

Quick Start Guide

Viglen Product Description: Intel D875PBZ Motherboard

Viglen Order Code: PMPBZ001

Viglen System: Genie Pro

- Product photo



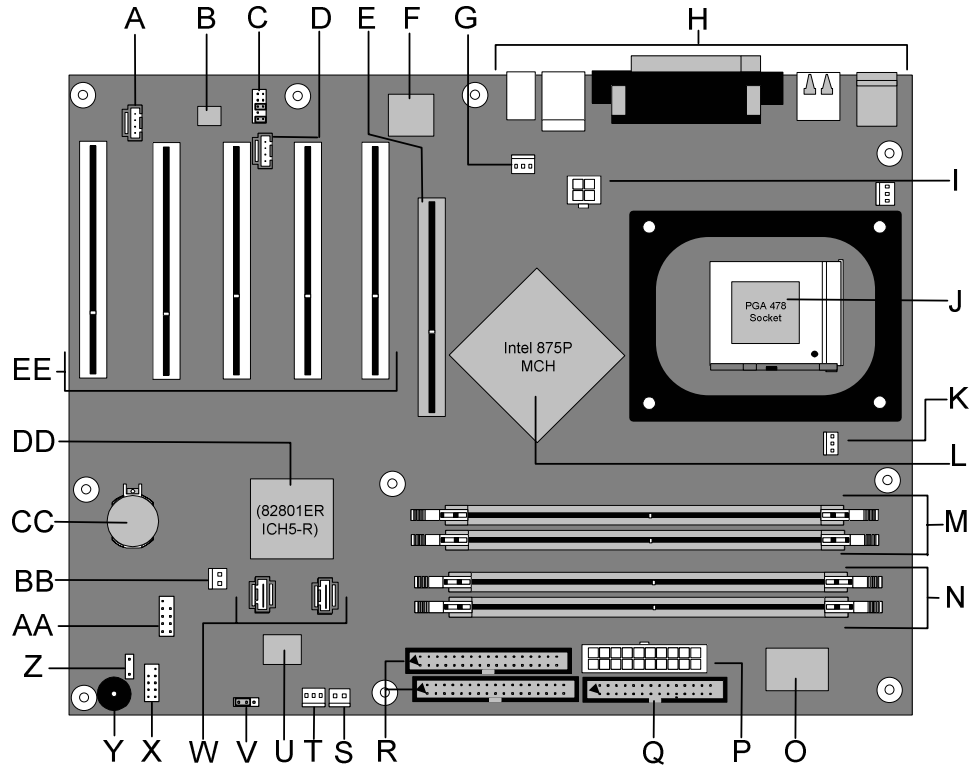
• **Product Specification**

Motherboard Form Factor	ATX (11.52 inches by 9.6 inches [292.61 millimeters by 243.84 millimeters])
Motherboard chipset	Intel ® 875P Chipset, consisting of: ·Intel ® 82875P Memory Controller Hub (MCH) ·Intel ® 82801ER I/O Controller Hub (ICH5-R) ·Intel ® 82802AC (8 Mbit) Firmware Hub (FWH)
BIOS	·Intel/AMI BIOS (resident in the Intel 82802AC FWH) ·Support for Advanced Configuration and Power Interface (ACPI), Plug and Play, and SMBIOS
CPU connector type (s370, slot1 etc)	S478
Hardware Monitor	·Hardware management ASIC ·Voltage sense to detect out of range power supply voltages ·Thermal sense to detect out of range thermal values ·Four fan connectors ·Four fan sense inputs used to monitor fan activity ·Fan speed control
Number of CPUs supported	1
If >1 does it require a terminator?	n/a
Supported CPU types (C, P3 or P4 etc)	Pentium 4 Processor with a 533/800MHz FSB
Supported CPU speeds	P4 (533 FSB): 2.4, 2.56, 2.66, 2.8, 3.06 P4 (800 FSB): 2.8 & 3.0
Front side bus speed	533 or 800 (Depends on CPU and memory setup)
Number of PCI slots	5
PCI slot speeds	32-bit/33MHz Support for PCI Local Bus Specification Revision 2.2
Number of AGP slots	1 Universal 0.8/1.5 V AGP 3.0 connector (with integrated retention mechanism) supporting 4x and 8x AGP cards
Number of AMR slots	0
Additional slots	0
On board video fitted? Type	No
Ram size?	No
Upgradeable?	No
Onboard audio fitted? Type	ADI 1985 (SoundMax)
Front facing audio header and type	Yes 1 Intel USB header and Intel front audio header "2 USB 2.0 ports and 2 Audio connectors (Line In & Out)"
Audio Upgradeable?	No
Onboard network fitted? Type	Yes, Intel ® 82547EI Platform LAN Connect (PLC) device for Gigabit (10/100/1000 Mbits/sec) Ethernet LAN connectivity
Number of network connections?	1 (RJ45)
Upgradeable?	No
Onboard SCSI fitted? Type	No

No of channels?	-	
Manufacturer?	-	
Model Number?	-	
Speed?	-	
Number of IDE channels	4 IDE	
Number of Serial ATA	2	
Maximum number of disks	6 (Chassis can only hold a maximum of 3 disks)	
Rear I/O connectors	PS/2 mouse port	RJ-45 LAN port
	PS/2 keyboard port	Audio Line In
	6 x USB 2.0 ports	Mic In
	9-pin serial port	Audio front left and right out
	Parallel port	
Memory type	184-pin DDR SDRAM DIMMs with gold plated contacts	
For RIMMs install CRIMM in empty sockets	-	
Number of memory sockets	4 (motherboard support 2 way interleaving so memory can be installed in identical pairs to improve performance)	
Maximum memory support	4GB	
Supported memory speed	DDR400 – used with 800MHz FSB CPUs DDR333 – used with 800 or 533MHz FSB CPUs ECC and non-ECC DIMMs supported	

- System Board Components

Motherboard Layout & Components



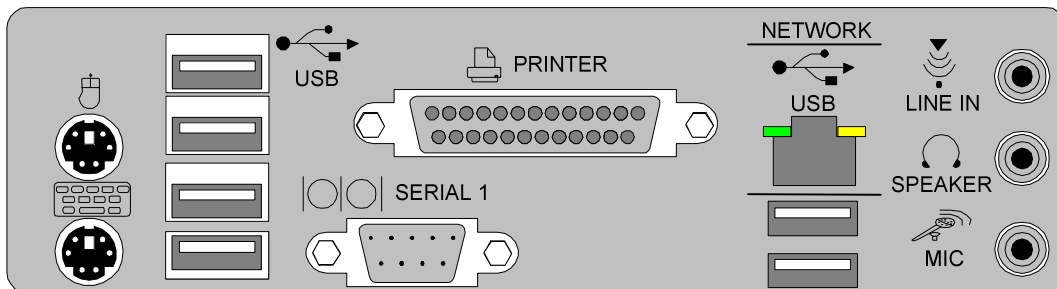
- | | | | |
|---|--------------------------------------|----|---|
| A | Auxiliary line audio input connector | Q | Diskette drive connector |
| B | Audio codec AD1985 | R | Parallel ATA IDE connectors |
| C | Front panel audio connector | S | SCSI Hard drive activity LED connections |
| D | ATAPI CD-ROM connector | T | Front chassis fan connector |
| E | AGP connector | U | Intel 82802AC Firmware HUB |
| F | Intel 82547EI Gigabit LAN PLC device | V | BIOS Setup configuration jumper block |
| G | Rear chassis fan connector | W | Serial ATA/ Serial RAID IDE connections |
| H | Back panel connectors | X | Front panel connector |
| I | +12V power connector (ATX12V) | Y | Speaker |
| J | mPGA478 processor socket | Z | Auxiliary front panel power LED connector |
| K | Processor fan connector | AA | Front panel USB connectors |
| L | Intel 82875P MCH | BB | Chassis intrusion connector |
| M | DIMM Channel A sockets | CC | Battery |
| N | DIMM Channel B sockets | DD | Intel 82801EB I/O Controller Hub (ICH5) |
| O | I/O controller | EE | PCI bus add-in card connectors |
| P | Power connector | | |

- **Back Panel Connectors**

The motherboard external IO connectors are attached to a metallic I/O shield. This shield serves several purposes:

- It protects the sensitive motherboard from any external EMC interference.
- It stops the computer from interfering with other electrical devices.
- It allows the motherboard to be easily upgraded in the future without having to resort to buying a whole new case. Simply change the I/O shield to match the motherboard.

The I/O shield provides external access to PS/2 keyboard and mouse connectors as well as one serial port, one parallel port, two USB ports, one LAN Port and the audio connectors.



Note: Power to the computer should be turned off before a keyboard or mouse are connected or disconnected.

- **Memory Configurations**

The Intel 82875P MCH component provides two features for enhancing memory throughput:

- Dual Channel memory interface. The board has two memory channels, each with two DIMM sockets, as shown in Figure 3
- Dynamic Addressing Mode. Dynamic mode minimises overhead by reducing memory accesses

Table 4 summarises the characteristics of Dual and Single Channel configurations with and without the use of Dynamic Mode.

Table 4: Characteristics of Dual/Single Channel Configurations with/without Dynamic Mode

Throughput Levels	Configurations	Characteristics
<p style="text-align: center;">Highest</p> <p style="text-align: center;">↑</p> <p style="text-align: center;">Lowest</p>	Dual Channel with Dynamic mode	All DIMMs matched (Example Configurations are shown in Figure 4)
	Dual Channel without Dynamic mode	- DIMMs matched from Channel A to Channel B - DIMMs not matched within channels (Example configurations are shown in Figure 5)
	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched with a channel (Example configurations are shown in Figure 6)
	Single Channel without Dynamic Mode	DIMMs not matched (Example configurations are shown in Figure 7)

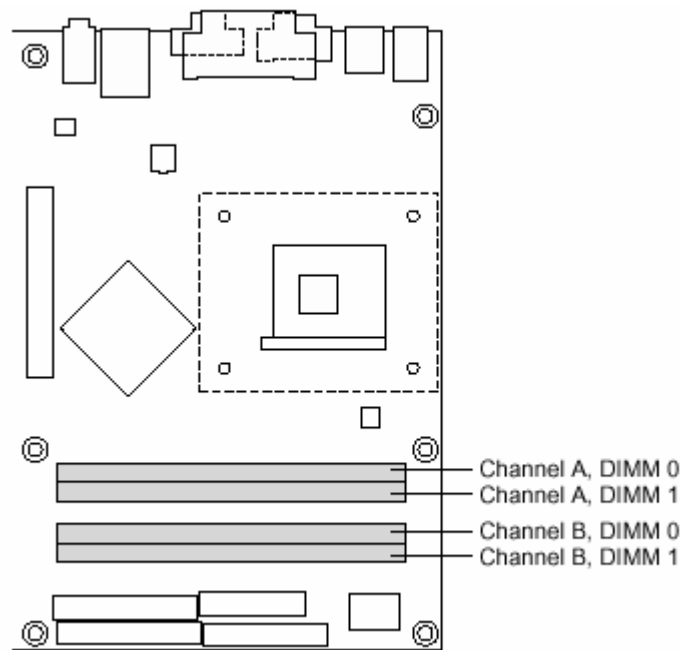


Figure 3. Memory Channel Configurations

Dual Channel Configurations with Dynamic Mode (All DIMMs matched)

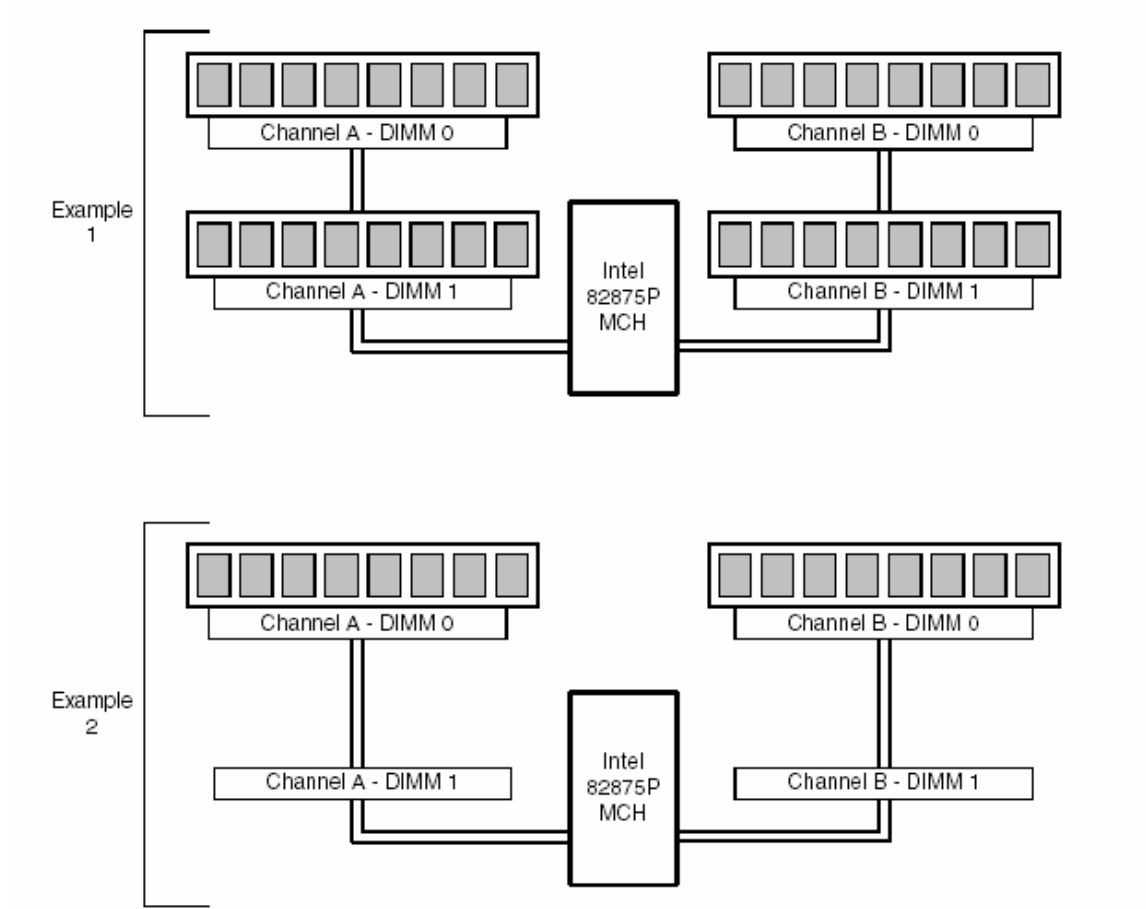


Figure 4. Examples of Dual Channel configurations with Dynamic Mode

Throughput Levels	Configurations	Characteristics
Highest ↑ Lowest	Dual Channel with Dynamic mode	All DIMMs matched (Example configurations are shown in Figure 4)
	Dual Channel without Dynamic mode	- DIMMs matched from Channel A to Channel B - DIMMs not matched within channels
	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched with a channel
	Single Channel without Dynamic Mode	DIMMs not matched

Dual Channel Configuration without Dynamic Mode

- DIMMs not matched within channel
- DIMMs match Channel A to Channel B

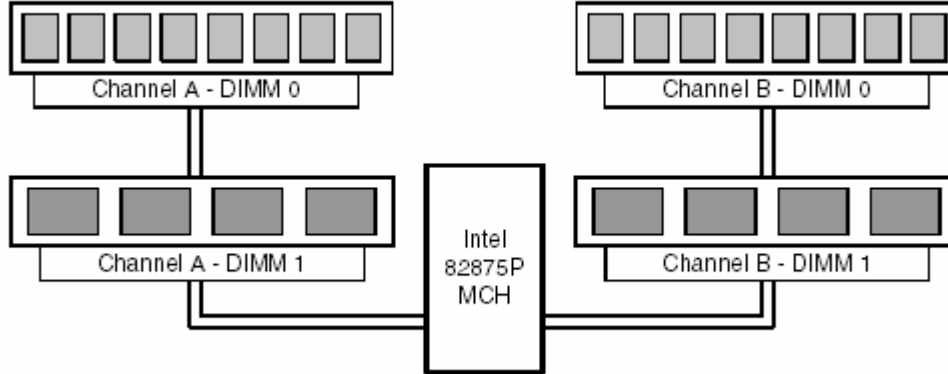


Figure 5. Examples of Dual Channel Configurations without Dynamic mode

Throughput Levels	Configurations	Characteristics
<p>Highest</p> <p>↑</p> <p>Lowest</p>	Dual Channel with Dynamic mode	All DIMMs matched
	Dual Channel without Dynamic mode	- DIMMs matched from Channel A to Channel B - DIMMs not matched within channels (Example configurations are shown in Figure 5)
	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched with a channel
	Single Channel without Dynamic Mode	DIMMs not matched

Single Channel Configuration with Dynamic Mode (Single DIMM or DIMMs matched within channel)

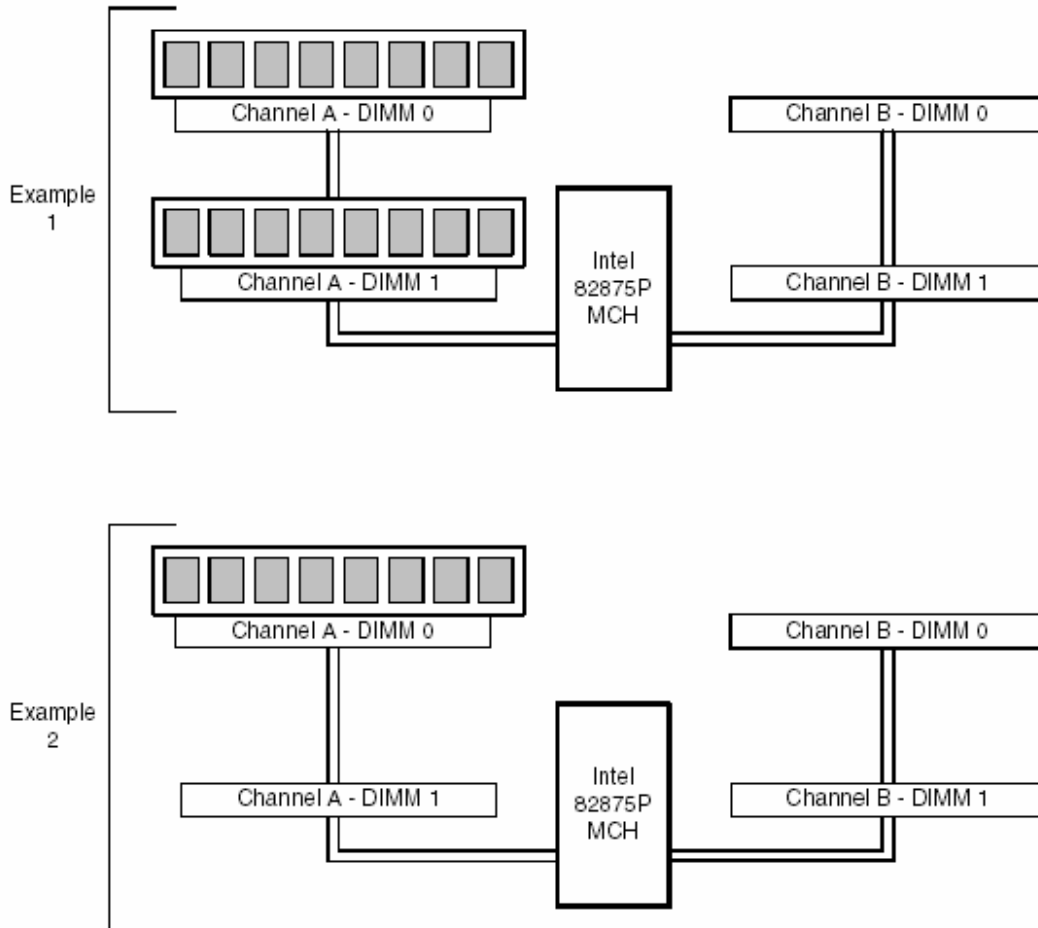


Figure 6. Examples of Single Channel Configurations with Dynamic mode

Throughput Levels	Configurations	Characteristics
<p>Highest</p> <p>↑</p> <p>Lowest</p>	Dual Channel with Dynamic mode	All DIMMs matched
	Dual Channel without Dynamic mode	- DIMMs matched from Channel A to Channel B - DIMMs not matched within channels
	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched with a channel (Example configurations are shown in Figure 6)
	Single Channel without Dynamic Mode	DIMMs not matched

Single Channel Configurations without Dynamic Mode (DIMMs not matched)

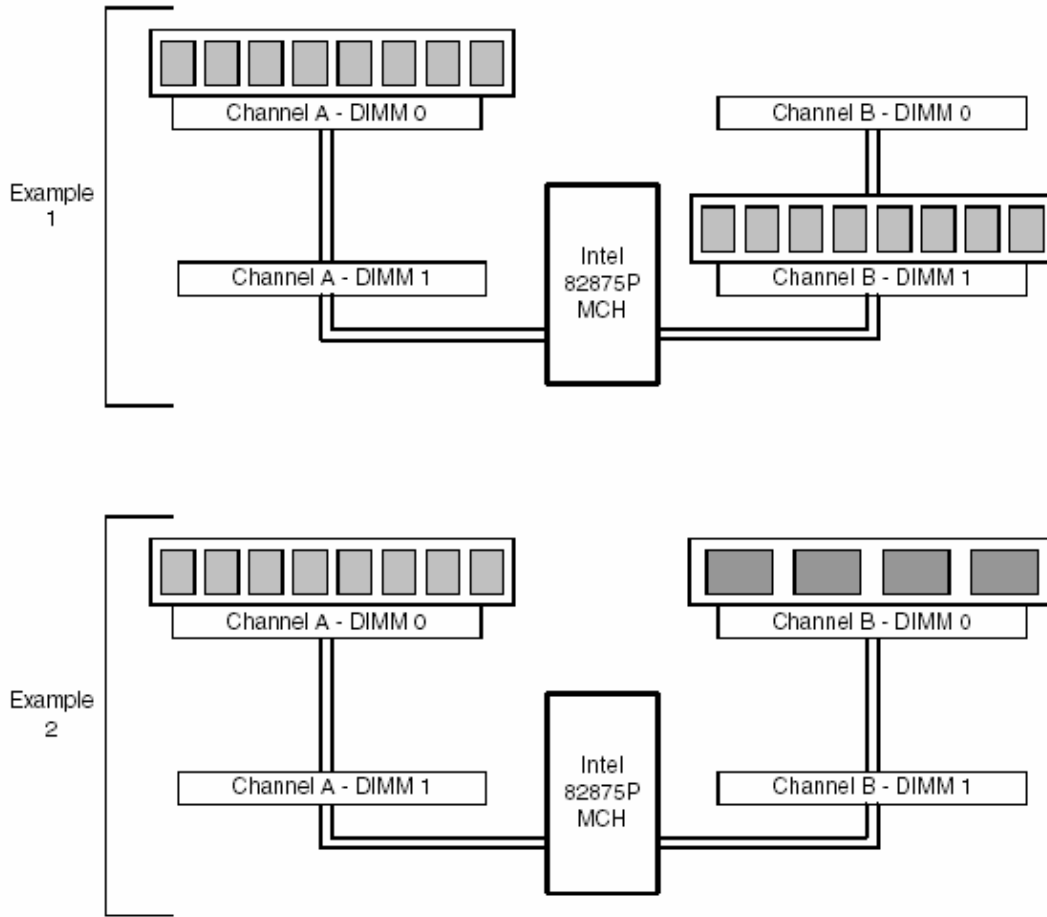


Figure 7. Examples of Single Channel Configurations without Dynamic mode

Throughput Levels	Configurations	Characteristics
<p>Highest</p> <p>↑</p> <p>Lowest</p>	Dual Channel with Dynamic mode	All DIMMs matched
	Dual Channel without Dynamic mode	- DIMMs matched from Channel A to Channel B - DIMMs not matched within channels
	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched with a channel
	Single Channel without Dynamic Mode	DIMMs not matched (Example configurations are shown in Figure 7)

Supported Memory Module DDR Configurations

- 2.5 V (only) 184-pin DDR SDRAM DIMMs with gold-plated contacts
- Unbuffered, single-sided or double-sided DIMMs with the following restriction: Double-sided DIMMs with x16 organization are not supported.
- 4 GB maximum total system memory.
- ECC and non-ECC DIMMs supported
- Serial Presence Detect
- DDR400 and DDR333 SDRAM DIMMs

DIMM Capacity	Configuration	DDR SDRAM Density	DDR SDRAM Organization Front-side/Back-side	Number of DDR SDRAM Devices
64 MB	SS	64 Mbit	8 M x 8/empty	8
64 MB	SS	128 Mbit	8 M x 16/empty	4
128 MB	DS	64 Mbit	8 M x 8/8 M x 8	16
128 MB	SS	128 Mbit	16 M x 8/empty	8
128 MB	SS	256 Mbit	16 M x 16/empty	4
256 MB	DS	128 Mbit	16 M x 8/16 M x 8	16
256 MB	SS	256 Mbit	32 M x 8/empty	8
256 MB	SS	512 Mbit	32 M x 16/empty	4
512 MB	DS	256 Mbit	32 M x 8/32 M x 8	16
512 MB	SS	512 Mbit	64 M x 8/empty	8
1024 MB	DS	512 Mbit	64 M x 8/64 M x 8	16

Note: In the second column, “DS” refers to double-sided memory modules (containing two rows of DDR SDRAM) and “SS”

refers to single-sided memory modules (containing one row of DDR SDRAM).

When ECC DIMMs are used, the Power-On Self Test (POST) will take longer to complete.

- **System Board Jumper Settings**

The Configuration Jumper (J7J2) allows the user to enter the configuration mode, and to recover from a corrupted BIOS update. The following figure shows the location of the header on the motherboard. The audio jumper block (J9A2) allows the implementation of front panel audio.

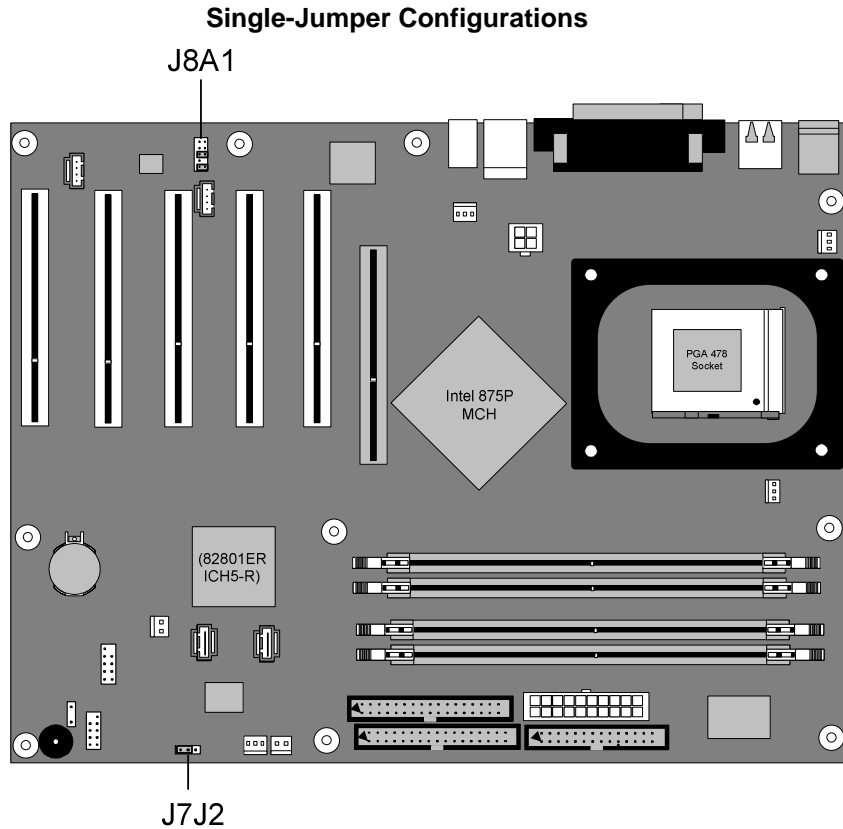


Table 11: Configuration Jumper Settings

Function	Jumper J7J2	Configuration
Normal	1-2	The BIOS uses current configuration information and passwords for booting.
Configure	2-3	After the POST runs, Setup runs automatically. The maintenance menu is displayed.
Recovery	None	The BIOS attempts to recover the BIOS configuration. A recovery diskette is required.

Table 12: Front Panel Audio Jumper Settings

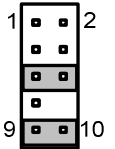
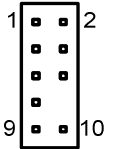
Function	Jumper J8A1	Configuration
Normal 	5 – 6 and 9- 10	The audio line signals are routed back to the line connector.
Front audio cable 	none	Audio line out and mic in signals are available for front panel audio connectors on this connector when no jumpers are installed.

Table 12a: Front panel Audio Connector

Pin	Signal name	Pin	Signal name
1	MIC_IN	2	Ground
3	MIC_BIAS	4	+5V
5	RIGHT_OUT	6	RIGHT_IN
7	Ground	8	Key
9	LEFT_OUT	10	LEFT_IN

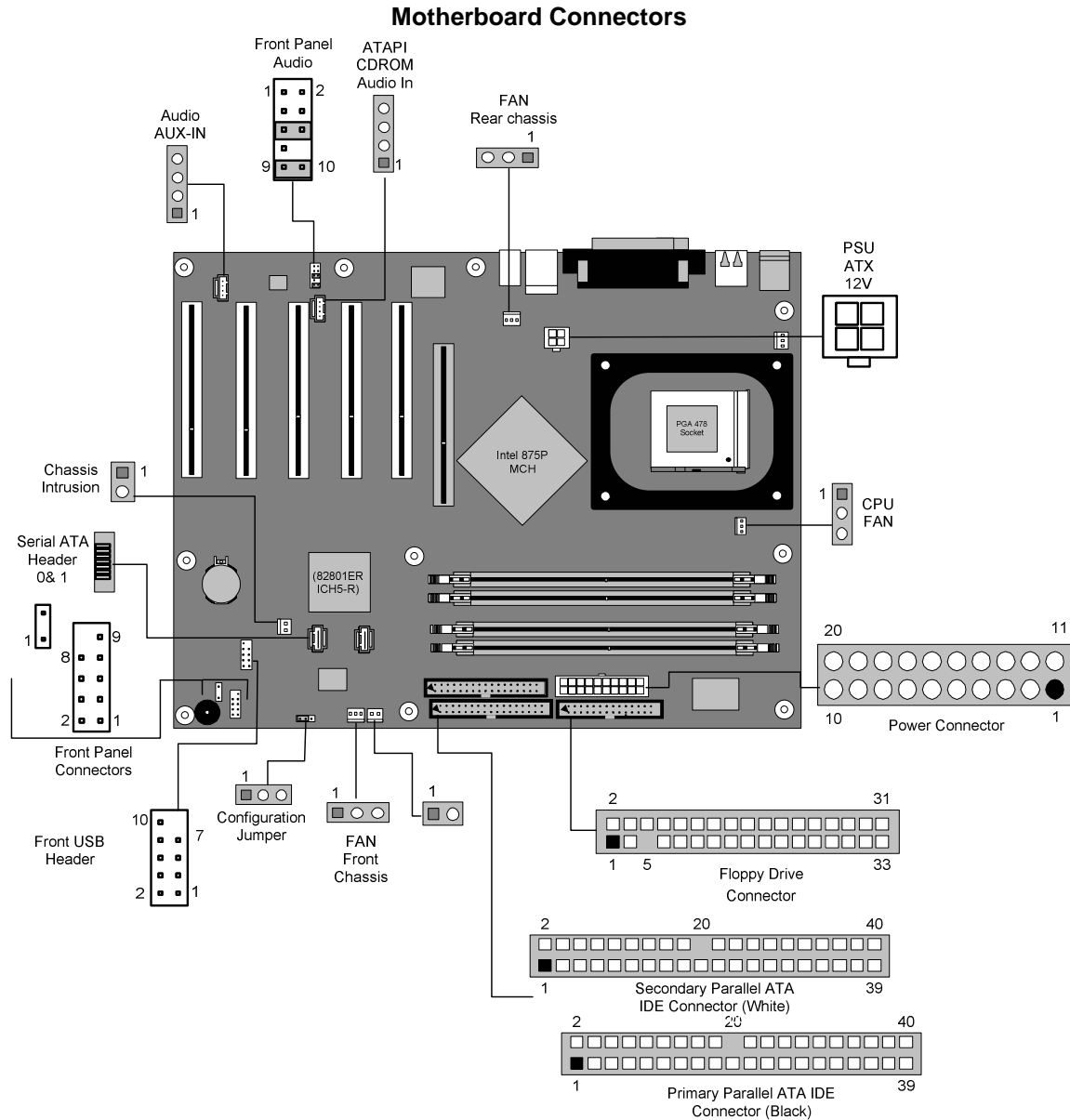
CAUTION!

Do not move the jumper with the power on. Always turn off the power and unplug the power cord from the computer before changing the jumper.

Note: *There is no jumper setting for configuring the processor speed or bus frequency. The feature for configuring the processor speed is in the Setup program using configure mode. See Manual BIOS Section for information about configure mode.*

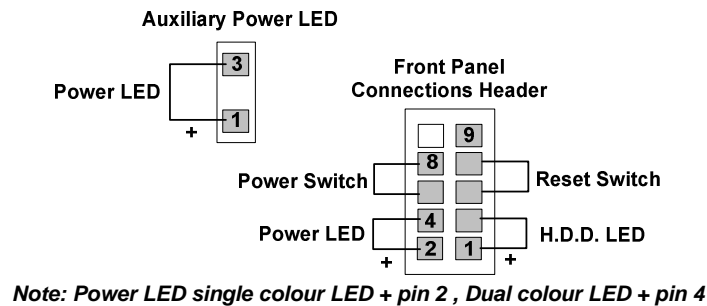
- **Motherboard Connectors**

There are connectors on the motherboard for FAN, IDE, Power supply, CD audio, Floppy, IDE, & Front Panel Connectors. The location and/or details of these connections are shown below.



- **Front Panel Connectors**

The following are all connectors situated along the front edge of the motherboard. They are often connected to buttons and LED's situated on the front panel.



Front panel connectors

A- Hard Disk L.E.D. Connector

This goes to the Hard Disk L.E.D. on the front panel, which lights up when the IDE Hard Disk is in use.

B - Reset switch connector

When these pins are shorted, it will cause the computer to perform a cold reboot.

C - Power L.E.D.

This attaches to the power L.E.D on the front panel, to display if the computer is active or not.

D- Power On/Off

When these pins are shorted it turns the computer on and off.

Upgrading the CPU

CAUTION!

Allow time for the processor and heatsink to cool before touching either of them.

The Pentium 4 processor together with Level 2 cache chips are housed in a protective package.

The design of the D875PBZ computer makes it a simple job to replace or upgrade the processor. To do so please refer to figure 15 and follow the instructions below:

1. Read the warnings at the start of this chapter and ensure a static free environment
2. Remove the lid from the computer by removing the four screws at the rear of the case
3. Locate the CPU module by referring to figure 1 if necessary
4. Locate the heat sink clips, and remove heat sink (and unplug FAN cable)
5. Lift arm on Socket to release the CPU
6. Lift the CPU Vertically upwards until it is clear of the socket

You can now fit the replacement CPU and heat sink into the socket.

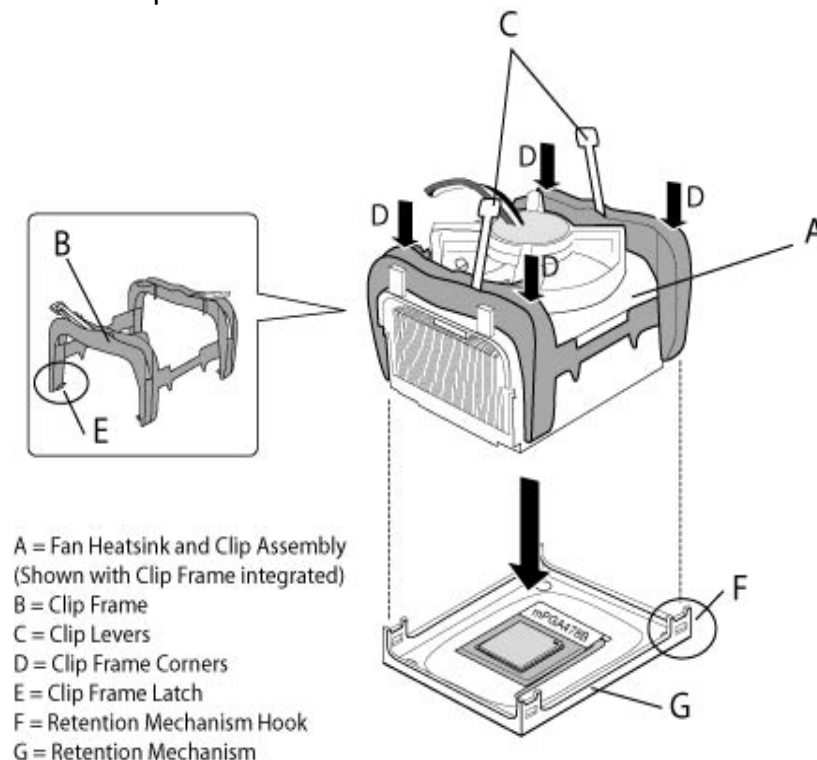


Figure 15. Installing the CPU heatsink (note heatsink type may vary from one shown above)

- BIOS Initial Release

BZ87510A.86A.0030.P06

- Driver Initial Release

Windows 98SE Drivers

INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003
Audio: ADI 1985	5.12.01.3581	19.6 MB	31 Mar 2003
Audio: QFE Update	QFE#269601	373 KB	23 Sept 2002
LAN: Intel LAN	8.0.62019	17.4 MB	21 Mar 2003
USB: USB 2.0	1.1.0.2	1.14 MB	3 Apr 2003
INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003

Windows ME Drivers

INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003
Audio: ADI 1985	5.12.01.3581	19.6 MB	31 Mar 2003
Audio: QFE Update	QFE#274370	161 KB	9 Sept 2002
LAN: Intel LAN	8.0.62019	17.4 MB	21 Mar 2003
USB: USB 2.0	1.1.0.2	1.14 MB	3 Apr 2003
INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003

Windows 2000 Drivers

INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003
Audio: ADI 1985	5.12.01.3581	19.6 MB	31 Mar 2003
LAN: Intel LAN	8.0.62019	34.3 MB	21 Mar 2003
USB: USB 2.0 †	5.0.2195.5652	284 KB	16 Apr 2003
SATA: QFE Update †	QFE#812415	270 KB	13 Mar 2003
INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003

Windows XP Drivers

INF: Intel 82801ER ICH5-R	5.00.1012	1.38 MB	12 Mar 2003
Integrated Audio: ADI 1985 (SoundMAX3 info)	5.12.1.3554	? MB	27/02/2003
LAN: Intel LAN	8.0.62019	34.3 MB	21 Mar 2003
SATA: QFE Update †	QFE#812415	384 KB	12 Feb 2003
SATA RAID: Intel Application Accelerator	3.0.0.2344	7.58 MB	31 Mar 2003

Note: - All the above drivers are PC99 certified.

† These drivers are available only on request due to licensing requirements; the appropriate drivers will be supplied with your system.