



MS-7184 (v1.X)
AmethystM
Micro ATX Mainboard
ATI RS482 + SB400 Based

English Version

Manual Rev: 1.1

Release Date: May 2005



FCC-B Radio Frequency Interference 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

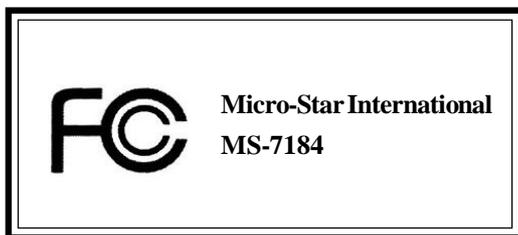
Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation

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Revision History

Revision	Revision History	Date
V1.0	First release for PCB 1.X with ATi RS482 & SB400	Apr. 2005
V1.1	remove the TV-out, S-video and SCSI connectors	May 2005

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

† Visit the MSI homepage & FAQ site for technical guide, BIOS updates, driver updates, and other information: <http://www.msi.com.tw> & http://www.msi.com.tw/program/service/faq/faq/esc_faq_list.php

† Contact our technical staff at: support@msi.com.tw

Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. **Do not cover the openings.**
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
 - † The power cord or plug is damaged.
 - † Liquid has penetrated into the equipment.
 - † The equipment has been exposed to moisture.
 - † The equipment has not work well or you can not get it work according to User's Manual.
 - † The equipment has dropped and damaged.
 - † The equipment has obvious sign of breakage.
12. **Do not leave this equipment in an environment unconditioned, storage temperature above 60° C (140°F), it may damage the equipment.**



CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.



廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

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Getting Started

Thank you for choosing the MS-7184 Series (MS-7184 v1.X) Micro ATX mainboard. The MS-7184 Series mainboards are based on **ATi® RS482 & ATi® SB400** chipsets for optimal system efficiency. Designed to fit the advanced **AMD® K8 Athlon 64** processor, the MS-7184 Series deliver a high performance and professional desktop platform solution.

Mainboard Specifications

CPU

- † Supports 64-bit AMD® Athlon 64 and Athlon 64 FX processor (Socket 939)
- † Supports up to 4000+ Athlon 64 FX-55, or higher CPU
(For the latest information about CPU, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php)

Chipset

- † ATI® RS482 Chipset
 - HyperTransport™ connection to AMD K8 Athlon64 processor
 - 8 or 16 bit control/address/data transfer both directions
 - 1000/800 MHz "Double Data Rate" operation both direction
 - Compliant with PCI Express 1.0a specifications (one x16 graphics interface, which can be divided into two smaller links for use by other devices)
 - Graphic integrated
- † ATI® SB400 Chipset
 - Supports dual channel native SATA controller up to 150MB/s with RAID 0 or RAID 1 or 0+1
 - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
 - Ultra DMA 33/ 66/100 master mode PCI EIDE controller
 - ACPI & PC2001 compliant enhanced power management
 - Supports USB2.0 up to 8 ports

Main Memory

- † Supports dual channel, eight memory banks DDR 333/400, using four 184-pin DDRDIMMs
- † Supports a maximum memory size up to 4GB without ECC
- † Supports 2.5v DDR SDRAM DIMM
(For the updated supporting memory modules, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php.)

Slots

- † One PCI Express x16 slot (supports PCI Express Bus specification v1.0a compliant)
- † Three 32-bit Master 3.3V/5V PCI Bus slots

Onboard IDE

- † An IDE controller on the ATI® SB400 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 100/66/33 operation modes
- † Can connect up to 4 IDE devices

Onboard Serial ATA

- † Supports 2 SATA ports with up to 150MB/s transfer rate



MSI Reminds You...

1. Please note that users cannot install OS, either WinME or Win98, in their SATA hard drives. Under these two OSs, SATA can only be used as an ordinary storage device.
2. To create a bootable RAID volume for a Windows 2000 environment, Microsoft's Windows 2000 Service Pack 4 (SP4) is required. As the end user cannot boot without SP4, a combination installation CD must be created before attempting to install the operating system onto the bootable RAID volume.
To create the combination installation CD, please refer to the following website:

<http://www.microsoft.com/windows2000/downloads/servicepacks/sp4/HFdeploy.htm>

USB Interface

- † 8 USB ports
 - 4 ports in the rear I/O, 4 ports via the external bracket

LAN

- † Realtek® 8100C 10/100 LAN chip
 - Integrated Fast Ethernet MAC and PHY in one chip
 - Supports 10Mb/s and 100Mb/s
 - Compliance with PCI v2.2
 - Supports ACPI Power Management

IEEE 1394

- † VIA® 6307 IEEE 1394 controller
 - Supports up to two 1394 ports (rear panel x 1, pinheader x 1).
 - Transfer rate is up to 400Mbps

Audio

- † RealTek ALC658C 6-channel software audio codec
 - Compliance with AC97 v2.3 Spec.
 - Meets PC2001 audio performance requirement.

On-Board Peripherals

- † On-Board Peripherals include:
 - 1 floppy port supports 1 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
 - 1 VGA port
 - 1 SPDIF-Out connector
 - 1 parallel port supporting SPP/EPP/ECP mode
 - 8 USB2.0 ports (Rear*4/Front*4)
 - 1 Audio (Line-In/Line-Out/MIC) port
 - 1 RJ-45 LAN Jack

MS-7184 M-ATX Mainboard

- 2 IDE ports support 4 IDE devices
- 2 serial ATA ports
- 2 IEEE1394s (Rear * 1 / Front * 1)

BIOS

- † The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
- † The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.
- † Supports boot from LAN, USB Device 1.1 & 2.0, and SATA HDD.

Dimension

- † Micro-ATX Form Factor: 24.4cm X 24.4cm

Mounting

- † 8 mounting holes



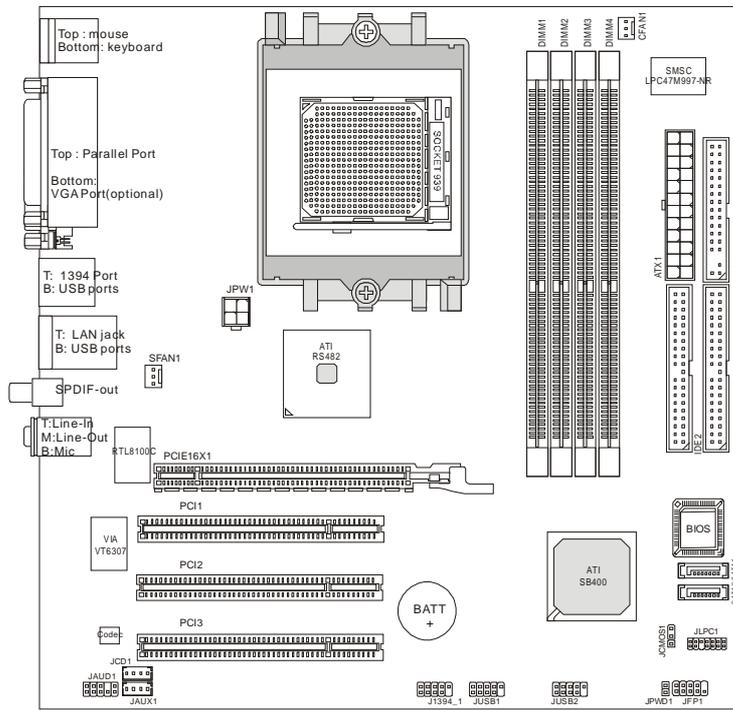
**1394 GUID address
Label (optional)**



MSI Reminds You...

1. Each board will be given a unique 1394 GUID from the manufacturer's default settings in the system BIOS.
2. Use the flash utility or Live Update from MSI's website for BIOS update. The 1394 GUID address is burnt in the BIOS core. If the 1394 GUID address is lost due to an unpredictable event, such as replacing a new BIOS chip, users can use the utility from MSI's website by entering the 1394 GUID address to recover its original one.

Mainboard Layout



MS-7184 v1.X M-ATX Mainboard

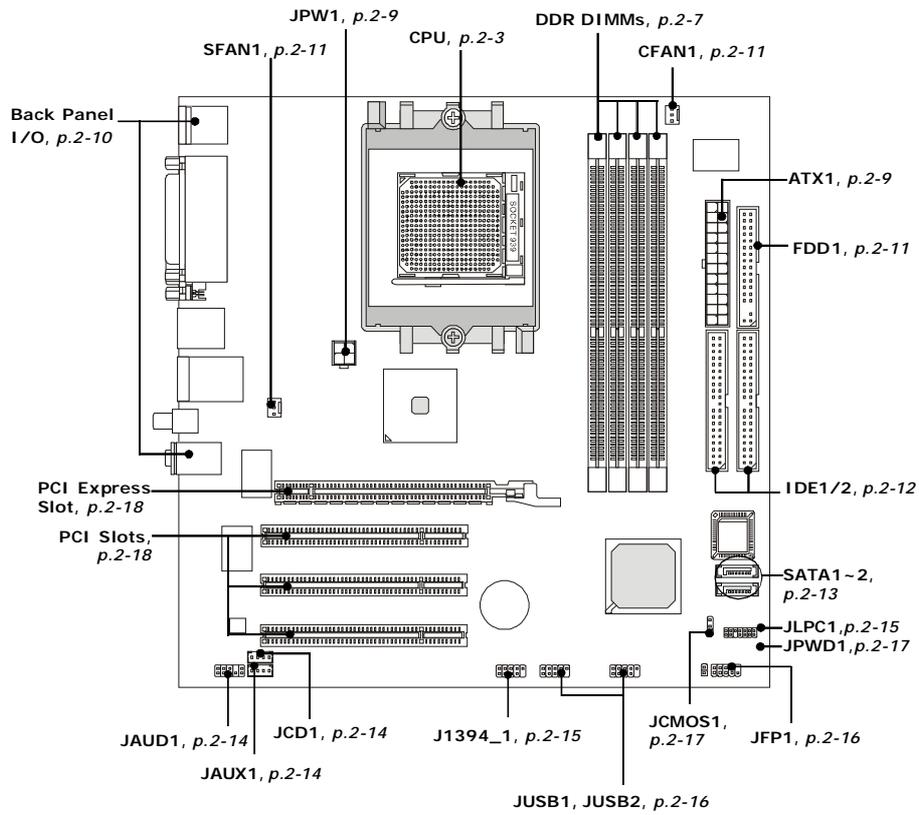
2

Hardware Setup

This chapter tells you how to install the CPU, memory modules, and expansion cards, as well as how to setup the jumpers on the mainboard. Also, it provides the instructions on connecting the peripheral devices, such as the mouse, keyboard, etc.

While doing the installation, be careful in holding the components and follow the installation procedures.

Quick Components Guide



Central Processing Unit: CPU

The mainboard supports AMD® Athlon64 processor. The mainboard uses a CPU socket called Socket-939 for easy CPU installation. When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

For the latest information about CPU, please visit http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php.



MSI Reminds You...

Overheating

Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

Replacing the CPU

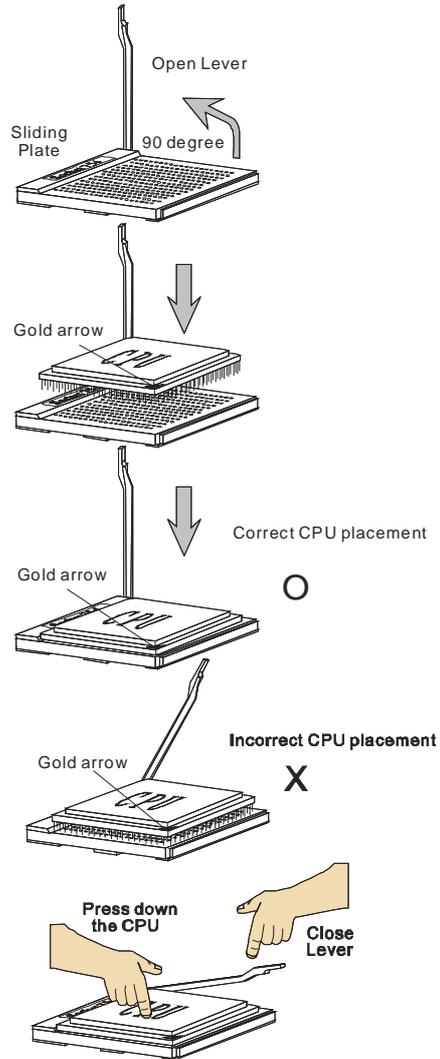
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from grounded outlet first to ensure the safety of CPU.

Overclocking

*This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

CPU Installation Procedures for Socket 939

1. Please turn off the power and unplug the power cord before installing the CPU.
2. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.
3. Look for the gold arrow on the CPU. The gold arrow should point as shown in the picture. The CPU can only fit in the correct orientation. Lower the CPU down onto the socket.
4. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your mainboard.
5. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.



Installing AMD Athlon64 CPU Cooler Set

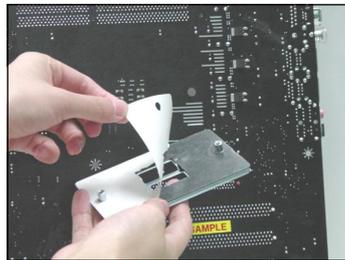
When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not have the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.



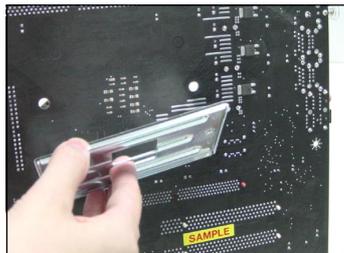
MSI Reminds You...

Mainboard photos shown in this section are for demonstration of the cooler installation for Socket 939 CPUs only. The appearance of your mainboard may vary depending on the model you purchase.

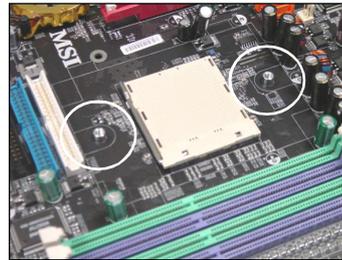
1. Detach the shield off the backplate's paster.



2. Turn over the mainboard, and install the backplate to the proper position.

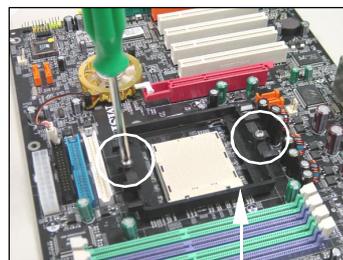


3. Turn over the mainboard again, and place the mainboard on the flat surface. Locate the two screw holes of the mainboard.



4. Align the retention mechanism and the backplate.

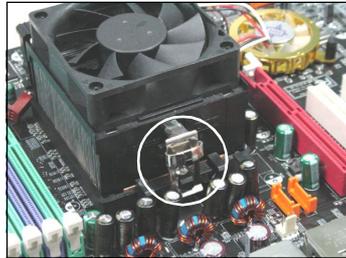
Fix the retention mechanism and the backplate with two screws.



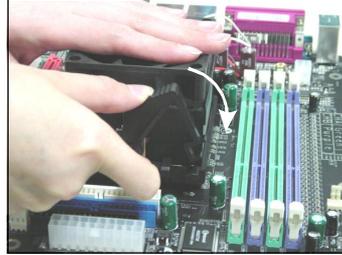
retention mechanism

5. Position the cooling set onto the retention mechanism.

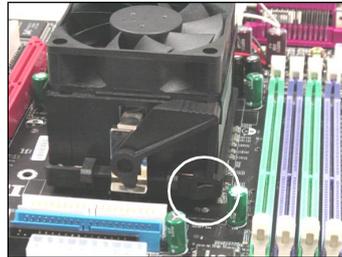
Hook one end of the clip to hook first, and then press down the other end of the clip to fasten the cooling set on the top of the retention mechanism.



7. Fasten down the lever.

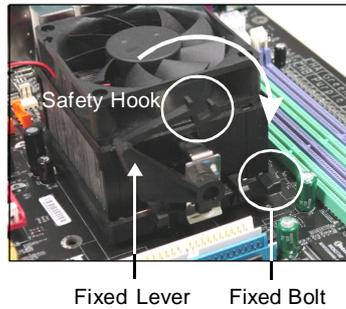


8. Make sure the safety hook completely clasps the fixed bolt of the retention mechanism.

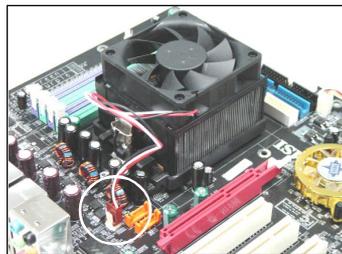


6. Locate the Fix Lever, Safety Hook and the Fixed Bolt.

Lift up the intensive fixed lever.



9. Attach the CPU Fan cable to the CPU fan connector on the mainboard.



MSI Reminds You...

While disconnecting the Safety Hook from the fixed bolt, it is necessary to keep an eye on your fingers, because once the Safety Hook is disconnected from the fixed bolt, the fixed lever will spring back instantly.

Memory

The mainboard provides 4 slots for 184-pin DDR DIMM (Double In-Line Memory Module) modules and supports the memory size up to 4GB. You can install DDR 333/400 modules on the DDR DIMM slots (DIMM 1~4).

DIMM1~DIMM4
(from left to right)



DIMM Module Combination

Install at least one DIMM module on the slots. Each DIMM slot supports up to a maximum size of 1GB. Users can install either single- or double-sided modules to meet their own needs. Users may install memory modules of different type and density on different-channel DDR DIMMs. However, **memory modules of the same type and density** are required while using dual-channel DDR, or instability may happen.

BLUE Slots		BLACK Slots		
DIMM1 (CH A)	DIMM2 (CH B)	DIMM3 (CH A)	DIMM4 (CH B)	Mode
128MB~1GB				Single Channel
		128MB~1GB		Single Channel
128MB~1GB		128MB~1GB		Single Channel
128MB~1GB	128MB~1GB			Dual Channel
		128MB~1GB	128MB~1GB	Dual Channel
128MB~1GB	128MB~1GB	128MB~1GB	128MB~1GB	Dual Channel

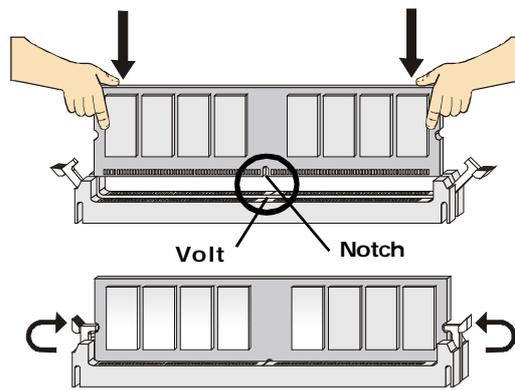


MSI Reminds You...

- The system operates **ONLY** when the DDR modules are installed in accordance with the above-mentioned memory population rules.
- In dual-channel mode, make sure that you install memory modules of **the same type and density** on DDR DIMMs.
- To enable successful system boot-up, always insert the memory modules into the **Channel A slots (DIMM1 or DIMM3) first**.
- This mainboard **DO NOT** support the memory module installed with more than 18 pieces of IC (integrated circuit).
- Do not support three memory modules.

Installing DDR Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the socket.
3. The plastic clip at each side of the DIMM slot will automatically close.



Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 24-Pin Power Connector: ATX1

This connector allows you to connect an ATX 24-pin power supply. To connect the ATX 24-pin power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

You may use the 20-pin ATX power supply as you like. If you'd like to use the 20-pin ATX power supply, please plug your power supply along with pin 1 & pin 13 (refer to the image at the right hand). There is also a foolproof design on pin 11, 12, 23 & 24 to avoid wrong installation.

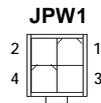


Pin Definition

ATX1		Pin Definition			
PIN	SIGNAL	PIN	SIGNAL		
1	+3.3V	13	+3.3V		
2	+3.3V	14	-12V		
3	GND	15	GND		
4	+5V	16	PS-ON#		
5	GND	17	GND		
6	+5V	18	GND		
7	GND	19	GND		
8	PWROK	20	Res		
9	5VSB	21	+5V		
10	+12V	22	+5V		
11	+12V	23	+5V		
12	NC	24	GND		

ATX 12V Power Connector: JPW1

This 12V power connector is used to provide power to the CPU.



JPW1 Pin Definition

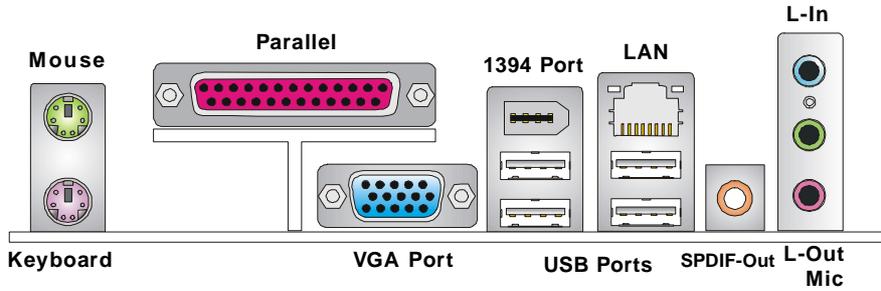
PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V



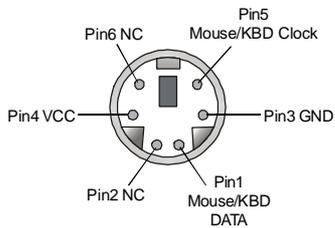
MSI Reminds You...

1. These two connectors connect to the ATX power supply and have to work together to ensure stable operation of the mainboard.
2. Power supply of 350 watts (and above) is highly recommended for system stability.
3. ATX 12V power connection should be greater than 18A.

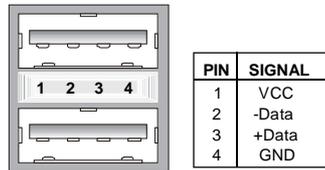
Back Panel



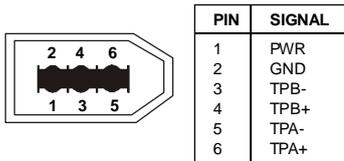
Mouse/Keyboard Connector



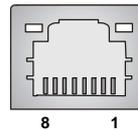
USB Ports



IEEE 1394 Port



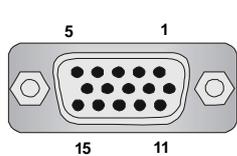
RJ-45 LAN Jack



10/100 LAN

PIN	SIGNAL	DESCRIPTION
1	TDP	Transmit Differential Pair
2	TDN	Transmit Differential Pair
3	RDP	Receive Differential Pair
4	NC	Not Used
5	NC	Not Used
6	RDN	Receive Differential Pair
7	NC	Not Used
8	NC	Not Used

VGA Port



PIN	SIGNAL
1	RED
2	GREEN
3	BLUE
4	N/C
5	GND
6	GND
7	GND
8	GND
9	+5V
10	GND
11	N/C
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Connectors

Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.



FDD1

Fan Power Connectors: CFAN1 / SFAN1

The fan power connectors support system cooling fan with +12V. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



CFAN1



SFAN1



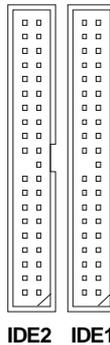
MSI Reminds You...

Please refer to the recommended CPU fans at AMD® official website or consult the vendors for proper CPU cooling fan.

ATA100 Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 66/100 function. You can connect up to four hard disk drives, CD-ROM and other IDE devices.

The Ultra ATA100 interface boosts data transfer rates between the computer and the hard drive up to 100 megabytes (MB) per second. The new interface is one-third faster than earlier record-breaking Ultra ATA/100 technology and is backwards compatible with the existing Ultra ATA interface.



IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

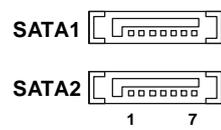


MSI Reminds You...

If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.

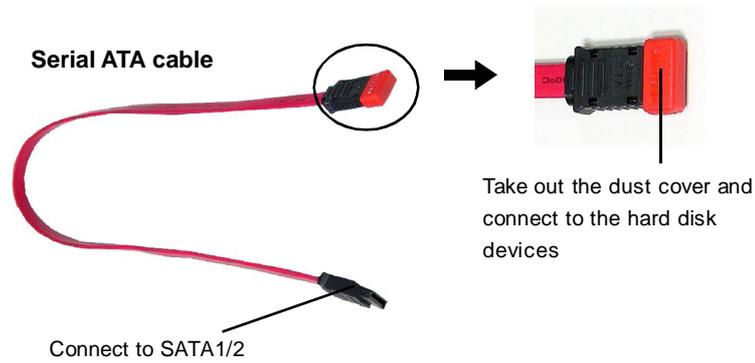
Serial ATA Connectors: SATA1~SATA2

The ATI SB400 SouthBridge supports two serial ATA connectors SATA1~SATA2. SATA1~SATA2 are high-speed Serial ATA interface ports. Each supports 1st generation serial ATA data rates of 150MB/s and is fully compliant with Serial ATA 1.0 specifications. Each Serial ATA connector can connect to 1 hard disk device.



SATA1~ SATA2 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	TXP
3	TXN	4	GND
5	RXN	6	RXP
7	GND		



MSI Reminds You...

Please do not fold the Serial ATA cable into 90-degree angle. Otherwise, data loss may occur during transmission.

CD-In Connector: JCD1

This connector is provided for CD-ROM audio.

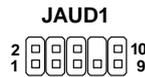
Aux Line-In Connector: JAUX1

The connector is for DVD add-on card with Line-in connector.



Front Panel Audio Connector: JAUD1

The JAUD1 front panel audio connector allows you to connect to the front panel audio and is compliant with Intel® Front Panel I/O Connectivity Design Guide.



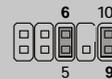
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	AUD_MIC	Front panel microphone input signal
2	AUD_GND	Ground used by analog audio circuits
3	AUD_MIC_BIAS	Microphone power
4	AUD_VCC	Filtered +5V used by analog audio circuits
5	AUD_FPOUT_R	Right channel audio signal to front panel
6	AUD_RET_R	Right channel audio signal return from front panel
7	HP_ON	Reserved for future use to control headphone amplifier
8	KEY	No pin
9	AUD_FPOUT_L	Left channel audio signal to front panel
10	AUD_RET_L	Left channel audio signal return from front panel



MSI Reminds You...

If you don't want to connect to the front audio header, pins 5 & 6, 9 & 10 have to be jumpered in order to have signal output directed to the rear audio ports. Otherwise, the Line-Out connector on the back panel will not function.



IEEE 1394 Connectors: J1394_1

The mainboard provides one 1394 pin header that allows you to connect IEEE 1394 ports via an external IEEE1394 bracket (optional).

Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	TPA+	2	TPA-
3	Ground	4	Ground
5	TPB+	6	TPB-
7	Cable power	8	Cable power
9	Key (no pin)	10	Ground

Connected to J1394_1

IEEE1394 Bracket

Foolproof design

FWH/LPC Debugging Pin Header: JLPC1

The pin header is for internal debugging only.

JLPC1 Pin Definition

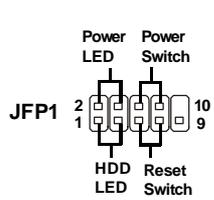
PIN	SIGNAL	PIN	SIGNAL
1	LCLK	2	Key (no pin)
3	LRST#	4	VCC3
5	LAD0	6	FID0_LRST
7	LAD1	8	VCC5
9	LAD2	10	Key (no pin)
11	LAD3	12	GND
13	LFRAME#	14	GND

JLPC1

Front Panel Connectors: JFP1

The mainboard provides one front panel connector for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

JFP1 Pin Definition

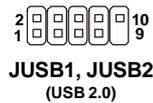


PIN	SIGNAL	DESCRIPTION
1	HD_LED_P	Hard disk LED pull-up
2	FP PWR/SLP	MSG LED pull-up
3	HD_LED_N	Hard disk active LED
4	FP PWR/SLP	MSG LED pull-up
5	RST_SW_N	Reset Switch low reference pull-down to GND
6	PWR_SW_P	Power Switch high reference pull-up
7	RST_SW_P	Reset Switch high reference pull-up
8	PWR_SW_N	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

Front USB Connectors: JUSB1 / JUSB2

The mainboard provides two standard USB 2.0 pin headers *JUSB1* & *JUSB2*. USB 2.0 technology increases data transfer rate up to a maximum throughput of 480Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as **USB HDD, digital cameras, MP3 players, printers, modems and the like.**

JUSB1 & JUSB2 Pin Definition



PIN	SIGNAL	PIN	SIGNAL
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	GND	8	GND
9	Key (no pin)	10	USBOC

Connected to JUSB1 or JUSB2



MSI Reminds You...

Note that the pins of VCC and GND must be connected correctly to avoid possible damage.

Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section will explain how to change your motherboard's function through the use of jumpers.

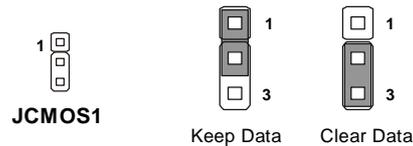
Clear BIOS Password Jumper: JPWD1

The jumper is used to clear the BIOS password. To clear the password, open the jumper and restart your computer.



Clear CMOS Jumper: JCMOS1

There is a CMOS RAM onboard that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, set the JCMOS1 (Clear CMOS Jumper) to clear data.



MSI Reminds You...

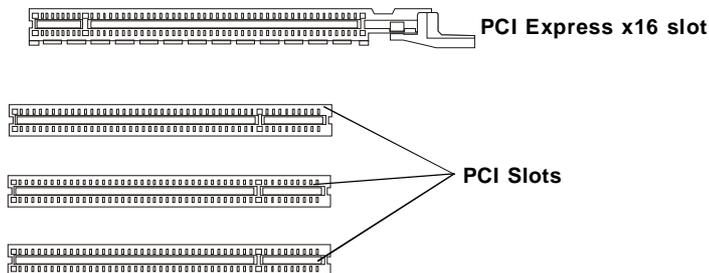
To clear CMOS you should:

1. switch off the system and short 2-3 pin of the JCMOS1;
2. switch on the system again and the message "CMOS checksum error" should appear;
3. switch off the system and return to 1-2 pin (Keep Data) position;
4. switch on again for operation.

Please avoid clearing CMOS while the system is on; it will damage the mainboard.

Slots

The motherboard provides one PCI Express x16 slot and three 32-bit PCI bus slots for expansion card.



PCI Express Slots

The PCI Express slot, as a high-bandwidth, low pin count, serial, interconnect technology, supports Intel highest performance desktop platforms utilizing the Intel Pentium 4 processor with HT Technology.

PCI Express architecture provides a high performance I/O infrastructure for Desktop Platforms with transfer rates starting at 2.5 Giga transfers per second over a PCI Express x1 lane for Gigabit Ethernet, TV Tuners, 1394 controllers, and general purpose I/O. Also, desktop platforms with PCI Express Architecture will be designed to deliver highest performance in video, graphics, multimedia and other sophisticated applications. Moreover, PCI Express architecture provides a high performance graphics infrastructure for Desktop Platforms doubling the capability of existing AGP8x designs with transfer rates of 4.0 GB/s over a PCI Express x16 lane for graphics controllers.

You can insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first.

PCI (Peripheral Component Interconnect) Slots

The PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT E#	INT F#	INT G#	INT H#
PCI Slot 2	INT F#	INT G#	INT H#	INT E#
PCI Slot 3	INT G#	INT H#	INT E#	INT F#