Chapter 1

INTRODUCTION

The MS-6301 ATX CA8 mainboard is a high-performance computer mainboard based on Intel® 820 chipset. The MS-6301 is designed for the Intel® Pentium™ II/III processor for high-end business/personal desktop markets.

The Intel® 820 chipset is the first generation chipset for the Intel® Pentium® II/III processor. An integrated centralized memory arbiter allocates memory bandwidth to multiple system agents to optimize system memory utilization. A new chipset component interconnect, the hub interface, is designed into the Intel 820 chipset to provide an efficient communication channel between the memory controller hub and I/O controller hub.

The Intel 820 chipset contains four core components: the Memory Controller Hub (MCH), Memory Translator Hub (MTH), the I/O Controller Hub (ICH) and the Firmware Hub (FWH). The MCH integrates a 100MHz/133MHz CPU FSB, and a fix 100MHz SDRAM controller and high-speed hub interface for communication with the ICH. The ICH integrates an Ultra ATA/66(ICH) controller, USB host controller, LPC interface controller, FWH inteface conroller, PCI interface controller, AC'97 digital controller and a hub interface for communication with the MCH.

The Intel® 82802 Firmware Hub (FWH) component is part of the Intel® 820 chipset. The FWH is key to enabling future security and manageability infrastructure for the PC platform.

1.1 Mainboard Features

CPU

- Support Intel® Pentium® II/III & Coppermine 100/133MHz FSB processor.
- Support 350/400/450/500/533/600MHz or higher processor

Chipset

- Intel® 820 Camino chipset. (324 BGA)
  - Optimized for Pentium III processor
  - AGP 4x/2x universal slot
  - Support 100/133MHz FSB
- Intel® ICH chipset. (241 BGA)
  - AC'97 Controller Integrated
  - 2 full IDE channels, up to ATA66
  - Low pin count interface for SIO
- Intel® MTH chipset. (241 BGA)

Front Side Bus (FSB)

- 100/133MHz clocks are supported.

Main Memory

- Supports three 168-pin DIMM sockets.
- Supports a maximum SDRAM memory size of 512MB or 1GB (32Mx4) registered DIMM only.
- Support only SDRAM without ECC Function.

Slots

- One AMR (Audio Modem Riser)
- One AGP (Accelerated Graphics Port) slot.
  - AGP specification compliant
  - AGP 66/133/266MHz device support
- Five 32-bit Master PCI Bus slots and one 16-bit ISA slot(optional).
- Supports 3.3v/5v PCI bus Interface.

Note: If there's onboard Hardware Audio or LAN. The PCI slot 1 and PCI slot 5 will be shared.

On-Board IDE

- An IDE controller on the ICH chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA/66 operation modes.
- Can connect up to four IDE devices.

On-Board Peripherals

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 2 serial port (COMA + 1 COMB)
  - 1 parallel port supports SPP/EPP/ECP mode
  - 2 USB ports
  - 1 IrDA connector for SIR.
  - 1 LAN port

Audio

- ICH chip integrated
- Creative CT5880. (Optional)
  - 64 Voice WaveTable Synthesizer
  - Sound Library of over 4000 different sounds
  - Support SPDIF (AC3)
  - Support Microsoft Direct Sound, Direct Sound 3D, Direct Music, and A3DAPI.

Network (Reserved)

- Intel 82559 10/100M Ethernet (optional)
  - WFW baseline & NET PC specs compliant
  - Advanced Power Management (ACPI support)
  - ARP & Flexible frame filtering
  - Software drivers are backwards compatible
  - IP checksumming in hardware
  - Alert on LAN II(optional)

BIOS

- The mainboard BIOS provides “Plug & Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface(DMI) function which records your mainboard specifications.
- CPU Voltage setting through BIOS
- FWH Flash BIOS Protect

Dimension

- ATX Form Factor: 30.5cm x 21cm

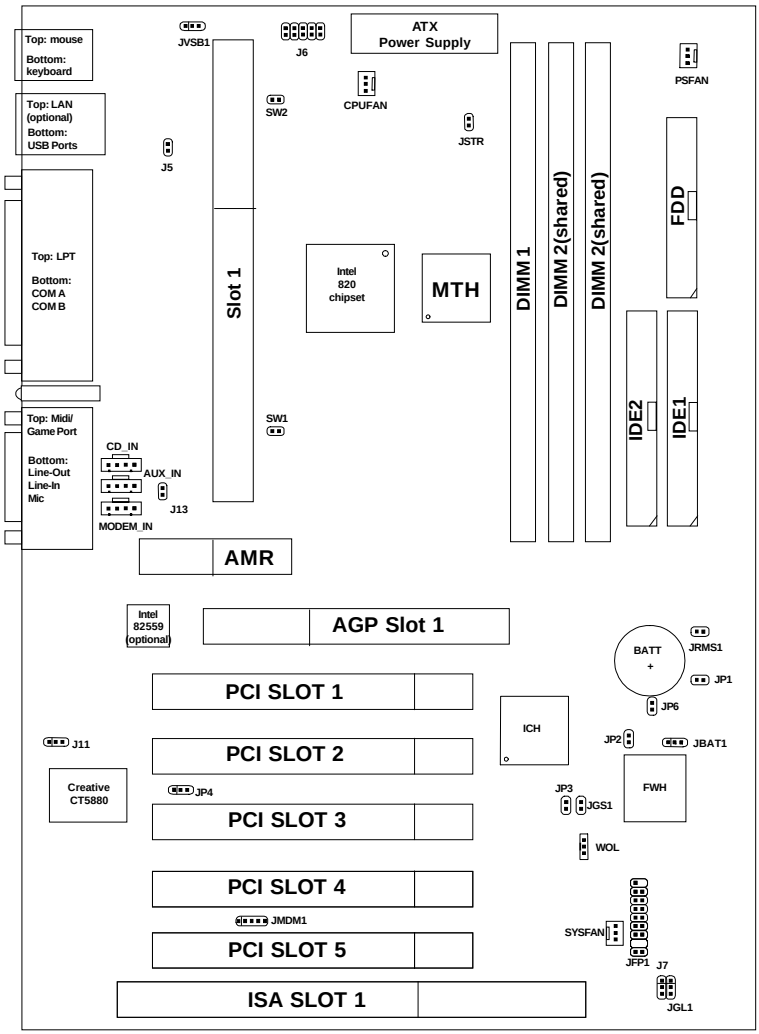
Mounting

- 6 mounting holes.

Other features

- CPU core/bus ratio & FSB frequencies setting through BIOS.
- Diagnostic LED system status display
- Reset button protect
- Keyboard/Mouse Power on function
- Support suspend to RAM (STR)

1.2 Mainboard Layout



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