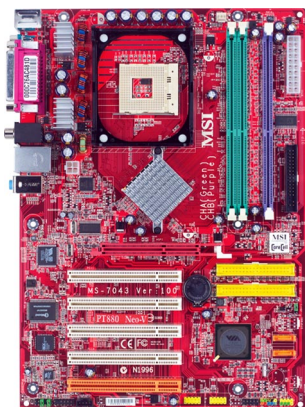
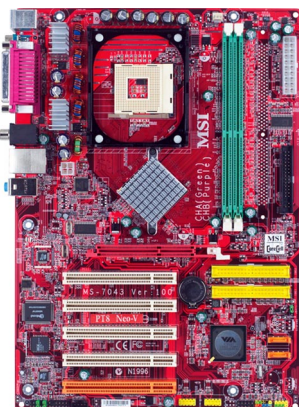




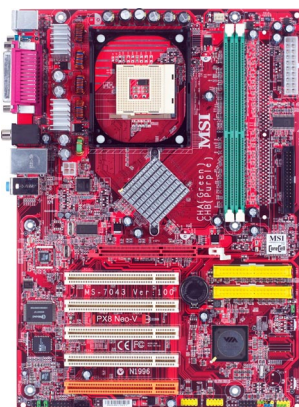
PT880 Neo-V/PT8 Neo-V/PX8 Neo-V
MS-7043 (v1.X) ATX Mainboard



PT880 Neo-V



PT8 Neo-V



PX8 Neo-V

G52-M7043X1

Manual Rev: 1.0

Release Date: March 2004



FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A 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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Award® is a registered trademark of Phoenix Technologies Ltd.

AMI® is a registered trademark of American Megatrends Inc.

Revision History

Revision	Revision History	Date
V1.0	First release for PCB 1.X	March 2004

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 website for FAQ, technical guide, BIOS updates, driver updates, and other information: 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. **DONOTLEAVE 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.

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Getting Started

Thank you for choosing the MS-7043 (PT880 Neo-V/PT8 Neo-V/PX8 Neo-V) v1.X ATX mainboards. The MS-7043 series are superior computer mainboards based on **VIA® PT880/PT800/P4X533 Northbridge & VT8237 Southbridge** for optimal system efficiency. Designed to fit the advanced **Intel® Pentium® 4** processors in 478 pin package, the MS-7043 series deliver a high performance and professional desktop platform solution.

Mainboard Specifications

CPU

- Ⓢ Supports Intel® P4 Northwood/Prescott (Socket 478) processors
- Ⓢ FSB 400 (for Northwood only), 533, 800 (for PT880/PT800 only) MHz
- Ⓢ Supports up to 3.4GHz or higher speed (Please refer to the latest online news at http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_cpu_support.php)

Chipset

- Ⓢ VIA® PT880 chipset (for PT880 Neo-V)
 - Supports FSB 800/533/400MHz
 - Supports AGP 8X interface
 - Supports DDR 400/333/266 memory interface
- Ⓢ VIA® PT800 chipset (for PT8 Neo-V)
 - Supports FSB 800/533/400MHz
 - Supports AGP 8X interface
 - Supports DDR 400/333/266 memory interface
- Ⓢ VIA® P4X533 chipset (for PX8 Neo-V)
 - Supports FSB 533/400MHz
 - Supports AGP 8X interface
 - Supports DDR 333/266 memory interface
- Ⓢ VIA® VT8237 chipset
 - High Bandwidth V-link Client controller
 - Integrated Faster Ethernet LPC
 - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
 - Ultra DMA 66/100/133 master mode PCI EIDE controller
 - ACPI
 - Supports Serial ATA
 - Supports USB2.0

PT880 Neo-V Main Memory

- Ⓢ Supports six memory banks using three 184-pin DDR DIMMs
- Ⓢ Supports **dual-channel** memory
- Ⓢ Supports a maximum memory size up to 3GB
- Ⓢ Supports 2.5v DDR SDRAM DIMM

PT8 Neo-V/PX8 Neo-V Main Memory

- Ⓢ Supports four memory banks using two 184-pin DDR DIMMs
- Ⓢ Supports **single-channel** memory
- Ⓢ Supports a maximum memory size up to 2GB
- Ⓢ Supports 2.5v DDR SDRAM DIMM

Slots

- Ⓢ One AGP (Accelerated Graphics Port) slot supports 8x/4x (AGP 3.0) at 1.5V (3.3V not supported)
- Ⓢ Five 32-bit Master PCI bus slots (support 3.3v/5v PCI bus interface)

Onboard IDE

- Ⓢ An IDE controller integrated in the VIA® VT8237 chipset
 - Supports IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 66/100/133 operation modes
 - Can connect up to four Ultra ATA drives

Onboard Serial ATA (for PT880 Neo-V/PT8 Neo-V)

- Ⓢ Serial ATA/150 controller integrated in the VIA® VT8237 chipset
 - Up to 150MB/sec transfer rate
 - Can connect up to two Serial ATA drives

USB Interface

- Ⓢ 8 USB ports
 - Controlled by VT8237 southbridge
 - 4 ports in the rear I/O, 4 ports via the external bracket

On-Board Peripherals

- Ⓢ On-Board Peripherals include:
 - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes
 - 1 serial port (COM A)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 8 USB 2.0 ports (Rear x 4 / Front x 4)
 - 1 RJ45 LAN jack
 - 1 D-Bracket2 pinheader (Optional)
 - 1 S-Bracket pinheader (Optional)
 - 1 Line-In / Line-Out /Mic
 - 1 Coaxial SPDIF out (Optional)

Audio

- Ⓢ AC97 link controller integrated in VT8237
- Ⓢ VIA® VT1617 6-channel audio codec
 - Compliance with AC97 v2.2 Spec
 - Meets PC2001 audio performance requirement

PT880 Neo-V LAN

- Ⓢ VIA® VT8237 integrated MAC
- Ⓢ VIA® VT6122 Gigabit LAN controller

PT8 Neo-V/PX8 Neo-V LAN

- Ⓢ VIA® VT8237 integrated MAC
- Ⓢ VIA® VT6103L 10/100 PHY

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

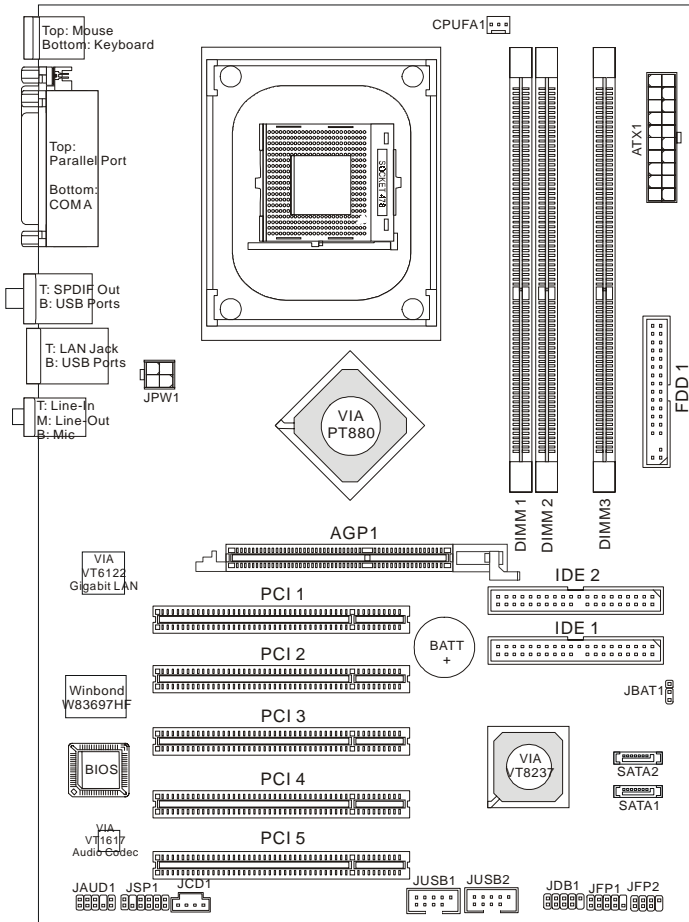
Dimension

- Ⓢ ATX Form Factor: 30.5cm x 19.5cm

Mounting

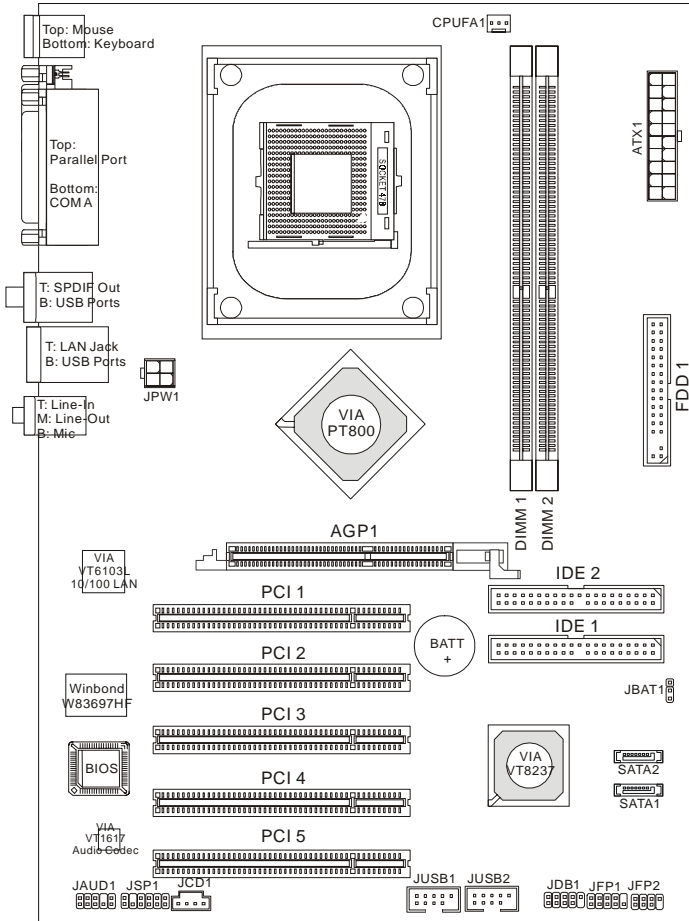
- Ⓢ 6 standard mounting holes

Mainboard Layout



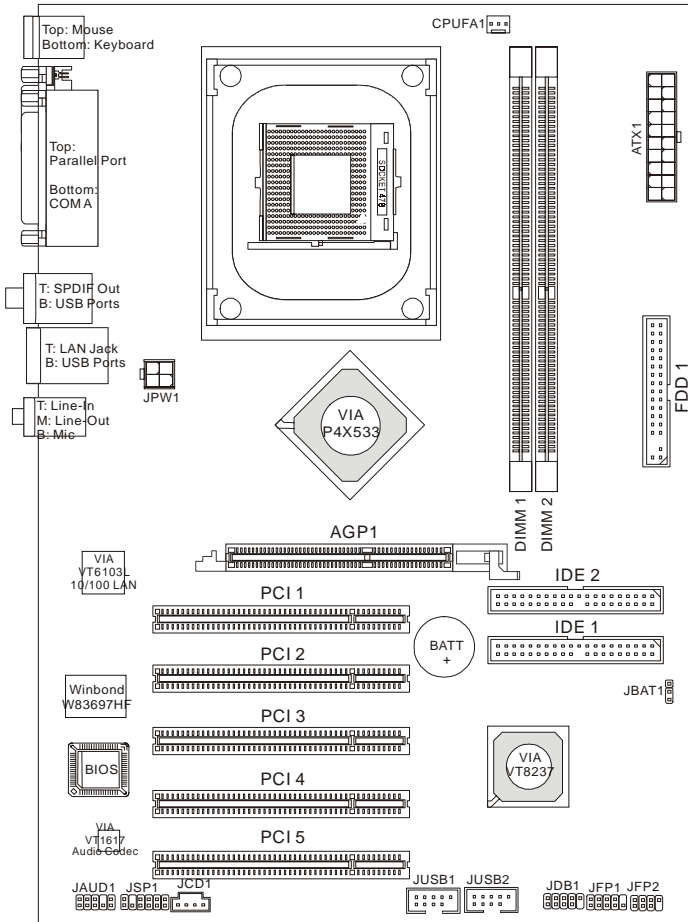
PT880 Neo-V (MS-7043 v1.X) ATX Mainboard

- VIA® PT880 Northbridge
- VIA® VT6122 Gigabit LAN
- 2 Serial ATA connectors
- 3 DDR DIMMs up to 3 GB



PT8 Neo-V (MS-7043 v1.X) ATX Mainboard

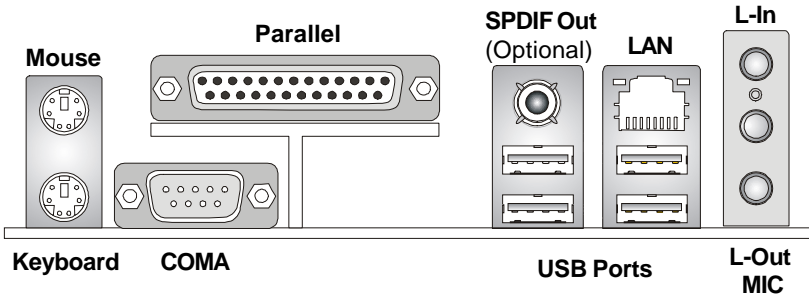
- VIA® PT800 Northbridge
- VIA® VT6103L 10/100Mbps LAN
- 2 Serial ATA connectors
- 2 DDR DIMMs up to 2 GB



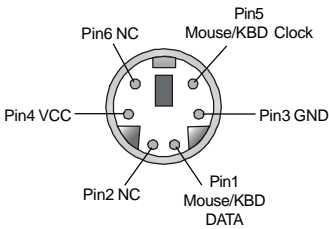
PX8 Neo-V (MS-7043 v1.X) ATX Mainboard

- VIA® P4X533 Northbridge
- VIA® VT6103L 10/100Mbps LAN
- 2 DDR DIMMs up to 2 GB

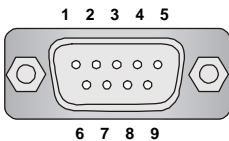
Back Panel



Mouse/Keyboard Connector

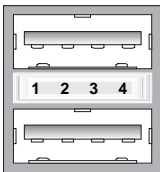


Serial Port



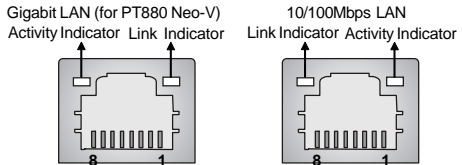
PIN	SIGNAL
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

USB Ports



PIN	SIGNAL
1	VCC
2	-Data
3	+Data
4	GND

RJ-45 LAN Jack



Gigabit LAN (for PT880 Neo-V)

PIN	SIGNAL	DESCRIPTION
1	D0P	Differential Pair 0+
2	D0N	Differential Pair 0-
3	D1P	Differential Pair 1+
4	D2P	Differential Pair 2+
5	D2N	Differential Pair 2-
6	D1N	Differential Pair 1-
7	D3P	Differential Pair 3+
8	D3N	Differential Pair 3-

10/100 LAN (for PT8 Neo-V/PX8 Neo-V)

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

2

Hardware Setup

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

Central Processing Unit: CPU

The mainboard supports Intel® Pentium® 4 processors in the 478 pin package. The mainboard uses a CPU socket called PGA478 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.

CPU Core Speed Derivation Procedure

If	CPU Clock	=	200MHz
	Core/Bus ratio	=	12
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	200MHz x 12
		=	2.4 GHz

Memory Speed/CPU FSB Support Matrix

FSB \ Memory	DDR266	DDR333	DDR400	DDR433	DDR466
FSB400	OK	N/A	N/A	N/A	N/A
FSB533	OK	OK	N/A	N/A	N/A
FSB800	OK	OK	OK	OK*	OK*

Note:

1. *: Overclocking specifications
2. FSB800 applies to PT880/PT800 only



MSI Reminds You...

Overheating

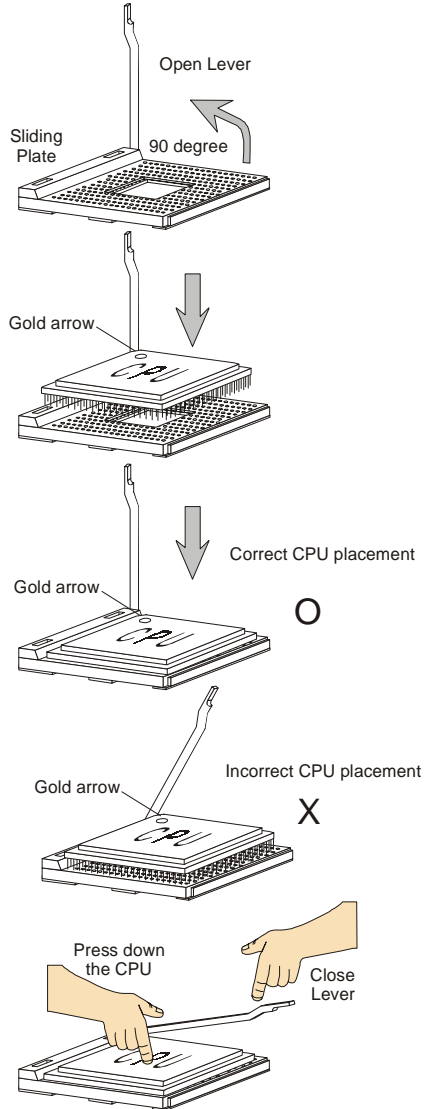
Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

Overclocking

*This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal settings 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 478

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. The gold arrow should point towards the lever pivot. The CPU can only fit in the correct orientation.
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.

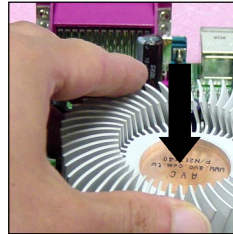
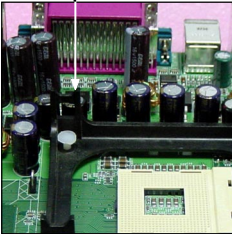


Installing the CPU Fan

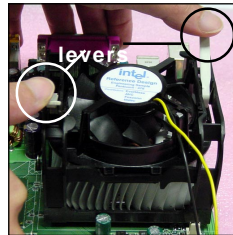
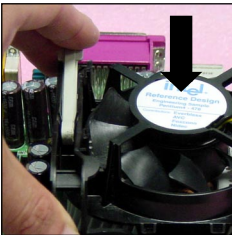
As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly important. To dissipate heat, you need to attach the CPU cooling fan and heatsink on top of the CPU. Follow the instructions below to install the Heatsink/Fan:

1. Locate the CPU and its retention mechanism on the motherboard.
2. Position the heatsink onto the retention mechanism.

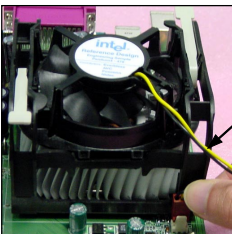
retention mechanism



3. Mount the fan on top of the heatsink. Press down the fan until its four clips get wedged in the holes of the retention mechanism.
4. Press the two levers down to fasten the fan. Each lever can be pressed down in only ONE direction.



5. Connect the fan power cable from the mounted fan to the 3-pin fan power connector on the board.



fan power cable

Memory

The PT880 Neo-V provides 3 slots for 184-pin, 2.5V DDR DIMM and supports up to 3GB memory size. You can install DDR266/DDR333/DDR400/DDR433/DDR466 SDRAM modules on the DDR DIMM slots (DIMM 1~3).

The PT8 Neo-V & PX8 Neo-V provide 2 slots for 184-pin, 2.5V DDR DIMM and supports up to 2GB memory size. You can install DDR266 / DDR333 / DDR400 (for PT8 Neo-V only) / DDR433 (for PT8 Neo-V only)/DDR466 (for PT8 Neo-V only) SDRAM modules on the DDR DIMM slots (DIMM 1~2).

To operate properly, at least one DIMM module must be installed. **Please note that DDR433/DDR466 are overclocking specs for PT880 Neo-V/PT8 Neo-V only.**

DDR DIMM Slots

(DIMM 1~3, from left to right)
 Channel A: DIMM1 & DIMM2 (green)
 Channel B: DIMM3 (purple, for PT880 only)



Memory Population Rules

Install at least one DIMM module on the slots. Each DIMM slot supports up to a maximum size of 1GB. You can install either single- or double-sided modules to meet your own needs.

The PT880 Neo-V supports dual-channel mode and the PT8 Neo-V & PX8 Neo-V support only single-channel mode. Users may install memory modules of different types and density under single-channel mode. *Under dual-channel mode, however, please make sure that you install memory modules of **the same type and density** on DDR DIMMs “in pairs” -- {DIMM1 & DIMM3} or {DIMM2 & DIMM3} to ensure system stability.*

Memory modules can be installed in any combination as follows:

DIMM1	DIMM2	DIMM3	System Density	Mode
128MB~1GB			128MB~1GB	S
	128MB~1GB		128MB~1GB	S
		128MB~1GB	128MB~1GB	S (for PT880 only)
128MB~1GB	128MB~1GB		256MB~2GB	S
128MB~1GB		128MB~1GB	256MB~2GB	D (for PT880 only)
	128MB~1GB	128MB~1GB	256MB~2GB	D (for PT880 only)
128MB~1GB	128MB~1GB	128MB~1GB	384MB~3GB	S (for PT880 only)

S: Single-Channel Mode D: Dual-Channel Mode

Please refer to http://www.msi.com.tw/program/products/mainboard/mbd/pro_mbd_trp_list.php for compatible DDR modules.

Power Supply

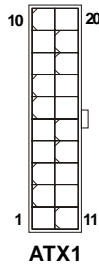
The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: ATX1

This connector allows you to connect to an ATX power supply. To connect to the ATX 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.

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

ATX1 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V



MSI Reminds You...

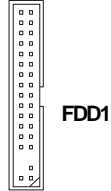
1. Power supplies of 300watt (and up) are highly recommended for system stability.
2. Please refer to the Intel/AMD websites for recommended power supplies.

Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, USB Ports and CPU/System/Power Supply FAN.

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.



S-Bracket (SPDIF) Connector: JSP1 (Optional)

The connector allows you to connect a S-Bracket for Sony & Philips Digital Interface (SPDIF). The S-Bracket offers 2 SPDIF jacks for digital audio transmission (one for optical fiber connection and the other for coaxial), and 2 analog Line-Out jacks for 4-channel audio output.

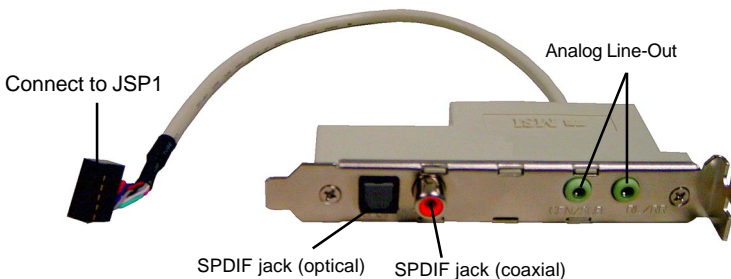


To attach the fiber-optic cable to optical SPDIF jack, you need to remove the plug from the jack first. The two SPDIF jacks support *SPDIF output* only.

JSP1 Pin Definition

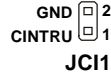
PIN	SIGNAL	DESCRIPTION	PIN	SIGNAL	DESCRIPTION
1	VCC5	VCC 5V	2	VDD3	VDD 3.3V
3	SPDFO	S/PDIF output	4	(No Pin)	Key
5	GND	Ground	6	SPDFI	S/PDIF input
7	LFE-OUT	Audio bass output	8	SOUT-R	Audio right surrounding output
9	CET-OUT	Audio center output	10	SOUT-L	Audio left surrounding output
11	GND	Ground	12	GND	Ground

Optional S-Bracket



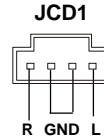
Chassis Intrusion Switch Connector: JCI1 (Optional)

This connector is connected to a 2-pin chassis switch. If the chassis is opened, the switch will be short. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.



CD-In Connector: JCD1

The connector is for CD-ROM audio connector.

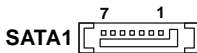
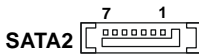


Serial ATA RAID 0, 1 Connectors: SATA1, SATA2 (for PT880/PT8 Neo-V)

The southbridge VIA® VT8237 provides a hybrid solution that combines two independent SATA ports for support of up to two Serial ATA (Serial ATA RAID) drives and supports RAID levels 0 or 1 for easy management of the storage subsystems. Both connectors support 1st generation serial ATA data rate of 150 MB/s and are fully compliant with Serial ATA 1.0 specifications.

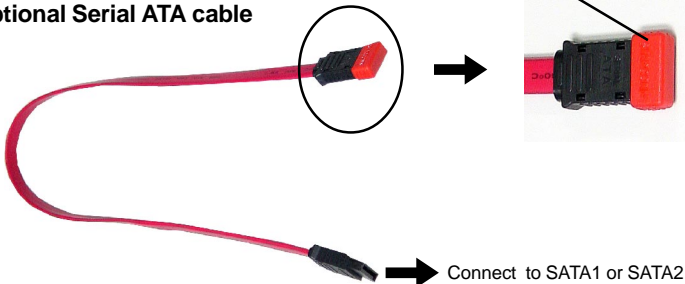
SATA1/2 Pin Definition

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



Take out the dust cover and connect to the hard disk devices

Optional Serial ATA cable

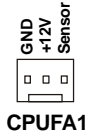


MSI Reminds You...

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

Fan Power Connector: CPUFA1

The CPUFA1 (processor fan) supports system cooling fan with +12V. It supports three-pin head connector. 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 onboard, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.



MSI Reminds You...

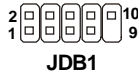
Always consult the vendors for proper CPU cooling fans.

D-Bracket™ 2 Connector: JDB1 (Optional)

The mainboard comes with a JDB1 connector for you to connect to D-Bracket™ 2. D-Bracket™ 2 is a USB Bracket that supports both USB1.1 & 2.0 spec. It integrates four LEDs and allows users to identify system problems through 16 various combinations of LED signals.

JDB1 Pin Definition

Pin	Signal
1	DBG1 (high for green color)
2	DBR1 (high for red color)
3	DBG2 (high for green color)
4	DBR2 (high for red color)
5	DBG3 (high for green color)
6	DBR3 (high for red color)
7	DBG4 (high for green color)
8	DBR4 (high for red color)
9	Key
10	NC

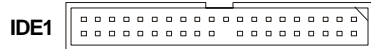
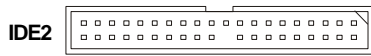


Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100/133 controller that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100/133 function. You can connect up to four hard disk drives, CD-ROM, 120MB Floppy and other devices.

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...

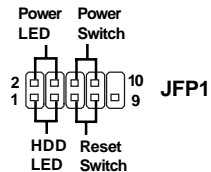
If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.

Front Panel Connectors: JFP1 & JFP2

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

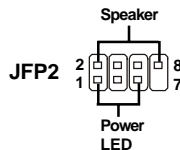
JFP1 Pin Definition

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.



JFP2 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	SPK-
3	SLED	4	BUZ+
5	PLED	6	BUZ-
7	NC	8	SPK+

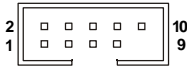


Front USB Connectors: JUSB1 & JUSB2 (Optional)

The mainboard provides two USB 2.0 pin headers *JUSB1* & *JUSB2* (Optional) that are compliant with Intel® I/O Connectivity Design Guide. 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.**

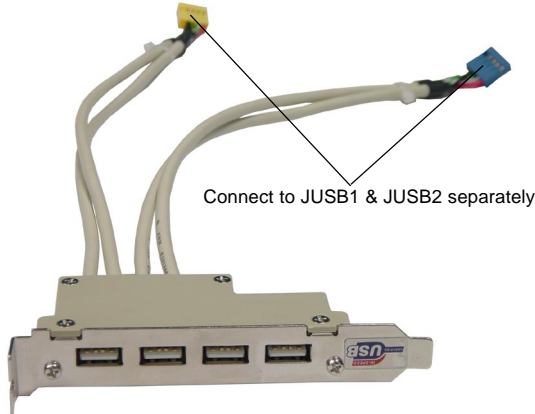
JUSB1 & JUSB2 Pin Definition

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



JUSB1/ JUSB2
(USB 2.0/Intel spec)

4-Port USB 2.0 Bracket (Optional)



2-Port USB 2.0 Bracket (Optional)

Connect to JUSB1/JUSB2



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.

JAUD1 Pin Definition



JAUD1

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.

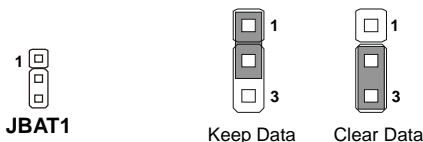


Jumpers

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 CMOS Jumper: JBAT1

There is a CMOS RAM on board 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, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:



MSI Reminds You...

You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

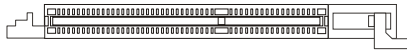
Slots

The mainboard provides one AGP slot and five 32-bit PCI bus slots.

AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory. The slot supports 8x/4x AGP card.

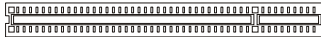
AGP Slot



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 Slot



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 INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#
PCI Slot 4	INT D#	INT A#	INT B#	INT C#
PCI Slot 5	INT B#	INT C#	INT D#	INT A#

3

BIOS Setup

This chapter provides Frequency/Voltage Control information on the BIOS Setup program and allows you to configure the system for optimum use. You may need to run the Setup program when:

- ✧ An error message appears on the screen during the system booting up, and requests you to run SETUP.
- ✧ You want to change the default settings for customized features.

Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format:

A6380MS V1.0 091096 where:

1st digit refers to BIOS maker as A = AMI(R) W = AWARD(R).

2nd - 5th digit refers to the model number.

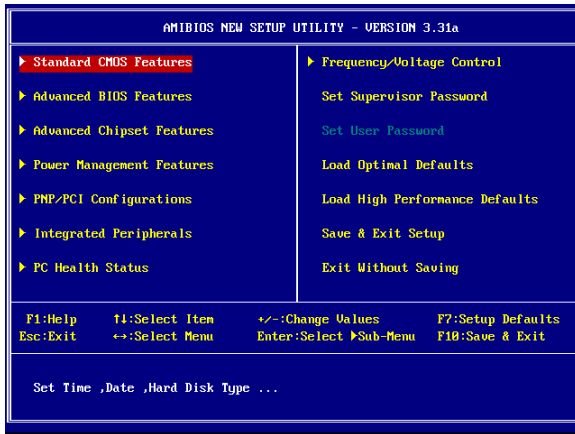
6th - 7th digit refers to the customer as MS = all standard customers.

V1.0 refers to the BIOS version.

091096 refers to the date this BIOS was released.

For detailed BIOS setup information, please refer to our website at: <http://www.msi.com.tw>.

The Main Menu



Standard CMOS Features

Use this menu for basic system configurations, such as time, date etc.

Advanced BIOS Features

Use this menu to setup the items of AMI® special enhanced features.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Power Management Features

Use this menu to specify your settings for power management.

PNP/PCI Configurations

This entry appears if your system supports PnP/PCI.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

PC Health Status

This entry shows your PC health status.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Optimal Defaults

Use this menu to load the factory default settings for optimal & stable system performance.

Load High Performance Defaults

Use this menu to load the BIOS values for the best system performance, but the system stability may be affected.

Frequency/Voltage Control

Frequency/Voltage Control		[Setup Help]
Spread Spectrum	Enabled	
Stop Unused PCI Clock	Enabled	
Dynamic Overclocking	Disabled	
CPU Ratio Selection	8.0x	
CPU FSB Clock	200 MHz	
DRAM Clock	By SPD	
DRAM Frequency	400 MHz	
AGP Frequency (MHz)	66.9	
CPU Voltage Adjust	+0.800V	
AGP Voltage Adjust (V)	Auto	
DDR Voltage Adjust (V)	Auto	
North Bridge Voltage(V)	1.62	
South Bridge Voltage(V)	2.58	

F1:Help	F4:Select Item	+/-:Change Values	F7:Setup Defaults
Esc:Previous Menu		Enter>Select ▶Sub-Menu	F6:Hi-Performance

Spread Spectrum

When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at [Disabled] for optimal system stability and performance. But if you are plagued by EMI, set to [Enabled] for EMI reduction. Remember to disable Spread Spectrum if you are overclocking because even a slight jitter can introduce a temporary boost in clock speed which may just cause your overclocked processor to lock up.

Stop Unused PCI Clock

This item enables or disables the PCI slot clock. Setting options: [Enabled], [Disabled].

Dynamic Overclocking

Dynamic Overclocking Technology is the automatic overclocking function, included in the MSI™ newly developed CoreCell™ Technology. It is designed to detect the load balance of CPU while running programs, and to adjust the best CPU frequency automatically. When the motherboard detects that the CPU is running programs, it will speed up CPU automatically to make the program run smoothly and faster. When the CPU is temporarily suspending or staying in the low load balance, it will restore the default settings instead. Usually the Dynamic Overclocking Technology will be powered only when users' PC need to run huge amount of data like 3D games or the video process, and the CPU frequency needs to be boosted up to enhance the overall performance. Setting options:

[Disabled]	Disable Dynamic Overclocking.
[Private]	1st level of overclocking.
[Sergeant]	2nd level of overclocking.
[Captain]	3rd level of overclocking, also the default value of "Load High Performance Defaults".

- [Colonel] 4th level of overclocking.
- [General] 5th level of overclocking.
- [Commander] 6th level of overclocking.



MSI Reminds You...

1. *Even though the Dynamic Overclocking Technology is more stable than manual overclocking, basically, it is still risky. We suggest that users make sure that the CPU can afford to overclocking regularly first. If you find the PC appears to be unstable or reboot incidentally, it's better to disable the Dynamic Overclocking or to lower the level of overclocking options. By the way, if you need to conduct overclocking manually, you also need to disable the Dynamic OverClocking first.*
2. *Meanwhile, there are two functions to protect user's system from crashing.*
 - *There is a safe key "Ins" in BIOS. In case the overclocking fails, you can press "Ins" key while system rebooting to restore to the BIOS defaults.*
 - *If the system incidentally reboot for four times, the BIOS will also be restored to the defaults.*

CPU Ratio Selection

This setting controls the multiplier that is used to determine the internal clock speed of the processor relative to the external or motherboard clock speed.

CPU FSB Clock

This setting shows the current CPU Front Side Bus clock frequency.

DRAM Clock

Use this field to configure the clock frequency of the installed DRAM. Setting options:

- FSB100: [By SPD], [DDR 266 (3:4)], [DDR 333 (3:5)], [DDR 400 (1:2)], [DDR 433], [DDR 450], [DDR 466], [DDR 500]
- FSB133: [By SPD], [DDR 266 (1:1)], [DDR 333 (4:5)], [DDR 400 (2:3)], [DDR 433], [DDR 450], [DDR 466], [DDR 500]
- FSB200: [By SPD], [DDR 266 (3:2)], [DDR 333 (6:5)], [DDR 400 (1:1)], [DDR 433], [DDR 450], [DDR 466], [DDR 500]



MSI Reminds You...

The value plus a ratio (CPU: DDR) with parentheses means the non-synchronous overclocking.

DRAM Frequency

This setting shows the current frequency of DDR DRAM (read only).

AGP Frequency (MHz)

This item is used to configure the AGP frequency.

CPU Voltage Adjust

The setting allows you to adjust the CPU Vcore voltage, which depends on the CPU.

AGP Voltage Adjust (V)

AGP voltage is adjustable in the field, allowing you to increase the performance of your AGP display card when overclocking, but the stability may be affected.

DDR Voltage Adjust (V)

This setting is used to adjust the DRAM core voltage (Vcore), making overclocking possible.

North Bridge/South Bridge Voltage (V)

These two items configure the voltage of the North Bridge and the South Bridge for overclocking purposes.



MSI Reminds You...

The settings shown in different color in CPU Voltage, DDR Voltage, AGP Voltage, and North Bridge/South Bridge Voltage help to verify if your setting is proper for your system.

White: Safe setting.

Yellow: High performance setting.

Red: Not recommended setting and the system may be unstable.

*Changing CPU/DDR/AGP/North Bridge/South Bridge Voltage may result in the instability of the system; therefore, it is **NOT** recommended to change the default settings for long-term usage.*