Gateway™

AMD Athlon (Oxnard) Motherboard

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Hardware Details

Part number 2508785

Main View
- A - Back Panel Connectors
- B - Processor and ZIF Socket
- C - North Bridge Controller
- D - APM Fan Connector
- E - ATX Power Connector
- F - DIMM Slots
- G - Floppy Disk Drive Interface
- H/I - Primary/Secondary IDE Connector
- J - BIOS Battery
- K - Auxiliary Fan Connector
- L - NVRAM and Password Jumper
- M - Front Panel USB Connector
- N - Front Panel Connector
- O - BIOS
- P - South Bridge Controller
- Q - Speaker
- R - PCI Slots
- S - AGP Slot
- T - Processor Fan Power Connector
- T - Processor Fan Power Connector

Bottom View
- Mounting Pegs

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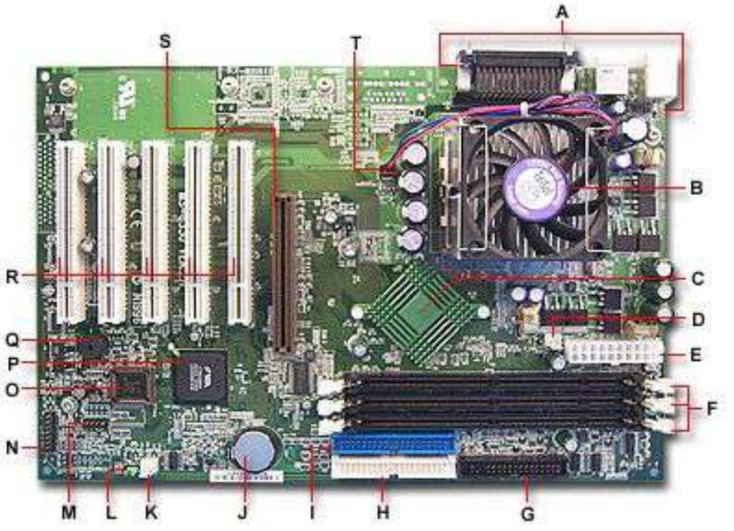
Main View

Part number 2508785

Note: Before adding, removing, or reseating any hardware, verify that the computer is unplugged. Then, either wait 30 seconds or press the power button to discharge the motherboard. The motherboard maintains power even after the computer is turned off.



This is the top view of the motherboard. On the graphic, click the links for more information.

Note: If Quick Boot is enabled in the BIOS Setup utility, the monitor cannot warm up soon enough to see the power-on self test (POST) screen. You must press the F1 key immediately upon starting the computer to enter the BIOS Setup utility.

Motherboard features

- VIA KT133 chipset
- UATA 33/66 support
- Three memory slots supporting a combined maximum of 1.5 gigabytes (GB) of synchronous dynamic RAM (SDRAM)
- Five PCI slots supporting 3.3-volt (V) to 5-V PCI version 2.2 bus interface
- 200-megahertz (MHz) front bus speed (speed of motherboard)
- 133-MHz host bus speed (speed at which the I/O controller communicates with the processor)
- Advanced Configuration and Power Interface (ACPI) support (Power Management support)
- Accelerated Graphics Port (AGP) 1X, 2X, or 4X support
- PCI version 2.2

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A - Back Panel Connectors

This is a closer view of the I/O ports on the motherboard. The I/O panel features:

A - Mouse PS/2 port
B - Keyboard PS/2 port
C - USB connectors
D - Serial port
E - Parallel port

PS/2 Port Information

The keyboard and mouse ports are not interchangeable except for troubleshooting purposes. After turning the computer off, you may swap the keyboard and mouse to test if the port or the device is defective, but return them to their correct ports after you have determined the issue.

The +5-volt (V) lines incorporate a PolySwitch circuit, which acts like a self-healing fuse, re-establishing the connection after an over-current condition is removed. The computer should be turned off before installing or removing the keyboard or mouse.

USB Information

One USB peripheral device may be connected to either USB port. An external hub may be connected to either port to provide additional USB connections. Some USB devices may even have a throughput on the plug. The motherboard fully supports the Open Host Controller Interface (OHCI) and uses OHCI-compatible software drivers. USB features include:

- Self-identifying, hot pluggable peripheral devices.
    - Drivers do not have to be loaded, and the computer does not have to be reconfigured or restarted.
    - After plugging the USB peripheral device into the USB port, the peripheral device automatically becomes fully functional.
- Automatic mapping of function to driver and configuration.
- Support of isochronous and asynchronous transfer types.
- Support for 127 physical devices, as long as the cumulative bandwidth demands do not exceed 12-megabytes per second (MBps).

  Note: This is roughly 100 times the limit of current serial busses and is wide enough to daisy chain a printer, scanner, still camera, and removable hard disk from one port.

- Guaranteed bandwidth and low latencies appropriate for telephony, audio, and other programs.
- Error handling and fault recovery mechanisms built into protocol.
- USB keyboards and mouse devices are supported as legacy devices during startup and under operating systems without USB support.

Note: Computers that have an unshielded cable attached to a USB port may not meet FCC Class B requirements, even if no device or a low-speed USB device is attached to the cable. Use a shielded cable that meets the requirements for full-speed devices.

Parallel Port Information

The 25-pin, D-sub header is a multi-mode, bi-directional port. The parallel port operates in normal or standard mode, enhanced parallel port (EPP), and a high-speed extended capabilities port (ECP) mode. The parallel port can be configured in the BIOS Setup utility. Using a device connected to the parallel port when configured as EPP normally requires a driver for the device being installed.

Serial Port Information

The 16450 and 16550A compatible Universal Asynchronous Receiver/Transmitters (UART) support data transfers at speeds up to 115.2-kilobits per second (Kbps) in extended UART mode. This 9-pin serial port can be configured in several different combinations in the BIOS Setup utility.

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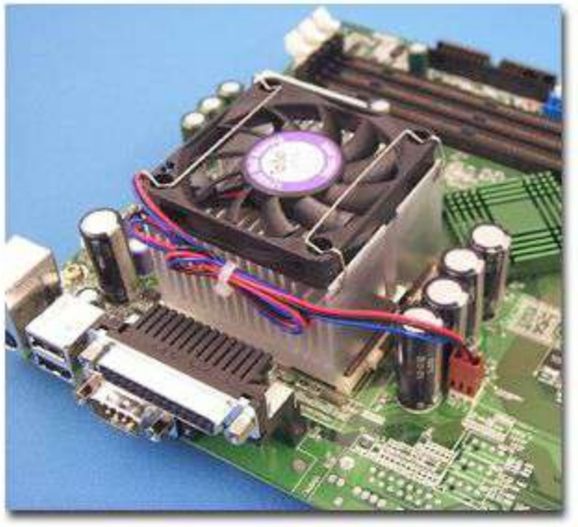
B - Processor and ZIF Socket



The motherboard is built with a Socket A ZIF processor slot that supports a single AMD Athlon 462-pin processor. The speed at which the motherboard communicates with the processor, or the host bus speed, is 133 megahertz (MHz).

The processor's voltage identification (VID) pins automatically program the motherboard's voltage regulator to the required processor voltage.

If the processor requires reseating:

1. Turn off the computer and lay it on its side for easier access.
2. Disconnect the active heatsink power connector.
3. Use a flat head screwdriver to carefully push down on the heatsink retention clip to free it from the ZIF socket.
4. Lift up the dark tan ZIF socket lock arm.
5. Lift the heatsink and processor from the ZIF socket and check for any bent or broken pins.
6. Lower and raise the dark tan ZIF socket lock arm a few times to verify that it moves with ease.
7. Return the processor and heatsink to the ZIF socket and lower the dark tan ZIF socket lock arm to secure the processor.
8. Reconnect the active heatsink power connector.

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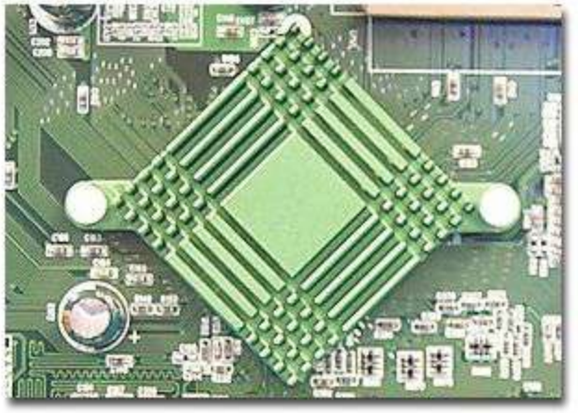
C - North Bridge Controller

The North Bridge provides a 200-megahertz (MHz) interconnection between the system bus, hub interface, and synchronous dynamic RAM (SDRAM). The North Bridge is directly responsible for the following.



- AMD processor interface
  - Layout optimized for Socket A
  - 200-MHz front side bus (FSB)
  - Automatic processor speed control
    - 500-MHz to 1.25-gigahertz (GHz) processor speeds supported in 50-MHz increments
- Memory interface
  - PC133, three DIMMs or six banks
  - Memory clock synchronous or pseudo-synchronous to FSB
    - 66/200-MHz and 100/200-MHz synchronous
    - 133/200-MHz pseudo-synchronous
  - Concurrent CPU, AGP, and PCI access
  - Supports 64-megabit (Mb), 128-Mb, and 256-Mb technology
- AGP bus interface
  - AGP 2.0-compliant
  - Supports 1X, 2X, and 4X modes
- Power management functions
  - Support for suspend/resume
  - Compliant with ACPI power management
- PCI bus Interface
  - PCI 2.1-compliant
  - Supports four PCI bus masters in addition to the core logic

D - APM Fan Connector

A keyed, 3-pin connector from the power supply connects here and allows the computer software to control the power supply fan, turning it on or off. If Fan Always On is selected in the BIOS Setup utility, it overrides the Advanced Power Management (APM) software fan control. If SCSI devices are detected in the computer, the fan remains on.

Fan Connector

Part number 6500124,6500165,6500453,6500454,6500470,6500525

This keyed 3-pin connector plugs into the motherboard and allows the computer software to control the fan, turning it on or off-overriding the power connector.

The **Fan Always On** field overrides Advanced Power Management (APM) fan control. The APM fan control turns the fan off any time the computer enters a power-managed state. Set to the **Yes** option, the fan remains on any time the computer is powered on or in an APM state. If SCSI devices are detected in the computer, the fan remains on.

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E - ATX Power Connector

This is a closer view of the ATX form-factor power supply connection on the motherboard. The holes on the power connector are keyed to ensure proper orientation when plugging in the ATX power connector. The clip on the ATX power connector faces toward the DIMM slots.

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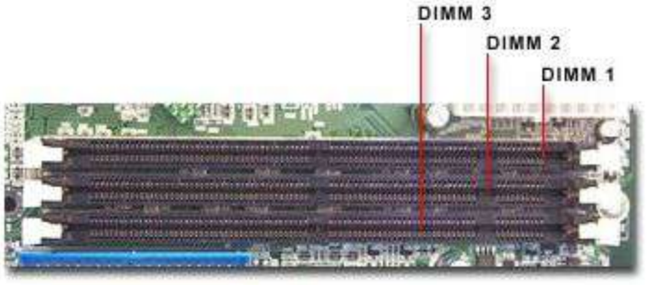
F - DIMM Slots



The three DIMM slots are keyed to ensure proper insertion. The memory bus supports PC66 to PC133 memory. The BIOS Setup utility automatically detects memory type, size, and speed using Serial Presence Detect (SPD) technology. The memory type, size, and speed can vary between the sockets. The memory modules do not have to be installed in a specific order or socket. Bank 0 or the DIMM 1 slot is located toward the rear of the motherboard. The motherboard supports a minimum memory size of 32 megabytes (MB) and a maximum memory size up to 1.5 gigabytes (GB) of memory with 256-megabit technology.

Memory Features

- SPD allows auto-configuration and detection of the size and speed of memory
- 3.3-volt (V) memory only
- Error correction code (ECC) and non-ECC support
- 4-clock, 133-megahertz (MHz) unbuffered synchronous dynamic RAM (SDRAM)
- Single- or double-sided DIMM configurations
- Mixed speed DIMM configuration defaults to the slowest speed DIMM installed
- Non-SPD support
- Gold contacts on DIMMs
- 1.5 GB maximum memory

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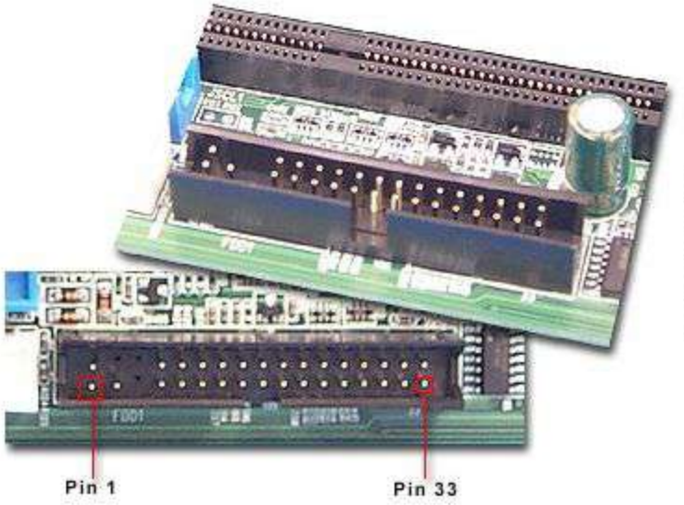
G - Floppy Disk Drive Interface



This is where the floppy disk drive interface cable connects to the motherboard. In the graphic, pin 1 orientation is to the left and toward the bottom of the case when mounted in a tower case. The slot is keyed in case you use a keyed cable.

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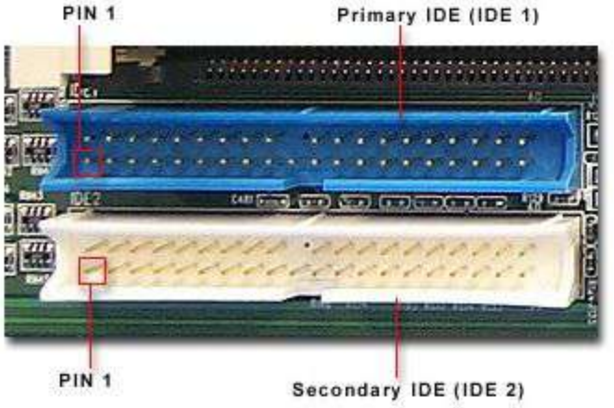
H/I - Primary/Secondary IDE Connector



The connectors are used for all IDE devices, most commonly ATA or UATA66 hard disks.

When connecting the IDE disk drive cables to the IDE disk drive connectors, maintain pin 1 orientation. In this graphic, pin 1 is on the left side. The connectors are also keyed in case you are using a keyed cable. The primary and secondary IDE controllers are indicated in the graphic.

Supported hard disk features

- The motherboard provides two independent synchronous DMA bus-mastering PCI IDE interfaces that support fast IDE PIO Mode 3, Mode 4, Advanced Technology Attachment Packet Interface (ATAPI), and Ultra Advanced Technology Attachment (UATA) interface devices at speeds of 33/66.
- The motherboard BIOS supports Logical Block Addressing (LBA) and Extended Cylinder Head Sector (ECHS) translation modes.
- The BIOS Setup utility automatically detects the IDE device transfer rate and translation mode. This motherboard includes LS-120 support.

Normally, programmed I/O operations require a substantial amount of CPU bandwidth. In true multi-tasking operating systems, the CPU bandwidth, which is freed up by using bus mastering IDE, can be used to complete other tasks while disk transfers occur. When used in conjunction with the appropriate driver, the IDE interface can operate as a PCI master capable of supporting Ultra ATA devices with transfer rates of up to 100-megabytes per second (MBps).

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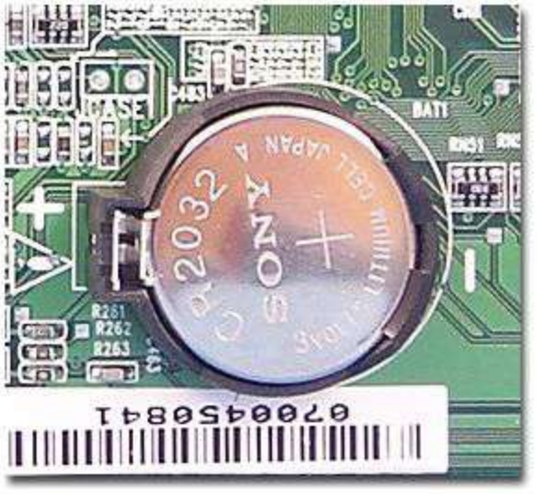
J - BIOS Battery



A CR 2032 battery provides power to the real-time clock (RTC) and BIOS memory. The battery is socketed for replacement.

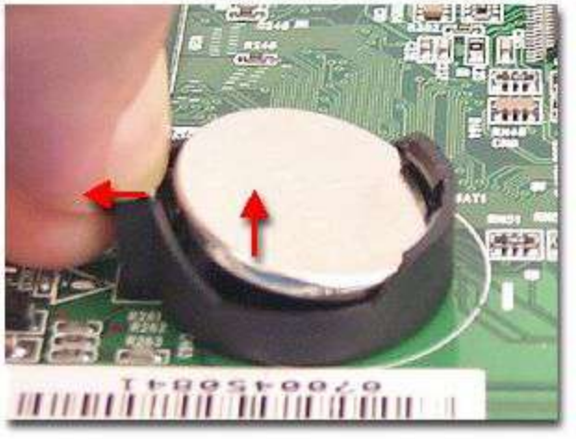
This is a 3-volt, lithium, coin-cell battery with a rating of 220 milliampere-hour (mAh).

On a motherboard, when the computer is plugged in, the standby current from the power supply extends its life. Its estimated lifetime is seven years when the computer is plugged in to a power outlet and three years when the computer is not.

It provides power to the BIOS memory and to the real-time clock so that these settings do not have to be set each time the computer starts.

Note: The Gateway part numbers are subject to change.

3-V RTC and CMOS RAM Battery



To remove the battery, push the battery clip away from the battery. Lift or push the battery out of the clip. The positive (+) side of the battery is placed face up, and the negative (-) side of the battery is placed face down.

The clock provides a time-of-day clock and a multicentury calendar with alarm features. The RTC supports 256 bytes of battery-backed CMOS RAM in two banks reserved for BIOS use. The RTC is accurate to ±13 minutes per year at 78°F (25°C) with 3 volts applied.

Note: The battery is available at most local stores as battery type CR2032.

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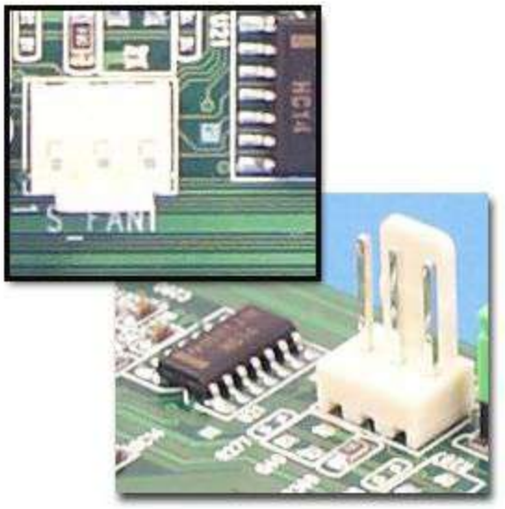
K - Auxiliary Fan Connector



This connection is used to power an auxiliary cooling fan—if equipped—mounted on the interior of the side panel or an active heatsink on some video cards.

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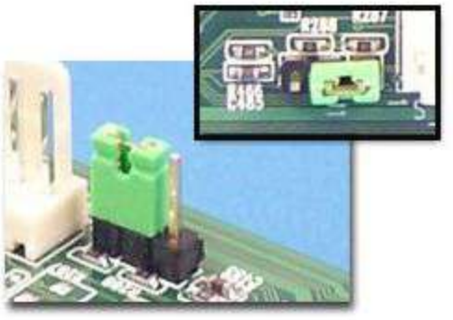
L - NVRAM and Password Jumper



The 3-pin, lime-green jumper block allows you to manually clear non-volatile RAM (NVRAM) or BIOS passwords. The jumper is depicted in the default position. There is no maintenance mode on this motherboard.

Setting	Position
Normal operation (default)	Pins 1 and 2
Clear BIOS Passwords	Pins 2 and 3
Flash recovery	Covering no pins

Note: Do not move any jumper with the power on. Always turn off the power before changing a jumper setting. Damage to the motherboard may occur if power is left on while moving the jumper.

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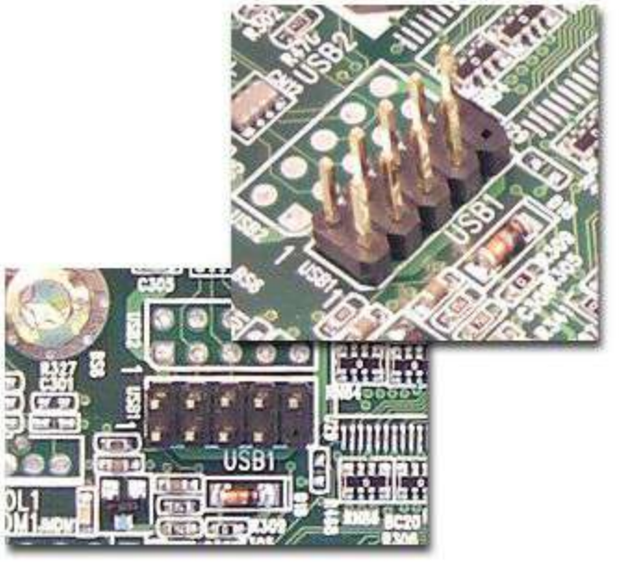
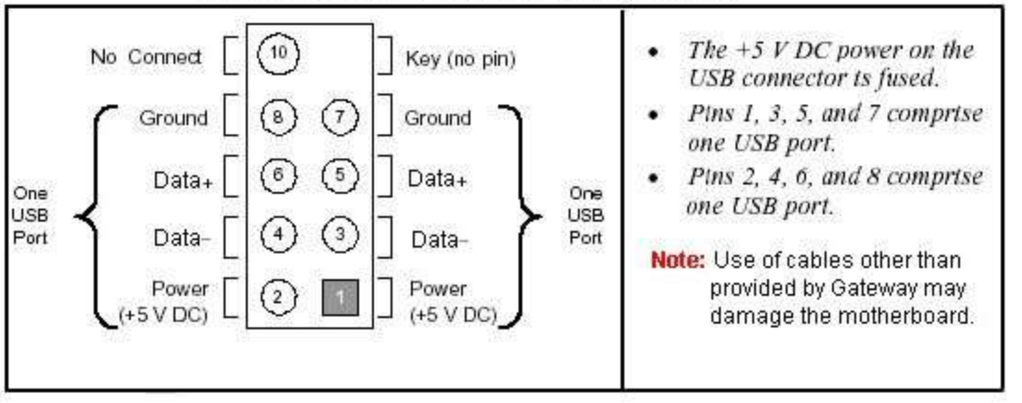
M - Front Panel USB Connector



A cable connecting the front USB plugs—if so equipped—is connected here.

Connection Diagram for Front Panel USB Connector



- *The +5 V DC power on the USB connector ts fused.*
- *Pins 1, 3, 5, and 7 comprtse one USB port.*
- *Pins 2, 4, 6, and 8 comprtse one USB port.*

Note: Use of cables other than provided by Gateway may damage the motherboard.

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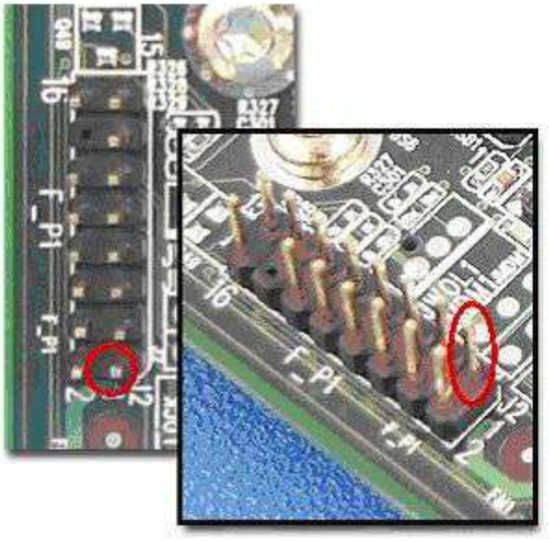
N - Front Panel Connector



The front panel connection consists of a 2 × 8 header. Pin 1 is indicated in the graphic.

The front panel connector controls the following:

- Power light-emitting diode (LED)
- On/Off switch
- Hard disk activity LED

Front Panel Connector							
Pin	**Signal**	**In/Out**	**Description**	**Pin**	**Signal**	**In/Out**	**Description**
1	HD_PWR	Out	Hard disk LED pull-up (330 Ω) to +5 V	2	HDR_BLNK_GRN	Out	Front panel green LED
3	HDA#	Out	Hard disk activity LED	4	HDR_BLNK_YEL	Out	Front panel yellow LED
5	GND		Ground	6	FPBUT_IN	In	Power switch
7	FP_RESET#	In	Reset switch	8	GND		Ground
9	+5 V	Out	Power	10	N/C		Not connected
11	N/C		Reserved	12	GND		Ground
13	GND		Ground	14	(pin removed)		Not connected
15	N/C		Reserved	16	+5 V	Out	Power

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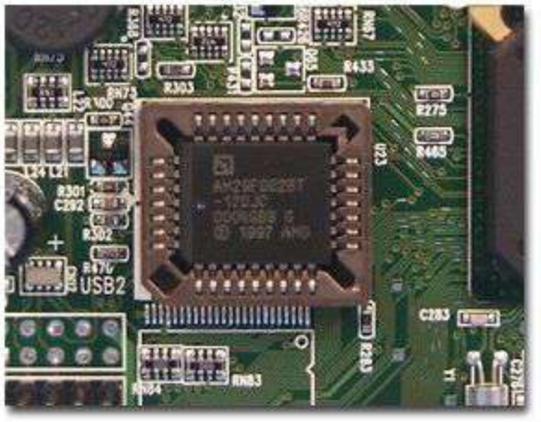
O - BIOS



The BIOS chip is comprised of an AMI core with a two-megabit (Mb) capacity. The BIOS is APCI 1.0b, PC99, and smBios 2.3 compliant. This BIOS supports Fast Boot mode which allows power-on to power-on self-test (POST) completion in less than 10 seconds. The BIOS chip is flashable for upgrades.

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P - South Bridge Controller

The VT82C686A South Bridge peripheral bus controller meets the following specifications:

- Chip set interface
  - 33-megahertz (MHz) PCI
- Storage interface
  - Bus mastering UATA-33/66
  - PIO Mode 4
  - Dual channel
- PCI to ISA bridge
  - PCI 2.2-compliant
  - Supports ISA Super I/O devices
  - Real-time clock
  - Flash EPROM interface up to 4 megabytes (MB)
  - Interrupt controller
- USB
  - 1.1- and UHCI 1.1-compliant
- Super I/0 devices
  - Two serial ports (one dedicated for modem)
  - One infrared port
  - One parallel port with extended capabilities port (ECP) and enhanced parallel port (EPP) support
  - Two floppy disk drive support
- AC 97 controller
- Voltage, temperature, and fan speed monitor and controller
- System management bus

The BIOS Setup utility provides configuration options for the functions of the VT82C686A South Bridge controller.

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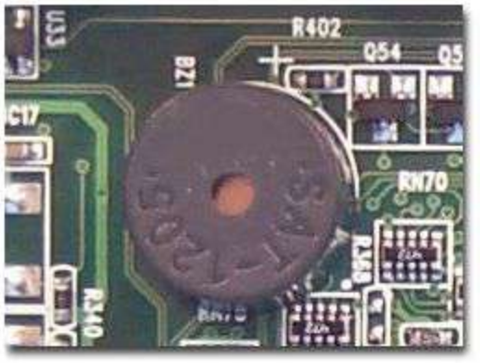
Q - Speaker



The speaker provides audible error code or beep code information during the power-on self-test (POST). The speaker is a 47-ohm inductive pezieo speaker and is mounted on the motherboard. There are no volume adjustments that can be made to this speaker.

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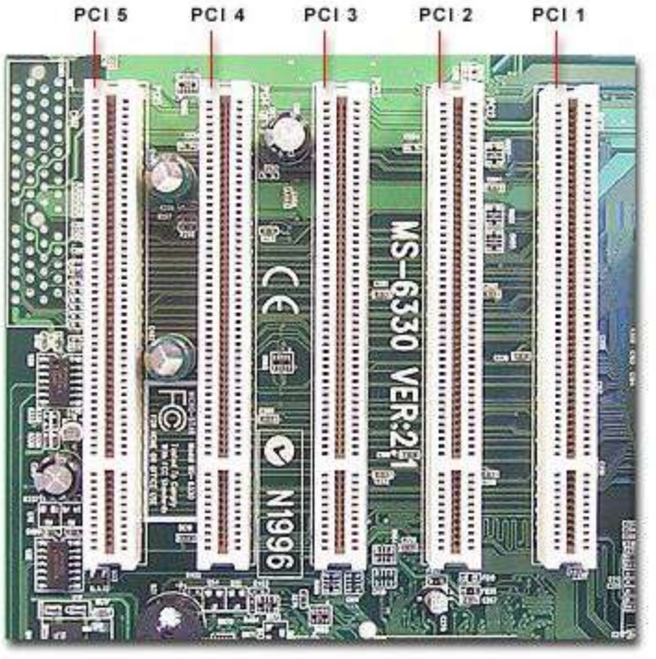
R - PCI Slots



The five slots on the left represent 32-bit PCI local bus slots. All PCI slots accept PCI bus mastering cards and fully support the PCI 2.2 specification and 5-volt (V) power requirements. The PCI bus speed is 33 megahertz (MHz).

Bus mastering

Devices using bus mastering can take control of the bus to which they are connected, mediating their own data transfers. This allows the computer processor to perform other tasks.

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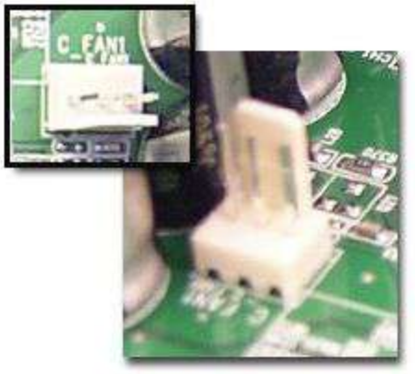
S - AGP Slot

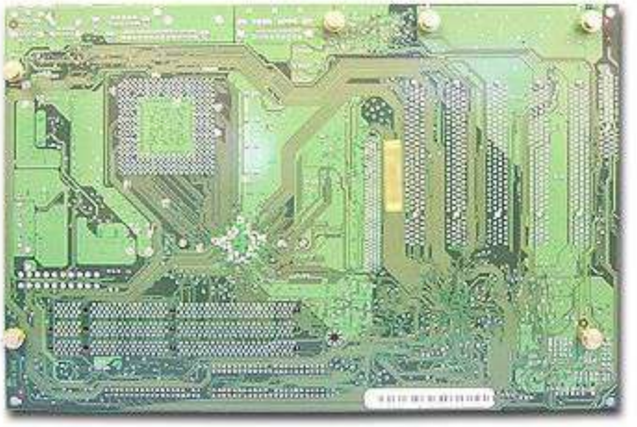
The accelerated graphics port (AGP) accepts video cards built on AGP architecture. The AGP port meets AGP 1X, 2X, or 4X specifications. All Athlon processors support the 3D Now! graphic instruction set.

T - Processor Fan Power Connector



The fan connector is used to power an active heatsink. The cable from the active heatsink connects to these three pins.

Bottom View



The Oxnard motherboard is fitted with six standoff feet. The feet fit into the triangular notches in the back wall of the case. The motherboard is then slid toward the rear of the case, and a thumb screw, just below or to the left of the DIMM slots, secures the motherboard.

This design allows for motherboards to easily be removed and replaced in a short period of time.

Mounting Pegs