

Chapter 2 System Board

This chapter describes the system board and all its major components, including:

- Details about the system board layout
- Jumper and connector locations and functions
- Jumper settings

The AcerPower 6000 system board supports the Intel Pentium II processor with MMX (MultiMedia eXtensions) technology and the Celeron processor. The Pentium II comes in a card design with 512-KB second-level cache already integrated. The Celeron processor is Intel's Pentium II cost-down solution. It comes with 0- or 128-KB second-level cache. Both are capable of handling multimedia functions and enhancing the performance of 32-bit applications.

The system memory is upgradable to 256 MB via the two onboard 168-pin DIMM (Double In-line Memory Module) sockets. These sockets accommodate 8-, 16-, 32-, 64- and 128-MB DIMMs.

The board also incorporates a 3-D video controller with AGP (Accelerated Graphics Port), 2- or 4-MB SGRAM (Synchronous Graphics Random Access Memory), and a 3-D audio controller to fully support multimedia functions.

Onboard I/O (input/output) interfaces are comprised of a UART (Universal Asynchronous Receiver-Transmitter) 16C550 serial port, a parallel port with SPP (Standard Parallel Port)/ECP (Extended Capabilities Port)/EPP (Enhanced Parallel Port) support, and PS/2 keyboard and mouse ports. Two USB (Universal Serial Bus) ports, one VGA (Video Graphics Accelerator) port, one Feature connector, one mono Microphone-in port, one stereo Line-in port, one Line-out port, and one Game/MIDI (Musical Instrument Digital Interface) port are also added to the board design to enable the system to support additional peripherals.

For expansion, the board comes with two ISA (Industry Standard Architecture) slots and two PCI (Peripheral Component Interface) slots.

Special features such as PnP (Plug-and-Play) support, Power Management, Wireless Communication, Hardware Monitoring, Modem Ring-in, and Wake-on LAN (Local Area Network) functions are also supported. These functions are individually discussed in this chapter.

The system is fully compatible with MS-DOS V6.X, OS/2, SCO UNIX, Windows NT, and Windows 95/98 operating systems.

2.1 Major Components

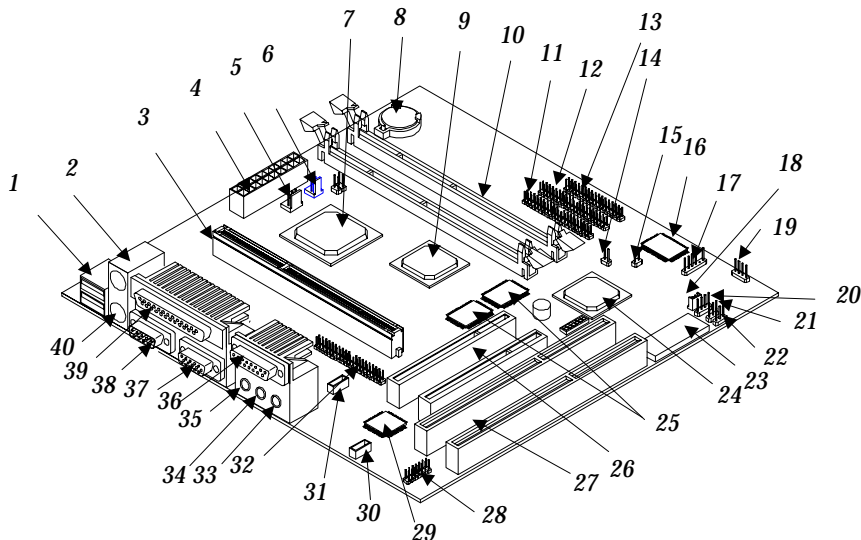
The system board has the following major components:

- A CPU (Central Processing Unit) connector that supports either of the following:
 - Pentium II processor running at 266, 300, or 333 MHz
 - Celeron processor running at 266, 300, 333, 366, or 400 MHz
- Supports 0-, 128-KB (Celeron processor), or 512-KB (Pentium II) SRAM (Synchronous Random Access Memory) second-level cache
- Two DIMM sockets that accept 8-, 16-, 32-, 64-, and 128-MB Standard DRAMs. These sockets allow memory upgrade of up to 256 MB
- PCI local bus IDE (Integrated Device Electronics) controller
- 3-D audio controller
- AGP-compliant 3-D video graphics accelerator with 2- or 4-MB SGRAM
- One Feature connector
- One Wake-on LAN connector
- One Modem ring-in connector
- One Modem connector

- One reserved IrDA (InfraRed Data Association) connector
- Two PCI enhanced IDE interfaces that support up to four IDE devices
- External ports
 - PS/2 keyboard and mouse ports
 - One buffered high-speed serial port
 - One SPP/ECP/EPP high-speed parallel port
 - Two USB ports
 - One standard VGA port
 - One mono Microphone-in port
 - One stereo Line-in port
 - One stereo Line-out port
 - One Game/MIDI port
- Two ISA and two PCI slots (one PCI-/ISA-shared)

2.2 Layout

Figure 2-1 shows the locations of the major components on the system board.



1	USB ports	16	Ultra I/O controller	27	ISA slots
2	PS/2 mouse port	17	IrDA connector	28	Audio feature connector
3	CPU card connector	18	Wake-on LAN connector	29	3-D audio controller
4	Power connector	19	HDD LED connector	30	CD line-in connector
5	3-pin fan connector	20	Modem ring-in connector	31	Fax/modem connector
6	2-pin fan connector	21	3-pin power LED connector	32	ATI multimedia feature connector
7	PCI, AGP, memory controller	22	Turbo LED connector	33	Microphone-in port
8	Battery	23	System BIOS chip	34	Line-in port
9	3-D AGP video controller	24	PCI-to-ISA bridge controller	35	Line-out port
10	DIMM sockets	25	Video memory	36	Game/MIDI port
11	IDE1 connector	26	PCI slots	37	VGA port
12	IDE2 connector			38	COM1 port
13	FDD connector			39	Parallel port
14	Power switch connector			40	PS/2 keyboard port
15	Reset connector				

Figure 2-1 System Board Layout

2.3 Jumpers and Connectors

2.3.1 Jumper and Connector Locations

Figure 2-2 shows the jumper and connector locations.

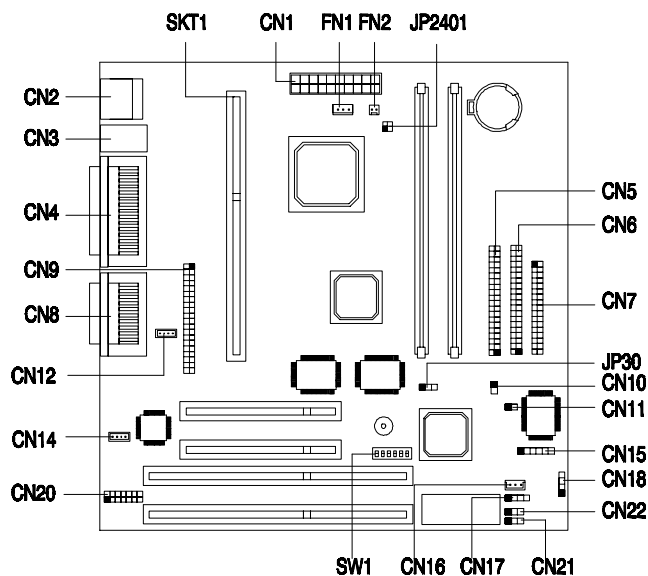


Figure 2-2 Jumper and Connector Locations



The shaded pin indicates pin 1.

2.3.2 Jumper Settings

To reconfigure the system, you need to set JP30 and SW1 switch jumpers. The following table lists the possible jumper settings:

Table 2-1 Jumper Settings

Jumper		Setting	Function	
JP30		1-2 * 2-3	VGA IRQ Assignment Disabled Enabled	
SW1 Settings				
Switch No.		Setting	Function	
1		On * Off	Password Bypass password Check password	
2			Reserved	
3	4	5	6	CPU Frequency (MHz)
On	Off	Off	On	233
Off	On	On	On	266
Off	On	Off	On	300
Off	Off	On	On	333
Off	Off	Off	On	366
On	On	On	Off	400

* Default setting

2.3.3 Onboard Connectors

Table 2-2 lists the onboard connectors.

Table 2-2 Onboard Connectors

Connector	Function
CN1	20-pin power connector
CN2	USB ports
CN3	Upper: PS/2 mouse port Lower: PS/2 keyboard port
CN4	Upper: Parallel port Lower: VGA port (left) COM1 port (right)
CN5	Primary IDE connector
CN6	Secondary IDE connector
CN7	Floppy disk drive connector
CN8	Upper: Game/MIDI port Lower: (L-to-R) Stereo line-out port Stereo line-in port Mono microphone-in port
CN9	ATI feature connector
CN10	Power switch connector
CN11	Reset connector
CN12	Fax/modem connector
CN14	CD line-in connector
CN15	IrDA connector (reserved)

Table 2-2 Onboard Connectors (continued)

Connector	Function
CN16	Wake-on LAN connector
CN17	Modem ring-in connector
CN18	HDD LED connector
CN20	Audio connector
CN21	Turbo LED connector
CN22	3-pin power LED connector
FN1	3-pin fan connector
FN2	2-pin fan connector
JP2401	Thermal sensor connector 1-2: SYS TMP 3-4: CPU TMP

2.4 IDE Hard Disk Support

The board comes with an enhanced PCI IDE controller that supports PIO mode 4 and Ultra DMA (Direct Memory Access) mode data transfers. In addition, two PCI IDE interfaces are mounted on the riser card to enable the system to support a maximum of four IDE hard disks, or any other IDE devices. See Figure 2-2 for the location of the IDE interfaces.

Connect the cables according to the IDE hard disk configuration in Table 2-3.

Table 2-3 IDE Hard Disk Configuration

IDE Connector	Master	Slave
IDE1 (CN5)	Hard disk 0	Hard disk 1
IDE2 (CN6)	Hard disk 2/ IDE CD-ROM drive	Hard disk 3

2.5 Video Function

The onboard video controller is capable not only of enhancing video display, but supporting 3-D video applications as well. The video controller features the Accelerated Graphics Port (AGP) design - the latest bus architecture that is considered to be the best solution for 3-D applications. AGP offers greater bandwidth; thus, it is capable of speeding up the VGA bus in order to meet the requirement of 3-D applications.

The board may come with 2-MB or 4-MB video memory. Larger video memory allows you to display higher resolutions and more colors.

The following table lists the video resolutions supported by the onboard VGA:

Table 2-4 Supported Video Resolutions

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
640 x 480	8/16/24/32	60	31.5
640 x 480	8/16/24/32	72	37.4
640 x 480	8/16/24/32	75	37.5
640 x 480	8/16/24/32	85	43.3
640 x 480	8/16/24/32	90	48.0
640 x 480	8/16/24/32	100	52.9
640 x 480	8/16/24/32	120	63.7
640 x 480	8/16/24/32	160	84.1
640 x 480	8/16/24/32	200	100.2
800 x 600	8/16/24/32	48	33.8
800 x 600	8/16/24/32	56	35.2
800 x 600	8/16/24/32	60	37.8
800 x 600	8/16/24/32	70	44.5
800 x 600	8/16/24/32	72	48.0
800 x 600	8/16/24/32	75	46.9
800 x 600	8/16/24/32	85	53.7

Table 2-4 Supported Video Resolutions (continued)

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
800 x 600	8/16/24/32	100	62.5
800 x 600	8/16/24/32	120	76.0
800 x 600	8/16/24	160	99.6
800 x 600	8/16	200	125.9
1024 x 768	8/16/24/32	43	35.5
1024 x 768	8/16/24/32	60	48.4
1024 x 768	8/16/24/32	70	56.5
1024 x 768	8/16/24/32	72	58.2
1024 x 768	8/16/24/32	75	60.0
1024 x 768	8/16/24/32	85	68.7
1024 x 768	8/16/24/32	90	76.2
1024 x 768	8/16/24/32	100	79.0
1024 x 768	8/16/24	120	96.7
1024 x 768	8/16	140	113.3
1024 x 768	8	150	120.6
1152 x 864	8/16/24/32	43	45.9
1152 x 864	8/16/24/32	47	44.9
1152 x 864	8/16/24/32	60	54.9
1152 x 864	8/16/24/32	70	66.1
1152 x 864	8/16/24/32	75	75.1
1152 x 864	8/16/24/32	80	76.4
1152 x 864	8/16/24	85	77.1
1152 x 864	8/16	100	90.2
1152 x 864	8/16	120	108.6
1280 x 1024	8/16/24	43	50.0
1280 x 1024	8/16/24	47	50.0
1280 x 1024	8/16/24	60	64.0
1280 x 1024	8/16/24	70	74.6
1280 x 1024	8/16/24	74	77.9

Table 2-4 Supported Video Resolutions (continued)

Resolution	bpp	Vertical Freq. (Hz)	Horizontal Freq. (KHz)
1280 x 1024	8/16/24	75	80.0
1280 x 1024	8/16	85	91.2
1280 x 1024	8/16	90	96.2
1280 x 1024	8/16	100	106.7
1600 x 1200	8/16	52	68.0
1600 x 1200	8/16	58	75.0
1600 x 1200	8/16	60	76.2
1600 x 1200	8/16	66	82.7
1600 x 1200	8/16	72	89.7
1600 x 1200	8/16	75	93.8



You may disable the onboard video function in the BIOS Utility. For more details on BIOS, see Chapter 3.

2.6 Audio Function

The board provides a complete 3-D audio solution via the onboard 3-D audio controller and the following audio connectors:

- Mono microphone port
- Stereo line-in port
- Stereo line-out port
- Game/MIDI port
- CD-in connector
- Modem connector

These connectors enable the system to accommodate external audio devices. For instructions on how to connect the external audio devices, refer to section 1.3.6. Connecting Multimedia Components.

2.7 USB

USB (Universal Serial Bus) is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12 Mbps) such as a keyboard, mouse, joystick, scanner, printer and modem/ISDN. With USB, complex cable connections at the back panel of your PC can be eliminated.

The board comes with two USB ports (CN2). See Figure 2-1 or Figure 2-2 for the location of the ports.

2.8 Hardware Monitoring Function

The Hardware Monitoring function allows you to check the system resources, either locally or in a computer network, by using software such as Intel LDCM (LAN Desk Client Manager). Intel LDCM is a desktop management program that offers the SMART (System Monitoring Analysis and Reporting Technology) monitor function for checking local or network connected systems. In addition, it also enables the PC products and applications to be OS (operating system) independent.

To enable the Hardware Monitoring function, you need to install Intel LDCM. Contact your dealer for information on the availability of the software. Refer to the software documentation for more details on the Hardware Monitoring function.

2.9 Modem Ring-in Function

The Modem Ring-in function enables the system to resume from suspend mode by monitoring the fax/modem (or any device of similar type) activities. Any

signal or activity detected from the Modem ring-in connector automatically returns the system to normal operation. Refer to Figure 2-2 for the location of the Modem ring-in connector (CN17) on the system board.

2.10 Wake-on LAN Function

The system supports the Wake-on LAN feature via the onboard Wake-on LAN connector (CN16). This special feature allows the system to be activated via a network. Common network functions, such as remote access, file sharing, etc. are also supported.