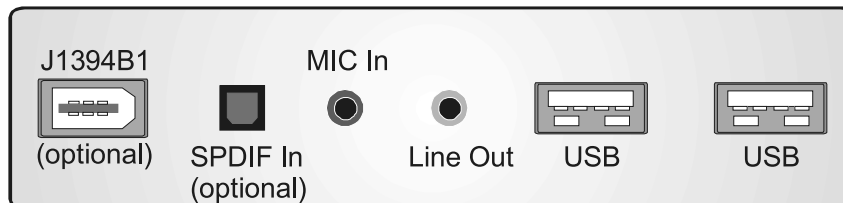
Supports two 1394 Firewire ports with transfer rate up to 400Mb/s.

Internal On-board I/O Connectors and Headers

- 1 Printer port. (optional)
- 1 CD-in connector supports 1 CD-ROM audio-in device.
- 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
- 1 USB headers support 2 USB 2.0 ports. (1 USB header for optional)
- 2 IDE connectors support 4 devices.
- 2 Serial ATA II connectors support 2 SATA II devices.

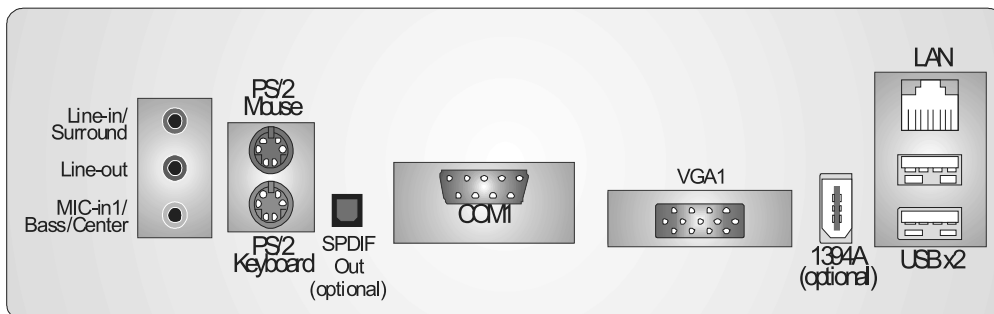
Front Panel I/O Connectors

- 1 IEEE1394 Firewire port. (optional)
- 1 S/PDIF-in port. (optional)
- 1 MIC-in port.
- 1 Line-out port.
- 2 USB 2.0 ports.

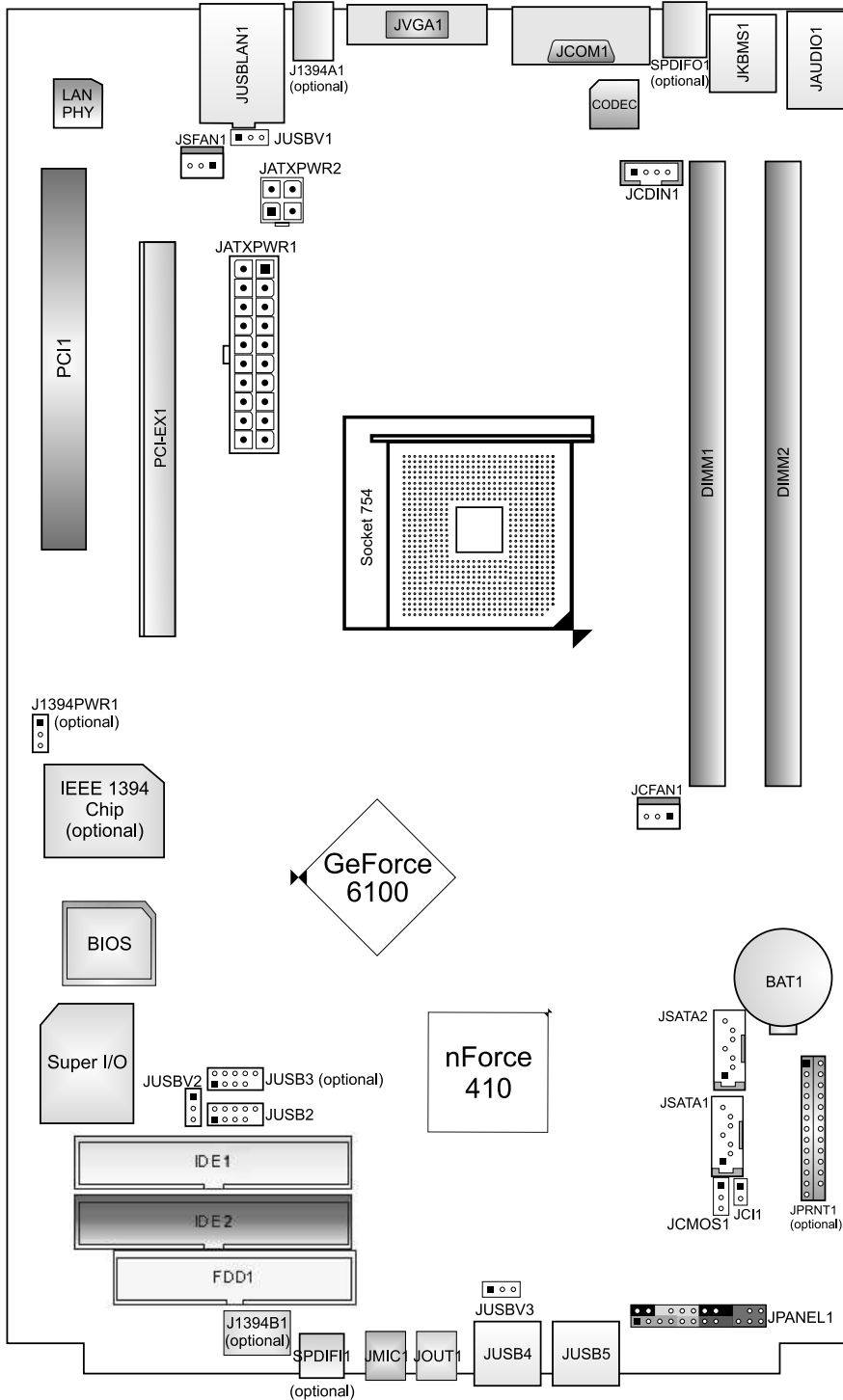


Back Panel I/O Connectors

- 2 USB 2.0 ports.
- 1 VGA port.
- 1 Serial port.
- 1 RJ-45 LAN jack.
- 1 PS/2 Mouse port.
- 1 PS/2 Keyboard port
- 1 S/PDIF-out port. (optional)
- 1 IEEE1394 Firewire port. (optional)
- 1 Vertical audio port including 1 Line-in connector, 1 Line-out connector, and 1 MIC-in connector.



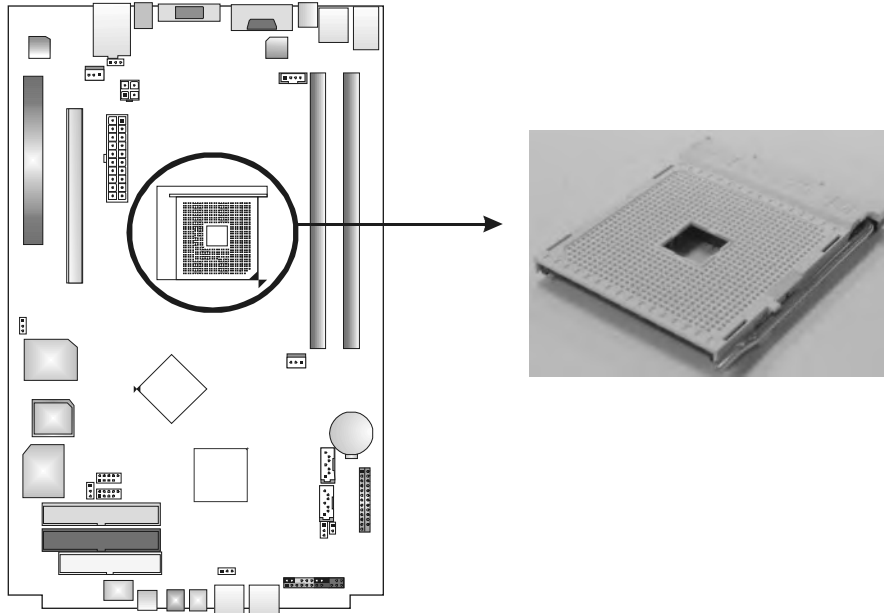
2.2 Layout And Components Index



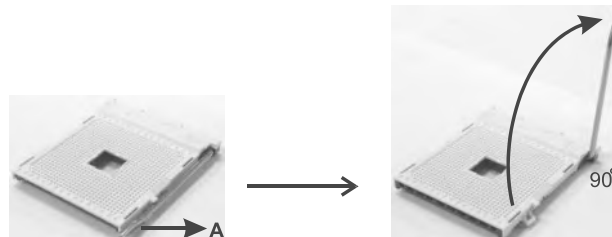
Note: ■ represents the 1st pin.

2.3 Hardware Installation

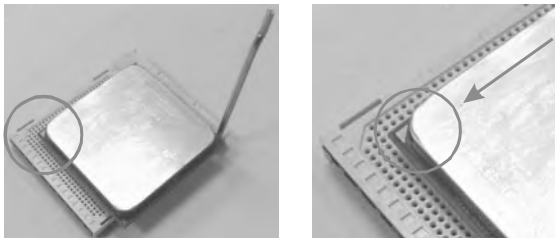
INSTALLING CENTRAL PROCESSING UNIT (CPU)



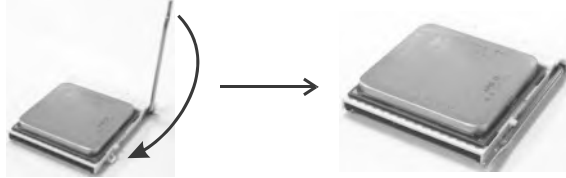
Step 1: Pull the lever toward direction A from the socket and then raise the lever up to a 90-degree angle.



Step 2: Look for the triangle cut edge on socket, and the gold dot on CPU should point forwards this triangle cut edge. The CPU will fit only in the correct orientation.



Step 3: Hold the CPU down firmly, and then lower the lever to locked position to complete the installation.



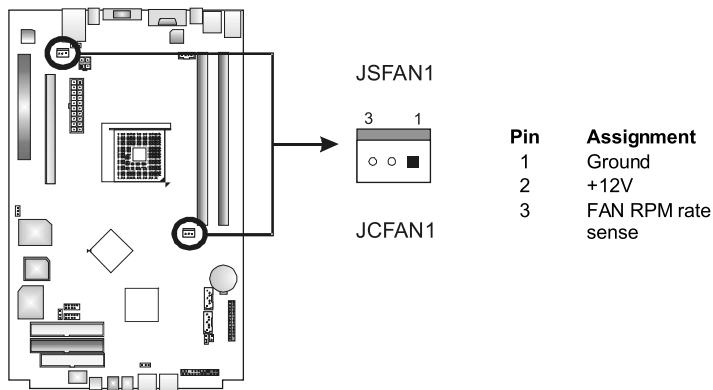
Step 4: Put the CPU Fan and heatsink assembly on the CPU and buckle it on the retention frame. Connect the CPU FAN power cable into the JCFAN1. This completes the installation.

FAN HEADERS

These fan headers support cooling-fans built in the computer. The fan cable and connector may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to pin#1.

JCFAN1: CPU Fan Header

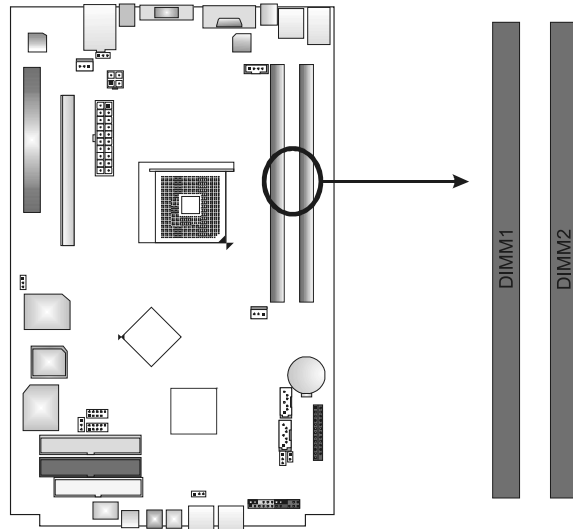
JSFAN1: System Fan Header



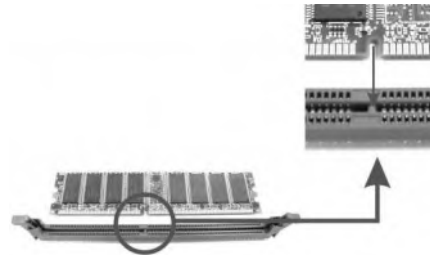
Note:

The JCFAN1 and JSFAN1 support 3-pin head connector. When connecting with wires onto connectors, please note that the red wire is the positive and should be connected to pin#2, and the black wire is Ground and should be connected to GND.

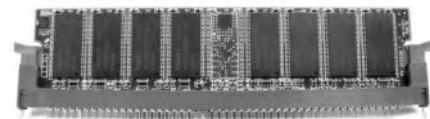
2.3 INSTALLING SYSTEM MEMORY



1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.



2. Insert the DIMM vertically and firmly into the slot until the retaining chip snap back in place and the DIMM is properly seated.



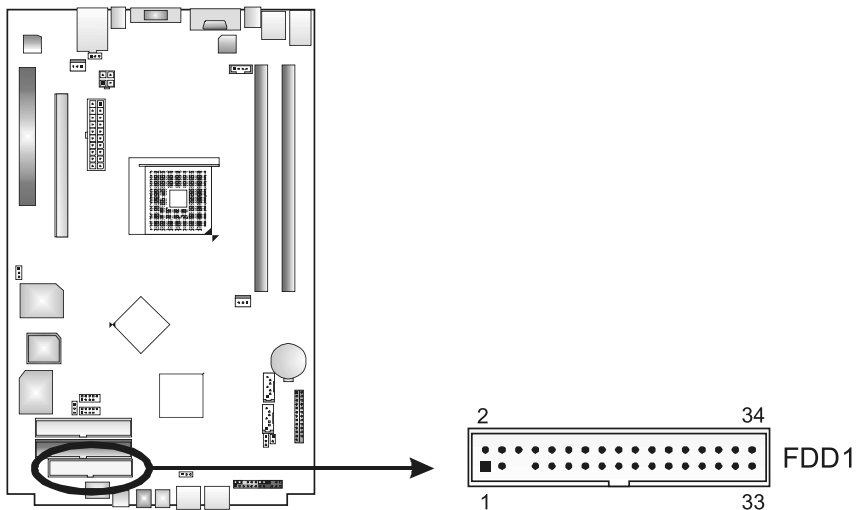
Note:

To remove the DDR modules, push the ejector tabs at both sides of the slot outward at the same time, and pull the modules out vertically.

2.4 CONNECTORS AND SLOTS

FDD1: Floppy Disk Connector

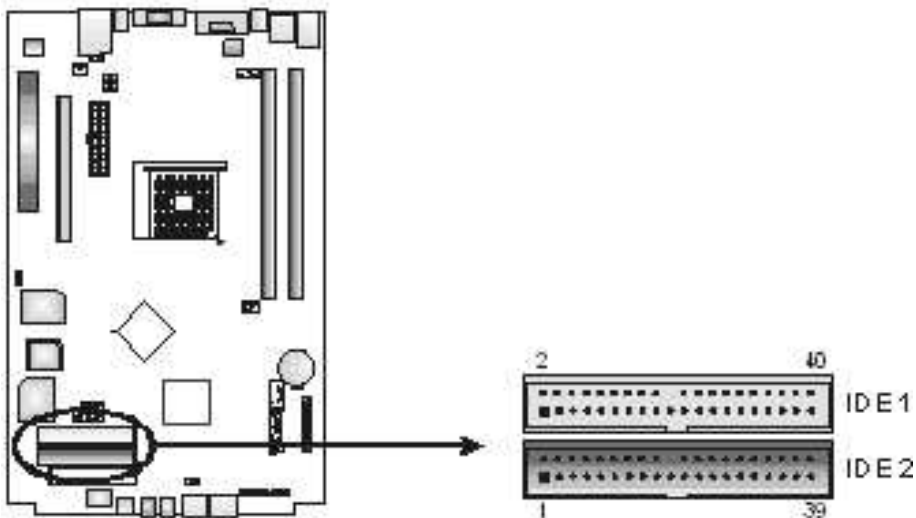
The motherboard provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



IDE1/IDE2: Hard Disk Connectors

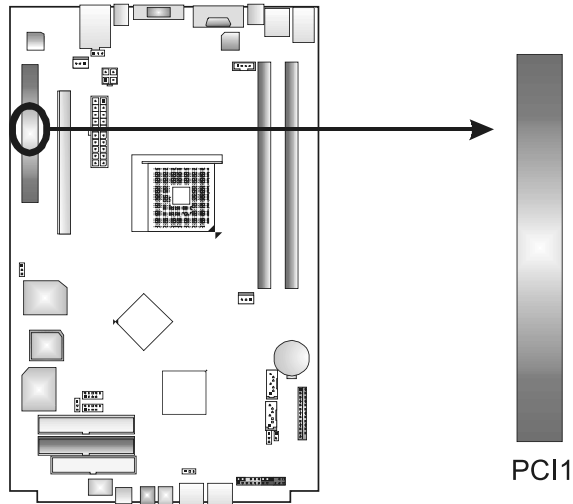
The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA 33/66/100/133 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary).

The IDE connectors can connect a master and a slave drive, so you can connect up to four hard disk drives. The first hard drive should always be connected to IDE1.



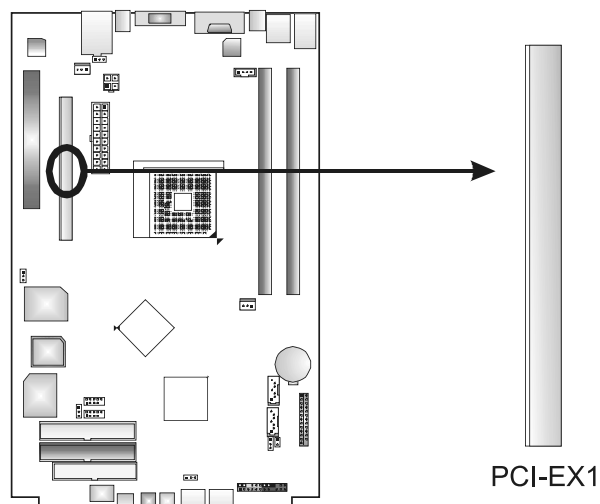
PCI1: Peripheral Component Interconnect Slot

This motherboard is equipped with 1 standard PCI slot. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards. This PCI slot is designated as 32 bits.



PCI-EX1: PCI-Express x16 Slot

- PCI-Express 1.0a compliant.
- Maximum bandwidth is up to 4GB/s per direction.



2.4 Headers & Jumpers Setup

HOW TO SETUP JUMPERS

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is close , if not, that means the jumper is open .



Pin opened



Pin closed



Pin1-2 closed

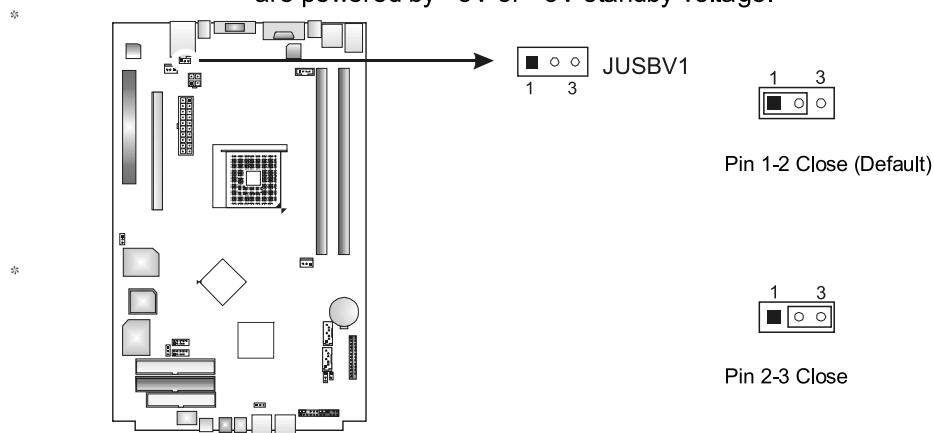
DETAIL SETTINGS

JUSBV1:

* Power Source Headers for PS/2 Keyboard and Mouse and USB Ports

Pin 1-2 Close: +5V for USB ports at JUSBLAN1 and PS/2 keyboard and mouse ports at JKBMS1.

Pin 2-3 Close: USB ports at JUSBLAN1 and PS/2 keyboard and mouse ports are powered by +5V or +5V standby voltage.



Note:

In order to support this function (Power-On system via keyboard, mouse and USB device), JUSBV1 jumper cap should be placed on Pin 2-3.

JUSBV2/JUSBV3: Power Source Headers for USB Ports

Pin 1-2 Close:

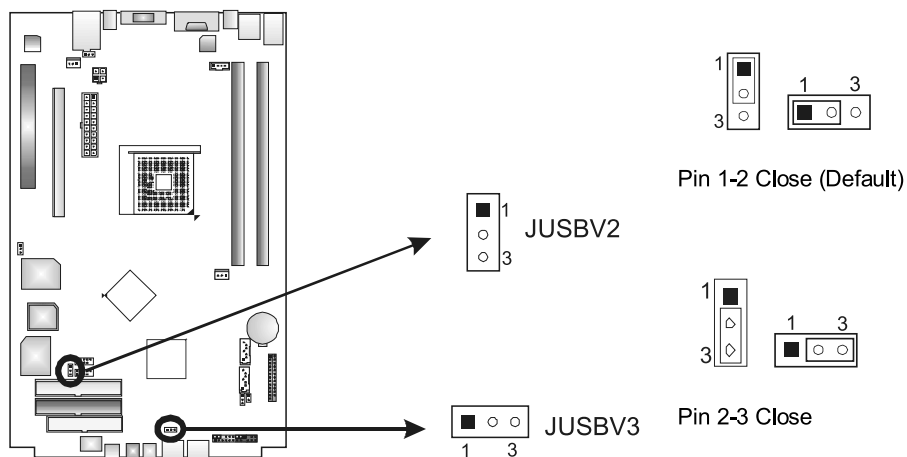
JUSBV2: +5V for USB ports at JUSB2 and JUSB3.

JUSBV3: +5V for USB ports at front panel (JUSB4/JUSB5).

Pin 2-3 Close:

JUSBV2: USB ports at JUSB2 and JUSB3 are powered by +5V or +5V standby voltage.

JUSBV3: USB ports at front panel (JUSB4/JUSB5) are powered by +5V or +5V standby voltage.

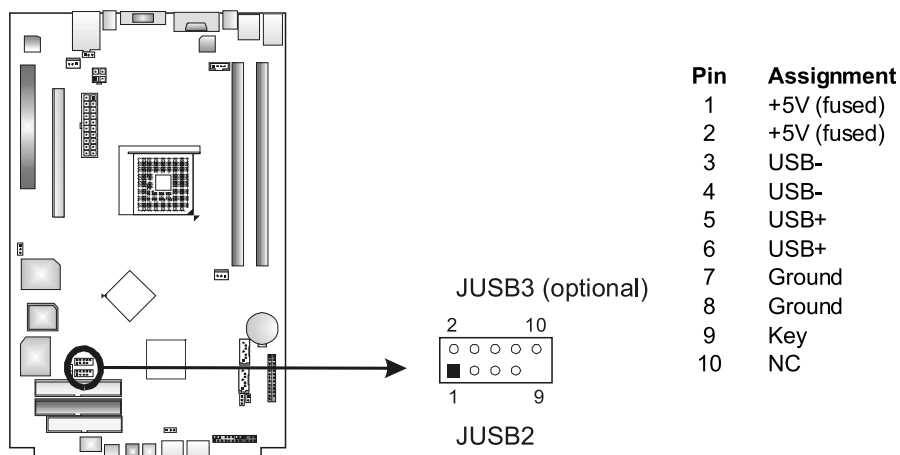


Note:

In order to support this function [Power-On system via USB device], [JUSBV2/ JUSBV3] jumper cap should be placed on Pin 2-3 individually.

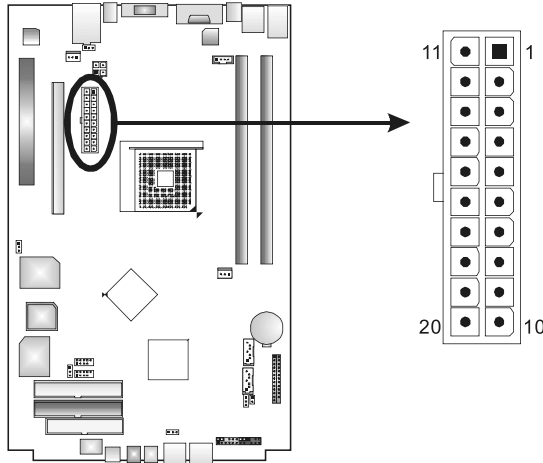
JUSB2/JUSB3: Headers for USB 2.0 Ports (JUSB3 is optional)

This header allows user to connect additional USB cable with internal USB devices, like USB card reader.



JATXPWR1: ATX Power Source Connector

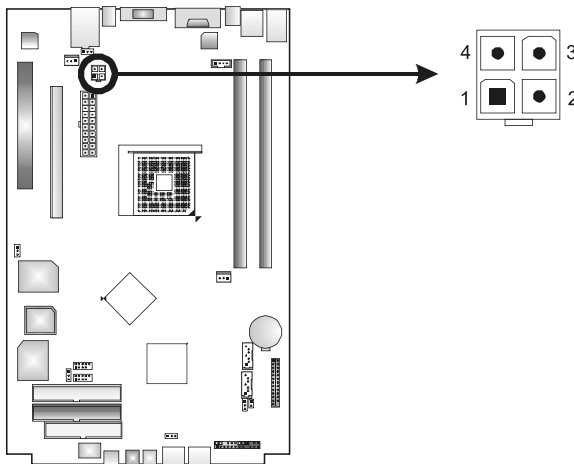
This connector allows user to connect 20-pin power connector on the ATX power supply.



Pin	Assignment
1	+3.3V
2	+3.3V
3	Ground
4	+5V
5	Ground
6	+5V
7	Ground
8	PW_OK
9	Standby Voltage +5V
10	+12V
11	+3.3V
12	-12V
13	GND
14	PS_ON
15	Ground
16	Ground
17	Ground
18	-5V
19	+5V
20	+5V

JATXPWR2: ATX Power Source Connector

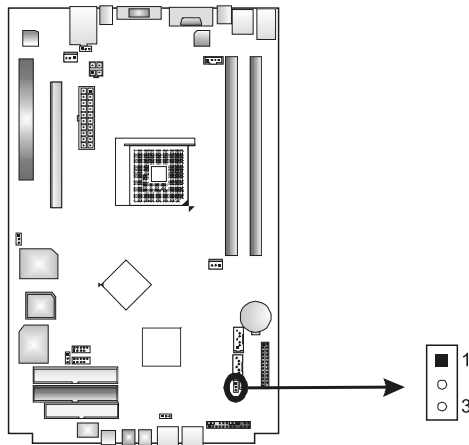
By connecting this connector, it will provide +12V to CPU power circuit.



Pin	Assignment
1	+12V
2	+12V
3	Ground
4	Ground

JCMOS1: Clear CMOS Header

By placing the jumper on pin2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the motherboard.



Pin 1-2 Close:
Normal Operation (Default).



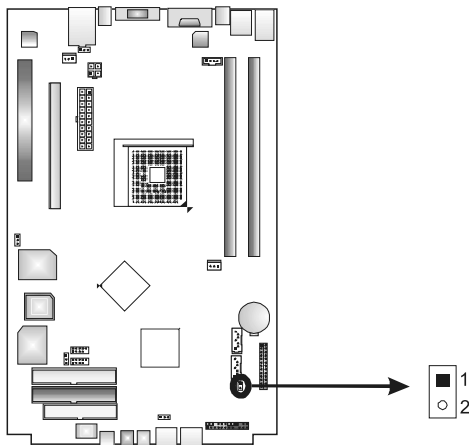
Pin 2-3 Close:
Clear CMOS data.

※ Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to □Pin 2-3 Close□.
3. Wait for five seconds.
4. Set the jumper to □Pin 1-2 Close□.
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

JCI1: Chassis Open Header

This connector allows system to monitor PC case open status. If the signal has been triggered, it will record to the CMOS and show the message on next boot-up.



Pin	Assignment
1	Case open signal
2	Ground