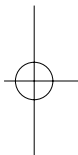
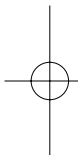




Grantsdale Dynasty

MAINBOARD MANUAL



P4M-915G/P/GVD1
P4M-910 GLD1

DOC No.: M03A002A, M03A02
M03AAB20, M03AAC20

Rev. : A0

Date : 11, 2004

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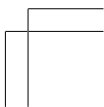
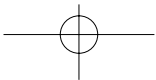
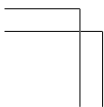


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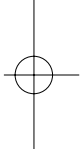
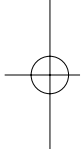
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Overview

The new microATX mainboard supports a full range of the latest generation Intel® processors. The leading edge Intel® chipset was designed to work with Prescott CPUs (up to 4.4 GHz) in the 775-pin package running at the FSB 533/800 MHz (910GL only support FSB 533). Built using leading edge technology, the processors provide a significant improvement in performance over previous processors. Four DDR 333/400 SDRAM socket allows for up to 4 GB memory capacity. Support for Ultra DMA/100 protocol and its high-speed interface further ensures that data transfer speeds are improved, especially for the long sequential transfers required by audio/visual applications.



The board comes with a versatile range of I/O features such as 2 COM port, 1 CRT port, 1 parallel port, 4 SATA ports (with RAID functions), two 1394 ports, 1 LAN, 1 PS/2 mouse and keyboard connector, 8 USB ports. The media connectors support 7.1/5.1 audio channels. In addition, the board is equipped with 1 dual channel enhanced PCI bus master IDE connector. Extra expansion is available through PCI and PCI Express slots P4M-915 G/P/D1; P4M-910GL has 3 PCIs to allow enjoyment of the CPU's benefits in internet applications, video/3D graphics performance, and so forth.

Other key features are Remote On/Off, Auto Power Failure Recovery, integrated temperature monitoring and system fan control. Also included are a 1st Utilities CD with enhanced drivers and a few bundled software solutions.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.



Mainboard



Floppy Drive
Cable



IDE
Cable



USB Cable
(optional)



I/O Shielding



Manual



Drivers



1394 Bracket
with Cable
(optional)



SATA Power Cable (top)
SATA Data Cable (bottom)
(optional)

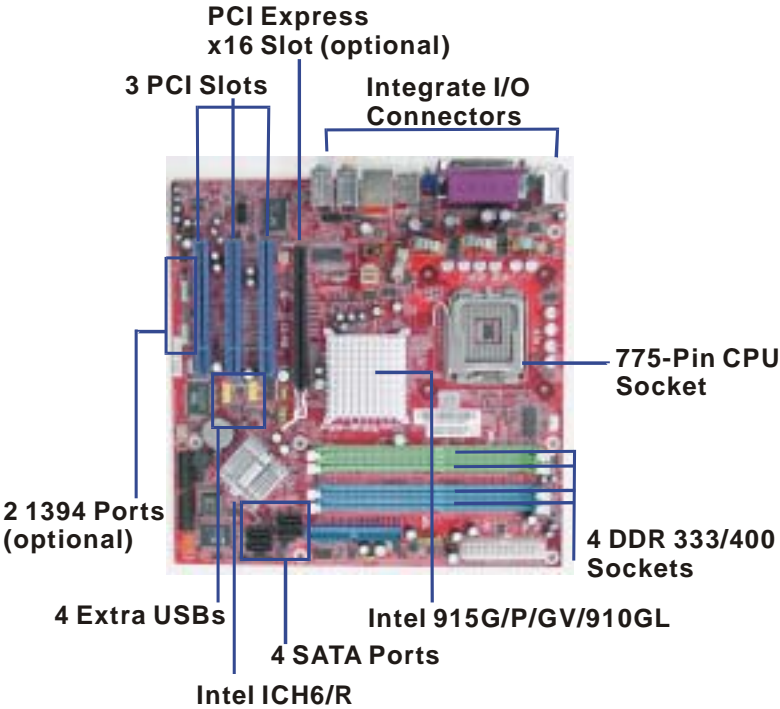


NOTE: A 1st Utilities CD, which contains patch files, onboard video/audio chip drivers, related online help and other useful information, can be found in your mainboard package.

*Please install it immediately after your Windows operating system installation is complete. Place your 1st Utilities CD in the drive and an operating menu will appear on your monitor. Please select **Auto Installation**. It will automatically detect which software tools (patch files, drivers) the mainboard needs. Press **OK** to go through the whole installation procedure in a very straight forward and easy way. It will also provide you with a custom installation feature to select the patch files and software drivers you want for the onboard chip's use. **The top menu of the 1st Utilities CD lists all the functions that are allowed by this board.***

The P4M-915G/P/GVD1/910GLD1 Mainboard

**Chapter 1
Overview**



Main Features

Chapter 1
Overview

■ CPU

Intel® Prescott-
2.8/3.0/3.2/3.4/3.6GHz and up* (FSB800)
(* not tested yet)
2.66/2.80/2.93 GHz and up*(FSB533)
(* not tested yet)

■ Chipset

North Bridge: Intel® 915G/P/GV (FSB 800/533)
Intel® 910GL (FSB 533)
South Bridge: Intel® ICH6/R

■ Memory

4 Memory Sockets:
Support -
DDR 400/333 MHz
total Memory Size up to 4 GB

■ Expansion Slot

P4M-915G/P/GVD1 /910GLD1 - 3 PCISlots
-1 PCI Express Slot x16 (optional)

■ IDE Connection

1 IDE Connector - PIO Mode, Ultra DMA 66/100
Up to 2 Devices

■ Audio Features

High-definition integrated 8 channels, AC97 2.3 compliant
LINE_IN, FRONT_OUT, MIC_IN Jack
CEN/CFE, SIDE, REAR Jack
Front Audio Pinheaders
Codec: 880 - 7.1 Audio Channels (option 1)
Codec: 655 - 5.1 Audio Channels (option 2)

■ **I/O Ports**

- 1 COM Port
- 1 CRT Port
- 1 Parallel Port
- PS/2 Mouse and PS/2 Keyboard
- 4 SATA Ports
- 8 USB Ports
- 2 1394 Ports (optional)

■ **LAN**

- P4M-915G/P/GVD1: RTL 8100C/8110S
- P4M-910GLD1: RTL 8100C/8110S

■ **Mounting Holes**

- 9 Holes

■ **Mainboard Size**

- 9.6" x 9.6"

**Chapter 1
Overview**

Installation Procedures

The mainboard has several user-adjustable jumpers that allow you to configure the system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you must complete the following steps:

- Step 1 - **Set system jumpers.**
- Step 2 - **Install memory modules.**
- Step 3 - **Install the Central Processing Unit (CPU).**
- Step 4 - **Install expansion cards.**
- Step 5 - **Connect ribbon cables, cabinet wires and power supply.**
- Step 6 - **Set up BIOS software.**
- Step 7 - **Install supporting software tools.**



WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the sensitive components, you should follow the following precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads or circuitry.
3. Wear an anti-static wrist strap.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

1.) Set System Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A **1** is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin(s) according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins.



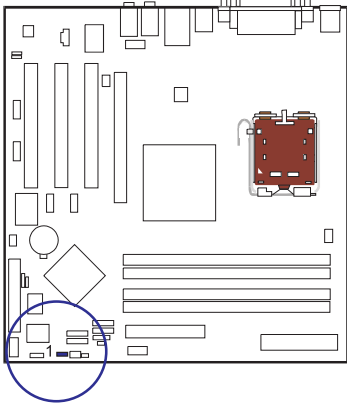
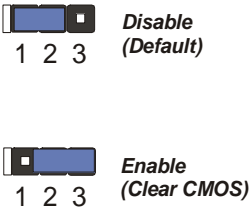
NOTE: Users are not encouraged to change to jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

Clear CMOS

The CMOS RAM is powered by the onboard button cell battery.

To clear the RTC data:

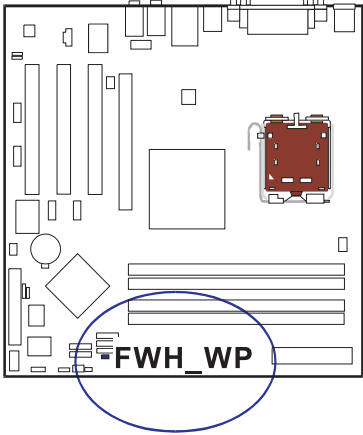
- (1) Turn off your computer;
- (2) Open the system case and disconnect the ATX power cable;
- (3) Place the jumper cap onto the pinpair 2-3 for at least 6 seconds to enable CMOS clearance;
- (4) Place the jumper cap onto the pinpair 1-2 to disable the effect of CMOS clearance;
- (5) Connect the ATX power cable and close the system case;
- (6) Turn on your computer until *CMOS checksum error* appears;
- (7) Hold down the *Delete* key as it boots;
- (8) Enter the BIOS Setup to re-enter user preferences.



Chapter 2
Installation
Procedures

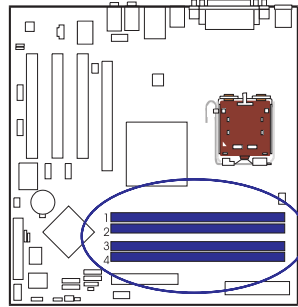
FWH_WP

The jumper helps to prevent the boot block table area in the BIOS ROM from being overwritten by mistake.



2.) Install Memory Modules

1. Locate DDR DIMM sockets on the mainboard.



2. Install DDR DIMM straight down into socket 1, using both hands, then socket 2, and so forth.



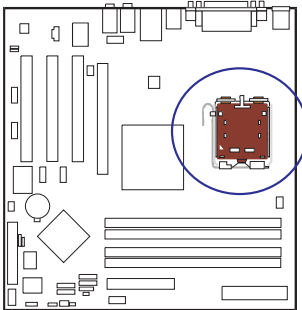
3. The clip on both ends of the socket will close to hold the DDR DIMM in place when the DDR DIMM reaches the bottom of the socket.

Press the clips outward with both hands to remove the DIMM.

3.) Install the CPU

The mainboard has built-in Switching Voltage Regulator to support CPU Vcore autodetection. That is, It has the ability to detect and recognize the CPU health condition from the BIOS Setup Screen.

The procedure below shows you how to install your CPU, its fan and heatsink. Before you begin, locate the CPU socket on the mainboard.



Chapter 2
Installation
Procedures

1. Swing the lever upward to 90 degrees.



2. Install the CPU and make sure of the pin 1 orientation by aligning the socket corner marking with the socket corner closest to the lever tip. Do not insert the CPU by force. Make sure the processor is fully inserted into the socket on all sides.



Affix the CPU by pressing the lever downward and locking it beside the socket.

3. Place the fan with heatsink on top of the CPU and connect them of with the holes on the retention module.



NOTE:

Be sure to install a fan with a heatsink that is approved by the CPU manufacturer to avoid CPU damage. For detail information, please refer to the CPU manufacturer's website.

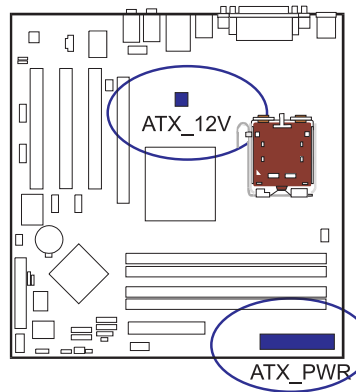


4. Fasten the fan set on the retention module.

Connect ATX Power

The 24-hole power plug is connected to the ATX power 24-pin pinheaders. (If you do not use PCI Express slot, a 20-hole power plug is fine.) The 4-hole 12V power plug (bottom right) is inserted in the ATX_12V power connector.

The plug from the power supply can only be inserted in one orientation because of the different hole sizes. Find the proper orientation and push down firmly, making sure that the pins are aligned.



4). Install Expansion Cards

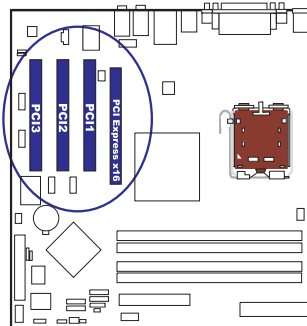
The P4M-915 G/P/D1 mainboard features one PCI Express x16 slot, and three PCI bus expansion slots. The P4M-910 GLD1 mainboard features three PCI bus expansion slots.



CAUTION:

1. Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.
2. Always observe static electricity precautions.
3. Please read Handling Precautions at the start of this manual.

1. Select an available PCI expansion slot.



2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

3. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this rocking motion until card is firmly seated inside the expansion slot. Secure the card with the screw removed in Step 2.



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5). Connect Devices

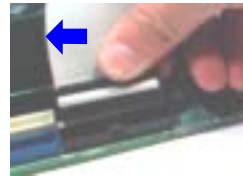
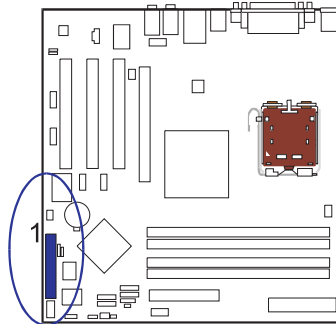
Floppy Diskette Drive Connector

This connector provides the connection with your floppy disk drive.

Insert the floppy ribbon cable (below) onto the floppy connector.



The colored stripe (indicated by the arrow, right) of the ribbon cable must be on the same side as Pin 1.



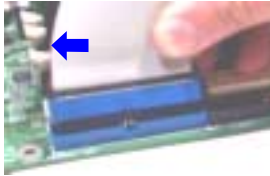
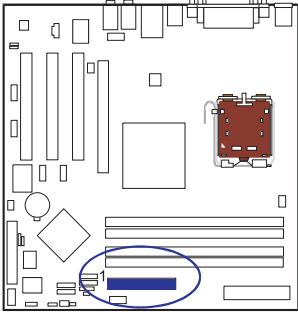
IDE Device Connectors

The one connector, IDE1 (PRIMARY), is used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives.

Insert the floppy ribbon cable (below) onto the floppy connector.



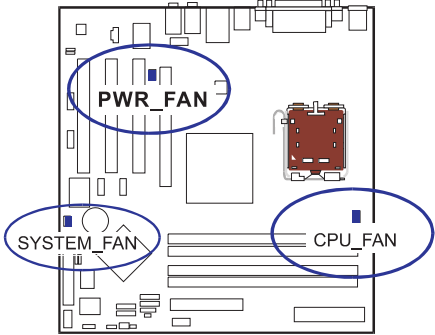
The colored stripe (indicated by the arrow, right) of the ribbon cable must be on the same side as Pin 1.



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Fan Connectors

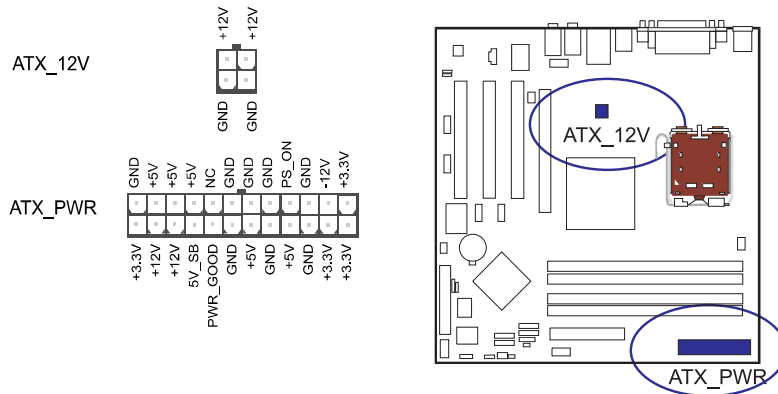
The two connectors, CPU_FAN and SYS_FAN are linked to the CPU fan and case fan, respectively. PWR_FAN can be used with the core chip cooling fan. SYS_FAN, PWR_FAN: Pin1 is GND, Pin2 is +12V, Pin3 is Signal. CPU_FAN: Pin1 is GND, Pin2 is +12V, Pin3 is Sense Signal, Pin4 is Control Signal.



Power Connectors

The 24-pin male block connector is connected to the ATX power supply. (If you do not use PCI Express slot, a 20-hole power plug is fine.) The 4-pin male block connector is for the ATX_12V power use. Both connectors are linked with your ATX power supply. The plug from the power supply can only be inserted in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

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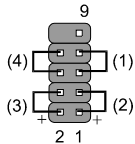


Front Panel Block Connector

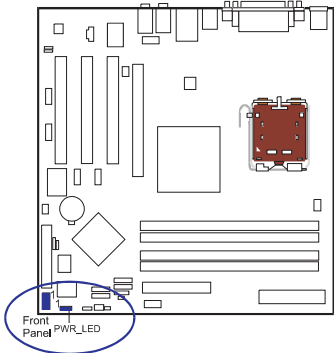
This block connector includes the connectors for linking with the Power LED (3-pin), HDD LED, power button, power/sleep/message waiting button, reset button on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wire polarities of these buttons will not affect the function.

Installation Procedures

F_PNL
(Intel Spec.)



PW_LED
(Power LED, 2/3 Pins)



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(1) **Reset Switch** is connected to the reset button. Push this switch to reboot the system instead of turning the power button off and on.

(2) **HDD LED** is connected to the IDE device indicator. This LED will blink when the hard disk drives are activated.

(3) Power (Single and Dual)/Sleep LED

Please refer to the tables below for the representations of LED states. There is also 3-Pin Power LED connector on board for those cases that have a 3-pin plug.

Single-Color (2, 3 Pins)

LED	Meaning	State
Off	Off	S4/S5
On	Full On	S0
Flash	Sleep	S1/S3

Dual-Color

LED	Meaning	State
Off	Off	S4/S5
Green	Full On	S0
Other Colors	Sleep	S1/S3

(4) **Power Button** is connected with the power button. Pushing this switch allows the system to be turned on and off rather than using the power supply button.

IR and Speaker Connector

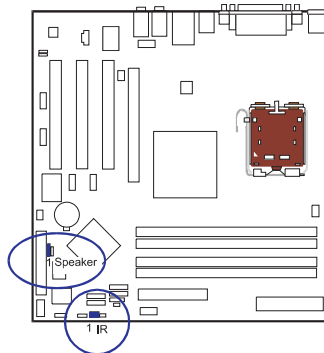
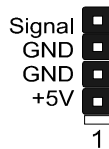
(1) **IR** is a pinheader that is used for linking with your ID device to allow transmission of data to another system that also supports the IR feature. This mainboard provides users with two types of IR pinheaders.

(2) **Speaker** is connected with the case speaker.

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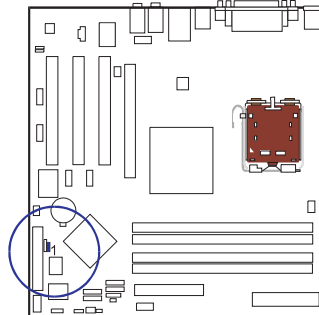
SPK (Speaker)



NOTE: To use IR functions you must adjust the BIOS features introduced in the section titled *Integrated Peripherals*, Chapter 3.

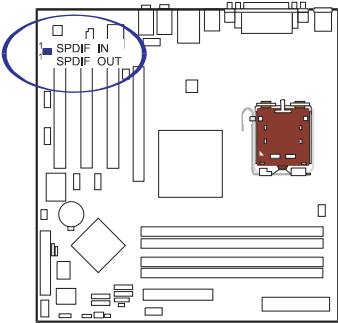
Chassis Intrusion Connector

This connector allows you to enable (or disable) system activation if and when the system out casing is being removed. A high level signal to the connector will indicate to the system that the chassis has been opened. Pin 1 is Vcc, Pin 2 is Signal, Pin 3 is GND.



SPDIF In/Out Connector

They are used for audio input and output with SPDIF spec. Pin definitions: Pin1 is 5V, Pin2 is SPDIF signal, Pin3 is GND.



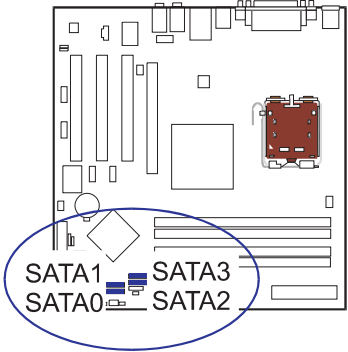
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Serial ATA Connectors

The 4 SATA connectors provide you with connections to serial ATA devices that conform to the Serial ATA specification. Serial ATA supports all ATA and ATAPI devices. The pictures below left show the two SATA cables (the top one is for power; the bottom one is for data).



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

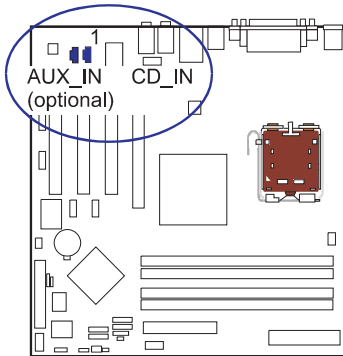


NOTE: Please read the *Integrated Peripherals* section of Chapter 3 for more details.

CD Audio-In Connectors

The connectors, CD_IN and AUX_IN, are for CD-ROM drive audio analog input use. Pin 1 is Left, Pin 2 and 3 is GND, Pin4 is Right.

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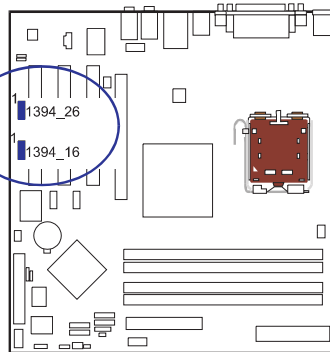
NOTE: If your board uses Codec 880, AUX_IN will not be needed.

1394 Connectors (optional)

The 2 optional 1394 pinheaders on the board provide you with two connections to peripherals which have 1394 connectors through an optional bracket with cable (see the figure below). The pin definitions of the 1394 pinheaders are listed below.

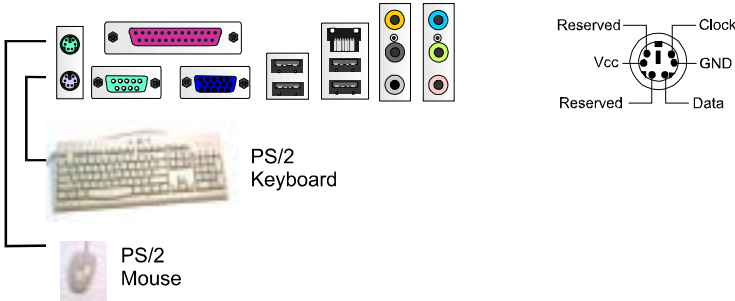


PIN	DEFINITION
1	TA +
2	TA -
3	GND
4	GND
5	TB +
6	TB -
7	+12V
8	+12V
9	Key
10	GND



PS/2 Keyboard and Mouse Connector

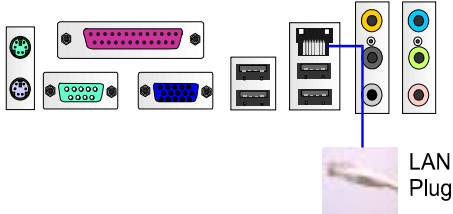
These two 6-pin female connectors (keyboard is purple and mouse is green) are used for your PS/2 keyboard and PS/2 mouse.



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RJ45 LAN Connector

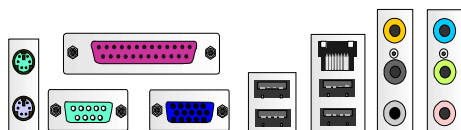
The RJ45 jack of the LAN port is used for the LAN cable plug.



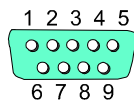
Serial Port Connectors

COM1 is teal colored 9-pin D-sub male connector and COM2 is a 9-pin male connector, allowing you to connect with devices that use serial ports, such as a serial mouse or an external modem.

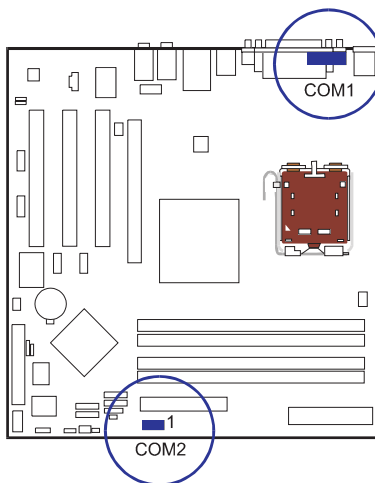
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COM1

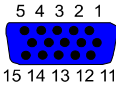
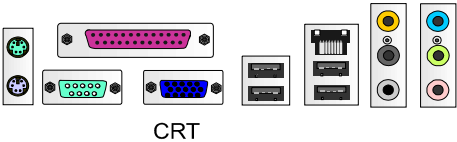


PIN	DEFINITION
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI



CRT Connector

This connector is linked to your monitor. The pinheaders pin assignments are shown at right side.

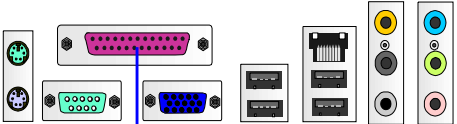


PIN	DEFINITION
1	RED
2	GREEN
3	BLUE
4	VCC
5	GND
6	GND
7	GND
8	GND
9	VCC
10	GND
11	VCC
12	DDC DATA
13	HSYNC
14	VSYNC
15	DDC CLK



Printer Connector

This burgundy-colored 25-pin D-Sub female connector is attached to your printer.



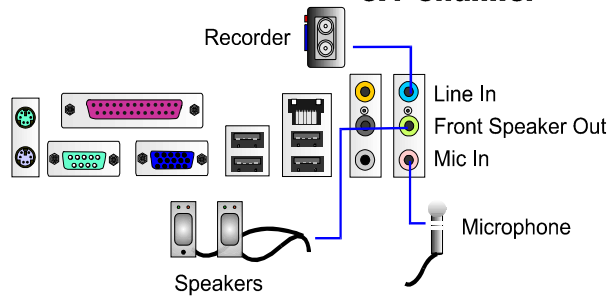
Printer

PIN	DEFINITION
1	STROBE
2 - 9	DATA 0 - 7
10	ACK#
11	BUSY
12	PE
13	SELECT
14	AUTO FEED#
15	ERR#
16	INIT#
17	SLIN#
18-25	GND

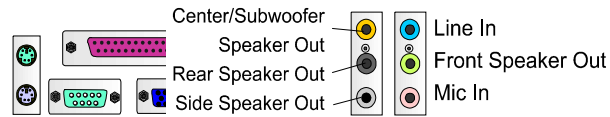
Audio I/O Jacks

This mainboard support 7.1 audio channels. The connections of 5.1 channel and 7.1 channels are presented as below.

5.1 Channel

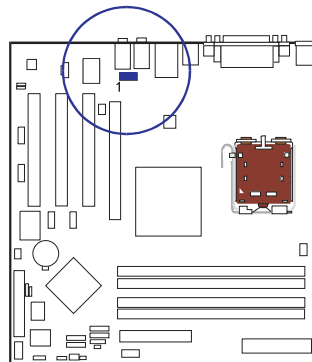


7.1 Channel



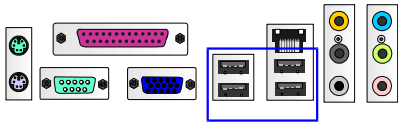
Front Audio Connector

The mainboard has a front panel audio, F_AUDIO, connector. It allows you to attach an audio device via the front panel (instead of rear panel) by a ribbon cable. Its pin definitions are presented below.



Universal Serial Bus Connectors

The mainboard has eight USB ports; four USB black jacks that are integrated on the edge of the board, and four other USB ports (pinheaders) on the board. They allow users to attach to USB devices either from the rear or front panels. Please note that your operating system must support USB 1.1/2.0 features.

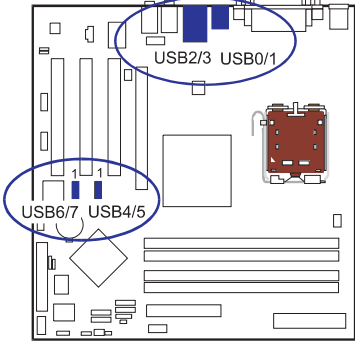


USBs

The figure below is the pin assignments of the USB4/5. Those of USB6/7 are the same.

USB4/5

1	VCC	VCC
	USB4-	USB5-
	USB4+	USB5+
	GND	GND
9		NC



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NOTE: This option is configurable only when the item (SATA Mode) is set to (IDE)

Mode	IDE Channel 0 Master	IDE Channel 0 Slave	IDE Channel 1 Master	IDE Channel 1 Slave	IDE Channel 2 Master	IDE Channel 2 Slave	IDE Channel 3 Master	IDE Channel 3 Slave
Enhanced	IDE1 Master	IDE1 Slave	None	None	SATA 1	SATA 3	SATA 2	SATA 4
Combined	IDE1 Master	IDE1 Slave	SATA 2	SATA 4	None	None	None	None
SATA Only	SATA 1	SATA 3	SATA 2	SATA 4	None	None	None	None

NOTE: This option (Enhanced Mode) does not support the Windows 98/ME operation system.

Mode	IDE Channel 0 Master	IDE Channel 0 Slave	IDE Channel 1 Master	IDE Channel 1 Slave
Enhanced	IDE1 Master	IDE1 Slave	SATA 2	SATA 4
SATA Only	SATA 1	SATA 3	IDE1 Master	IDE1 Slave

DATA IDE Mode
This feature allows users to select the DATA IDE modes of SATA. The options are: Primary, Secondary.

Onboard Device

USB Controller

Disable this option if you are not using the onboard USB 1.1 and USB 2.0 feature. The options are: Disabled, Enabled.

USB 2.0 Controller

Disable this option if you are not using the onboard USB 2.0 feature (USB 1.1 not effected). The options are: Disabled, Enabled.