



P4-EPC / B-E1, B-E2

With Socket-Based Intel® Celeron™, Intel Pentium™ IV, Mobile Intel Pentium™ IV Processor - M

P4-EPC / B-E1, B-E2

Operating Manual

Edition Feb 2006

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Manufacturer's Certification



The device complies with the requirements of the EEC directive 89/336/EEC with regard to “Electromagnetic compatibility” and 73/23/ECC “Low Voltage Directive”.

Therefore, you will find the CE mark on the device or packaging.

Tested Safety



In addition, the P4-EPC has received the UL symbol and cUL symbol.

FCC-Class A Declaration

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.

Modifications not authorized by the manufacturer may void users authority to operate this device.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NBM-003 du Canada.

Note on the laser

If your device is equipped with a CD-ROM drive, the following condition applies:

The CD ROM drive contains a light-emitting diode (LED), classified according to IEC 825-1:1993:LASER CLASS 1; it must not be opened.

Important notes

- ❑ **The P4-EPC system is a computer for manufacturer's usage.**
- ❑ It is conforming to the current safety standards for data processing equipment.
- ❑ If this device is taken from a cold environment into the operating room, moisture condensation may form. The device must be absolutely dry before being put into service; an acclimatization period of at least two hours must therefore be observed,
- ❑ This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact power socket.
- ❑ When setting up the device, ensure that the power socket on the device and the grounded-contact power socket are easily accessible.
- ❑ To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug.
- ❑ Ensure that no foreign objects (e.g. office clips) find their way into the device, as this may lead to electric shocks or short-circuits.
- ❑ In order to ensure that the device is well ventilated and to prevent over heating, do not obstruct the ventilation slots on your device.
- ❑ Never plug in or unplug data communication lines during thunderstorms.
- ❑ Protect devices from vibrations, dust, moisture and heat.
- ❑ Always dispose of used parts in an environmentally safe manner.
- ❑ In emergencies (e.g. damaged housing or damaged power cable, penetration by liquids or foreign bodies), the device must be switched off immediately, the power plug disconnected and the Customer Service of Wincor Nixdorf (WN) or your dealer must be notified.
- ❑ Your P4-EPC system is the result of modern technical innovation. So please see for according structural and technical surroundings to guarantee a faultless and efficient work of your system.

WARNINGS: The device may only be repaired by authorized qualified personnel. Unauthorized opening of the device and inexpertly carried-out repairs may not only seriously jeopardize the safety of the user, but also cancel all warranty and liability agreements.

Replacing the Lithium Battery

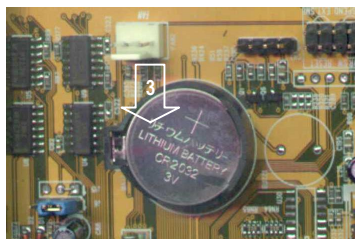
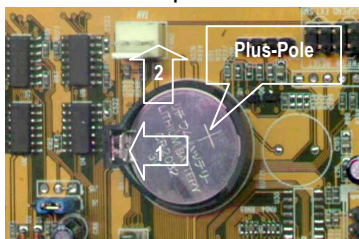
CAUTION:

Incorrect replacement of the Lithium Battery may lead to a risk of explosion

The lithium battery must be replaced by the end user only by identical batteries or types recommended by Wincor Nixdorf.

Do not throw Lithium Batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste

Make sure that you insert the Battery the right way round. The plus pole must be on the top!



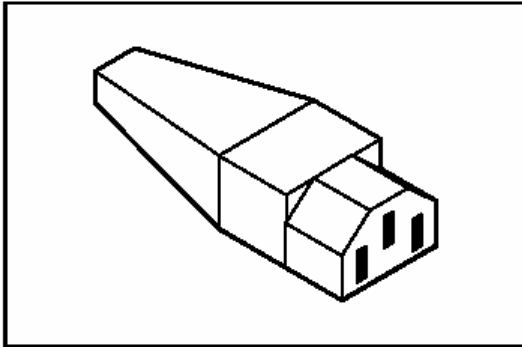
- (1) Push the Latch.
- (2) Remove the Lithium Battery from its Socket.
- (3) Insert and press a new Lithium Battery of same type in the Socket.

Power Cord Selection

IMPORTANT:

Power cord are not supplied with the equipment and consumers have to use certified power cord, for example,

- 1) CCC for China
- 2) UL, cUL and CSA for North America
- 3) Certified power cord approved by home governing body for Continental Europe, UK and Australia



The power cord for this unit has to select according to the country of destination. It must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set.

The female receptacle of the cord set must meet CEE-22 requirements (see above Figure).

For the United States and Canada

Use a UL listed and CSA labeled cord set consisting of a three-conductor cord with a maximum length of 15 feet.

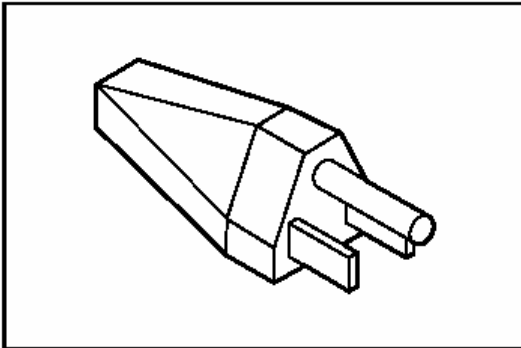
For units, which stand on a desk or table, type SVT or SJT cord sets shall be used. For units, which stand on floor, only SJT type cord sets shall be used.

The cord set must be selected according to the current rating for your unit. Please consult Table A for the selection criteria for power cords used in the United States and Canada.

Table A:

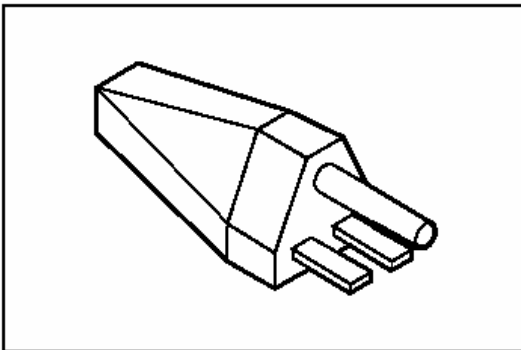
Cord Type	Size of Conductors in Cord	Maximum Current Rating of Unit
SJT	18 AWG	10 Amps
	16 AWG	12 Amps
	14 AWG	12 Amps
SVT	18 AWG	10 Amps
	17 AWG	12 Amps

For units set at 115 V:



Use a parallel blade, grounding type attachment plug rated 15 A, 125 V.

For units set at 230 V (domestic use):



Use a tandem blade, grounding type attachment plug rated 15 A, 250 V.

For units set at 230 V (outside of the United States and Canada):

Use a cord set consisting of a minimum AWG according to Table A and a grounding type attachment plug rated 15 A, 250 V. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed and should be marked HAR.

For the United Kingdom

Should the plug on the flexible cord not be of the type for your socket outlets, do not use an adapter but remove the plug from the cord and discard. Carefully prepare the end of the supply cord and fit a suitable plug.

WARNING:

THIS APPLIANCE MUST BE EARTHED.

IMPORTANT:

The wires in this main lead are colored in accordance with the following code:

Green and Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colors of the wires in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The wire which is colored Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or colored Green or Green and Yellow.
- The wire which is colored Blue must be connected to the terminal which is marked with the letter N or colored Black.
- The wire which is colored Brown must be connected to the terminal which is marked with the letter L or colored Red.

FEATURES – P4-EPC /B-E1

Main Features

PROCESSORS	<i>Intel Pentium IV, Intel Celeron, PGA478</i>
CHIP SET	<i>Intel 845G, Brookdale-G</i> <ul style="list-style-type: none">• FSB 400/533 MHz (100/133 MHz Bus Clock)• 4X AGP
BIOS	<i>2M Flash EPROM</i> <ul style="list-style-type: none">• Plug-and-Play Specification 1.1
MEMORY	<i>128 MB (default)</i> <ul style="list-style-type: none">• Two DDR DIMM socket• Support DDR133/266
EXPANSION SLOT	<ul style="list-style-type: none">• 5 x PCI• 1 x AGP (4X)
VIDEO	<i>Integrated Graphics</i> <ul style="list-style-type: none">• Intel Brookdale-G, Video Memory <i>Integrated Digital interface for Flat Panel display</i> <ul style="list-style-type: none">• WN Digital Flat Panel (DVI) Interface
AUDIO	<i>On-board AC97 Codec sound</i> <i>4W power amplifier</i>
INTERFACES, BACK PANEL	<ul style="list-style-type: none">• 1 x Keyboard, PS/2• 1 x Mouse, PS/2• 1 x Parallel, EPP/ECP• 1 x CRT• 2 x USB• Audio ports (Line-in, Line-out, Mic-in)• 2 x RS232 Standard Serial• 1 x DVI-D• 1 x LAN
INTERFACES, INTERNAL	<i>2 x IDE, Primary & secondary</i> <i>1 x Floppy</i> <i>1 x Wake-on-LAN</i> <i>2 x USB Header (1 connected to Front USB Adapter, 1 connected to Rear USB Adapter)</i> <i>CD-in</i>
INTERFACES, FRONT	<i>2 x USB</i>
CD-ROM DRIVE	<i>ATAPI 52x or DVD</i>
HARD DISK DRIVE	<i>PCI IDE, 3½" 40 GB or Higher</i>
FLOPPY DISKETTE DRIVE	<i>1.44MB, 3½"</i>

POWER INPUT	<i>Nominal voltage: 100-120V / 200-240V</i> <i>Frequency: 50 ~ 60 Hz</i> <i>Current: 6 / 3 A</i>
DIMENSIONS	<i>136 (H) x 427 (W) x 404 (D) in mm</i>

Processor Supported

INTEL PROCESSOR	PROCESSOR SPEED	FRONT SIDE BUS
INTEL PENTIUM IV	2.0GHz	400MHz
	2.8GHz	533MHz
INTEL CELERON	1.7GHz	400MHz
	2.0GHz	400MHz

Display Resolution Supported

RESOLUTION	COLORS	60Hz	72Hz	75Hz
640 x 480	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X
800 x 600	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X
1024 x 768	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X

NOTE:

It is recommended to use refresh rate of 60Hz if TFT LCD Monitor is connected to on-board DVI port.

FEATURES – P4-EPC /B-E2

Main Features

PROCESSORS	<i>Mobile Intel Pentium IV Processor-M, Intel Pentium IV, Intel Celeron, PGA478</i>
CHIP SET	<i>Intel 845GV</i> <ul style="list-style-type: none"> • FSB 400/533 MHz (100/133 MHz Bus Clock)
BIOS	<i>2M Flash EPROM</i> <ul style="list-style-type: none"> • Plug-and-Play Specification 1.1
MEMORY	<i>128 MB (default)</i> <ul style="list-style-type: none"> • Two DDR DIMM socket • Support DDR200/266
EXPANSION SLOT	<ul style="list-style-type: none"> • 5 x PCI
VIDEO	<i>Integrated Graphics</i> <ul style="list-style-type: none"> • Intel Brookdale-G, Video Memory <i>Integrated Digital interface for Flat Panel display</i> <ul style="list-style-type: none"> • WN Digital Flat Panel (DVI) Interface
AUDIO	<i>On-board AC97 Codec sound</i> <i>4W power amplifier</i>
INTERFACES, BACK PANEL	<ul style="list-style-type: none"> • 1 x Keyboard, PS/2 • 1 x Mouse, PS/2 • 1 x Parallel, EPP/ECP • 1 x CRT • 4 x USB • Audio ports (Line-in, Line-out, Mic-in) • 2 x RS232 Standard Serial • 1 x DVI-D • 1 x LAN
INTERFACES, INTERNAL	<i>2 x IDE, Primary & secondary</i> <i>1 x Floppy</i> <i>1 x Wake-on-LAN</i> <i>2 x USB Header (1 connected to Front USB Adapter, 1 connected to Rear USB Adapter)</i> <i>CD-in</i>
INTERFACES, FRONT	<i>2 x USB</i>
CD-ROM DRIVE	<i>ATAPI 52x or DVD</i>
HARD DISK DRIVE	<i>PCI IDE, 3½" 40 GB or Higher</i>

FLOPPY DISKETTE DRIVE	<i>1.44MB, 3½"</i>
POWER INPUT	<i>Nominal voltage: 100-120V / 200-240V Frequency: 50 ~ 60 Hz Current: 6 / 3 A</i>
DIMENSIONS	<i>136 (H) x 427 (W) x 404 (D) in mm</i>

Processor Supported

INTEL PROCESSOR	PROCESSOR SPEED	FRONT SIDE BUS
MOBILE INTEL PENTIUM IV PROCESSOR-M	1.7GHz	400MHz
	2.2GHz	400MHz
INTEL PENTIUM IV	2.0GHz	400MHz
	2.8GHz	533MHz
INTEL CELERON	1.7GHz	400MHz
	2.0GHz	400MHz

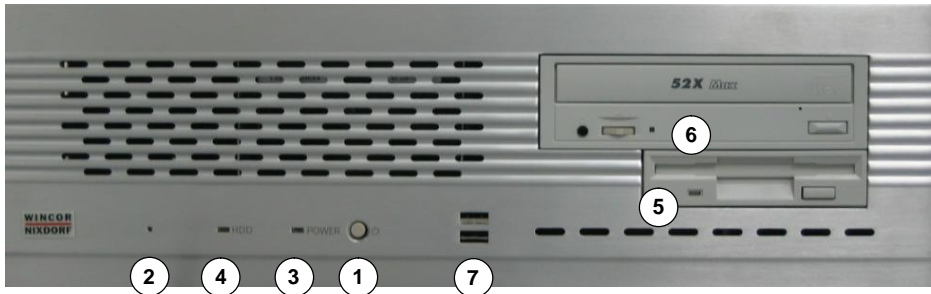
Display Resolution Supported

RESOLUTION	COLORS	60Hz	72Hz	75Hz
640 x 480	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X
800 x 600	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X
1024 x 768	256	X	X	X
	16-BIT	X	X	X
	32-BIT	X	X	X

NOTE:

It is recommended to use refresh rate of 60Hz if TFT LCD Monitor is connected to on-board DVI port.

FUNCTIONS & INDICATORS ON THE P4-EPC



1 – ON/OFF Button

In an ATX based system, the new soft touch power button replaces the main power switch that turns your system on and off. From an OFF state, you can switch the system ON by simply pressing the power button. From an ON state, pressing and holding the power button for four (4) seconds can turn OFF the system. The functions of the power button can also be altered in the Power Management section of the CMOS setup.

2 – RESET Switch

Insert a small, metal rod (an unwound paperclip for example) into this hole to perform System Reset

3 – POWER-ON Indicator

The indicator lights up green when the system unit is switched on.

4 – HARD-DISK Indicator

The indicator lights up when the Hard-Disk drive of the system unit is accessed.

5 – FLOPPY-DISK Indicator

The indicator lights up when the Floppy-Disk drive of the system unit is accessed.

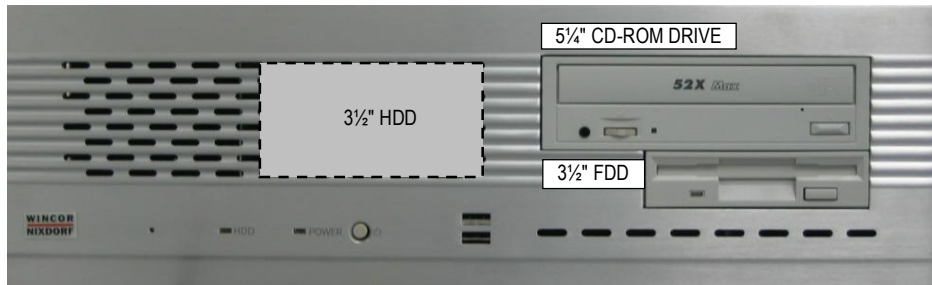
6 – CD-ROM Indicator

The indicator lights up when the CD-ROM drive of the system unit is accessed.

7 – USB Connector (Front Panel)

Two contact points are meant for connection of Universal Serial Bus (USB) Devices.

DRIVES ON THE P4-EPC



The P4-EPC has two drive slots for externally accessible drives. Two further 3.5" drive slots are available for the installation of hard disks. The following drives may be used in the P4-EPC:

- 3 1/2" drive slot for Floppy Drive
- 3 1/2" Hard-Disk Drive
- 5 1/4" drive slot for CD-ROM or DVD-ROM Drive

Floppy Drive

The 3 1/2" Floppy Drive supports capacities of up to 1.44 MB. This drive bay can also be optionally used for other 3 1/2" drives such as streamer drives.

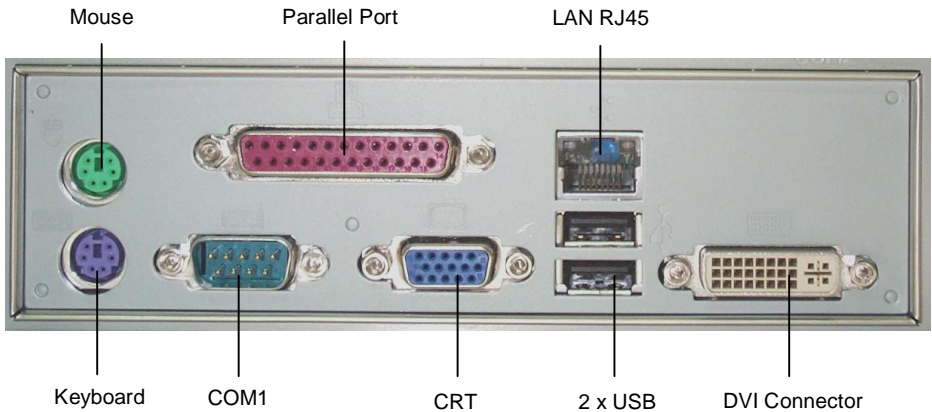
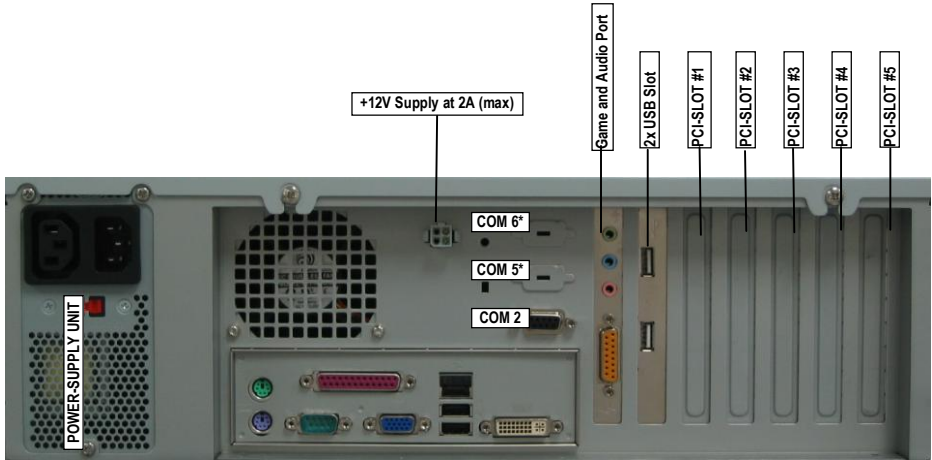
Hard-Disk Drive

P4-EPC systems can be equipped with one 3 1/2" E-IDE hard disks. The storage capacity is changed in line with market demand, but is currently at least 40GB.

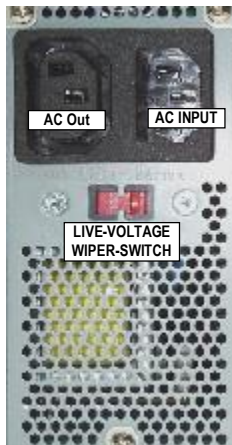
CD-ROM/DVD Drive

The P4-EPC offers an optional 5 1/4" CD-ROM or DVD-ROM drive. This drive supports the use of CD-ROM media as inexpensive, non-alterable data media for software distribution or as permanent data storage for graphics, videos or other application data.

BACK PANEL CONNECTORS ON THE P4-EPC



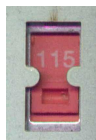
Power-Supply Unit



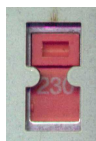
Power Supply Specification

TYPE	Standard SFX switching
NOMINAL VOLTAGE	100-120V / 200-240V
CURRENT	6 / 3 A
FREQUENCY	50 / 60 Hz
AC IN SELECTION	Wiper-Switch
AC OUT	Yes
POWER ON-OFF SWITCH	No
APPROVAL	EN61000

WARNINGS: Before connecting the P4-EPC system unit to the line voltage, if the rated voltage does not agree with the local line voltage, you must move the wiper switch to the correct position.

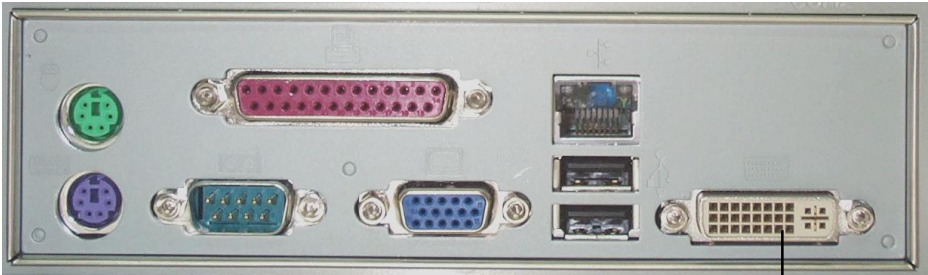


115 = 100 V TO 120 V



230 = 200 V to 240 V

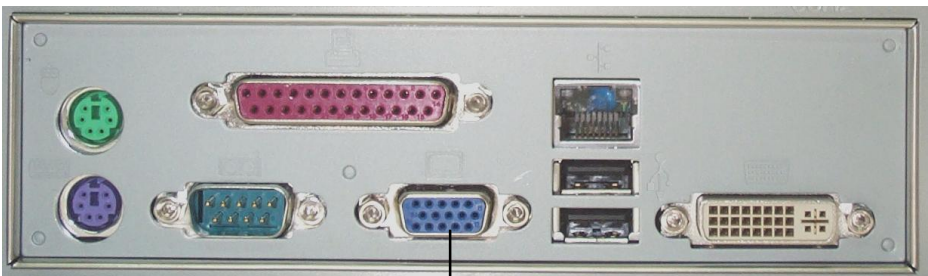
On-board DVI (TFT Flat Panel Display)



DVI-D Connector

The motherboard has an on-board DVI-D connector supporting standard DVI digital flat panel display. The on-board Silicon Image Sil164 transmitter encode the digital output from the Intel DVO interface of the 845GV to TMDS output for the DVI interface. It is capable of driving a digital display up to 1024x768 at 60Hz.

VGA Connector (Blue 15-pin VGA)

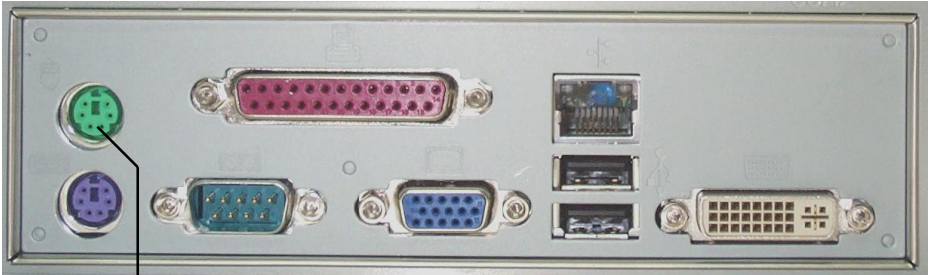


VGA Connector (15-pin)

The motherboard shall have internal graphics accelerator (Intel Brookdale-G) to provide simultaneous video output to a VGA-compatible device via an on-board 15-pin DSUB and to a TFT Flat Panel LCD display.

The internal graphics can support up to a maximum resolution of 1024x768 at 60Hz resolutions.

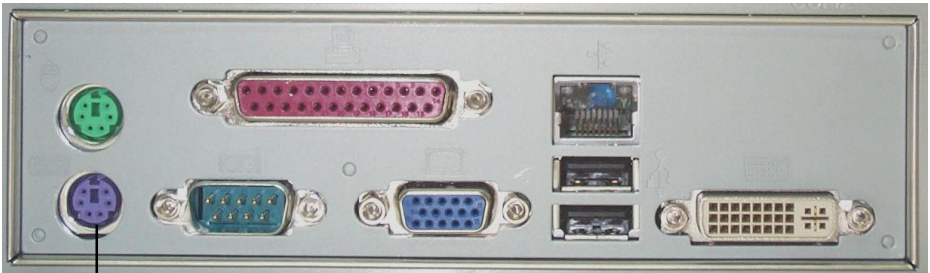
PS/2 Mouse Connector (Green 6-pin Mini-DIN)



PS/2 Mouse (6-pin Female)

This connector is for a standard Mouse using a PS/2 plug (mini DIN).

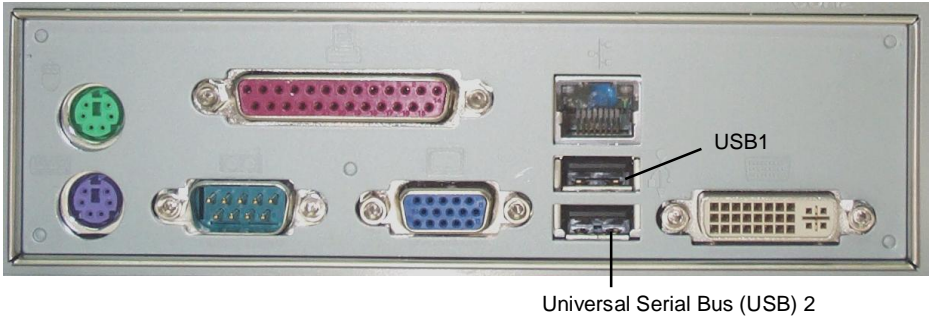
PS/2 Keyboard Connector (Purple 6-pin Mini-DIN)



PS/2 Keyboard (6-pin Female)

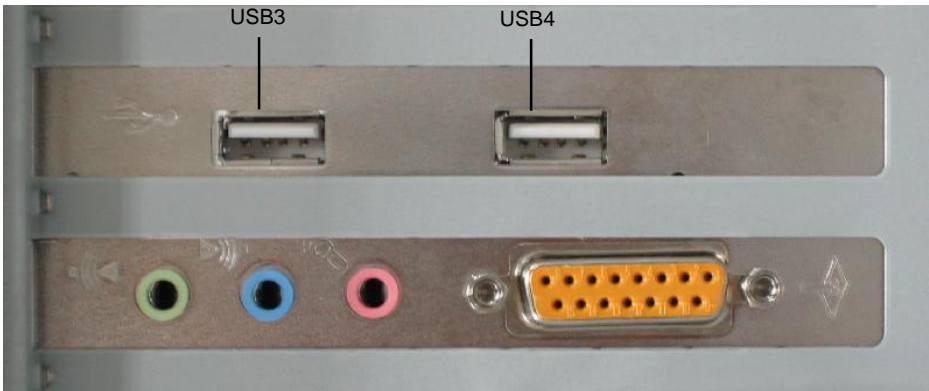
This connector is for a standard Keyboard using a PS/2 plug (mini DIN).

USB Ports 1 & 2 (Two 4-pin Universal Serial Bus)



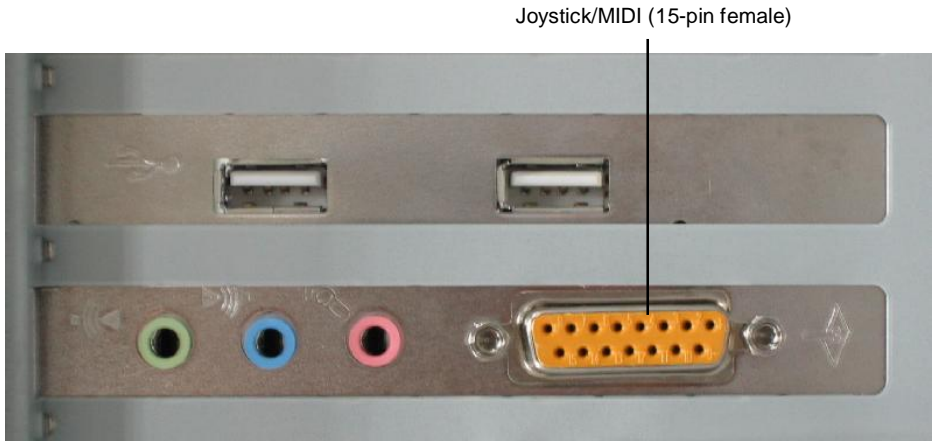
Two USB ports are available for connecting USB devices.

USB Ports 3 & 4 (Two 4-pin Universal Serial Bus)



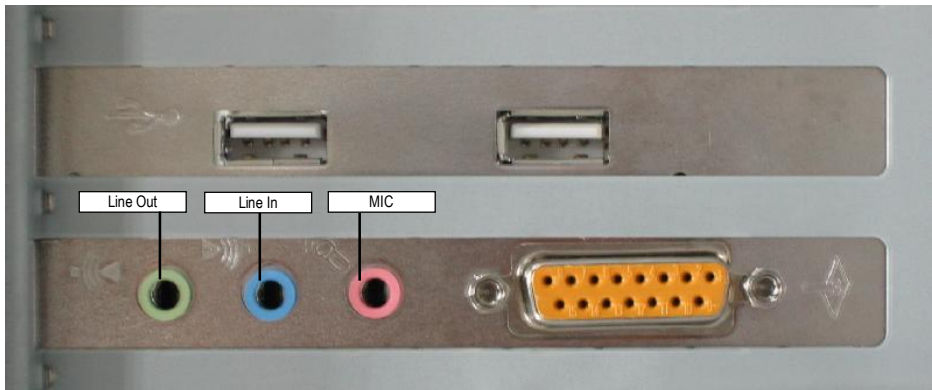
Two USB ports are available for connecting USB devices.

MIDI/Game Connector (Gold 15-pin GAME_AUDIO)



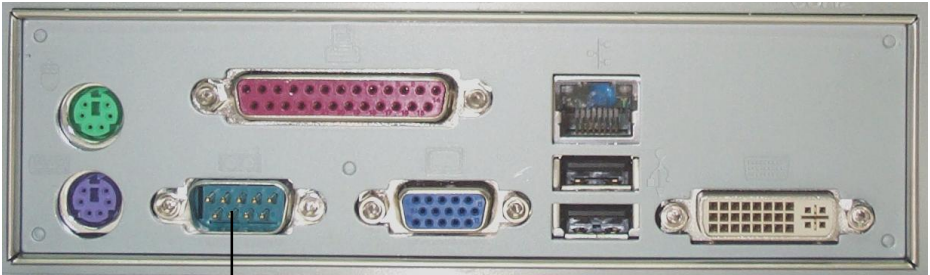
You may connect game joysticks or game-pads to this connector for playing games. Connect MIDI devices for playing or editing professional audio.

Audio Port Connectors (Three 1/8" GAME_AUDIO)



Line Out (lime) can be connected to headphones or preferably powered speakers. **Line In** (light blue) allows tape players or other audio sources to be recorded by your computer or played through the **Line Out** (lime). **Mic** (pink) allows microphones to be connected for inputting voice.

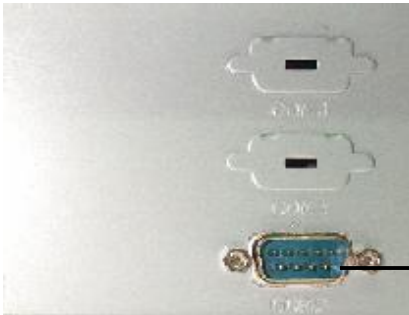
Serial Port COM1 Connector (Teal/Turquoise 9-pin Male)



COM1 Serial Port (9-pin male)

Standard Serial port COM1 is ready for a mouse or other serial devices.

Serial Port COM2 Connector (9-pin Male)

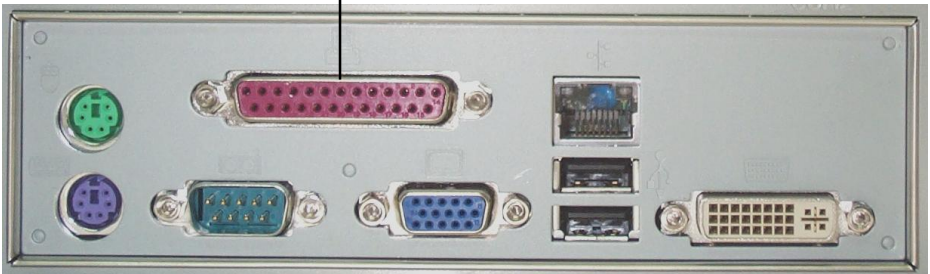


COM 2
Serial Port (9-pin male)

Standard Serial port COM2 is ready for a mouse or other serial devices. This second serial port is available using a 9-pin DSUB-Male cable assembly connected from the motherboard COM2 dual-row headers to a back panel.

Parallel Port Connector (Burgundy 25-pin PRINTER)

Parallel (Printer) Port (25-pin female)



The connector for the parallel ports which supporting standard SPP and as wells as bi-directional EPP/ECP.

Appendix

Technical data for the P4-EPC

Footprint	
Width	427 mm
Depth	404 mm
Total height	136 mm
Weight	approx. 11 kg
Climatic category	IEC 721-3-3 Class 3K3
Transport	IEC 721-3-2 Class 2K2 -2.5°C to +60°C
Storage	IEC 721-3-1 Class 1K2 +5°C to +40°C
Operating temperature	5 - 40°C
Input voltage	100 - 120 VAC 200 - 240 VAC
Power Rating	6A / 3A
Frequency of system voltage	50 / 60 Hz
Noise generation	<47 dB (A)

Model Type and Series for P4-EPC

Model Type / Series	Description
P4-EPC /B-E1	Used metal enclosure except top and bottom, with vent openings on left and rear side. With additional vent openings on front bezel. System using P195 motherboard.
P4-EPC /B-E2	Used metal enclosure except top and bottom, with vent openings on left and rear side. With additional vent openings on front bezel. System using P195+ motherboard.

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