Chapter 1

INTRODUCTION

The MS-6192 ATX CA7 mainboard is a high-performance computer mainboard based on Intel® 820 chipset. The MS-6192 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 three core components: the Memory Controller Hub (MCH), the I/O Controller Hub (ICH) and the Firmware Hub (FWH). The MCH integrates a 100MHz/133MHz CPU FSB, 266/300/356/400MHz RDRAM 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
    - Increased memory bandwidth (RDRAM)
    - 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)
    - 100MHz SDRAMs on SRIMMs and DIMMs
    - 64Mbit and 128Mbit SDRAM Technologies
    - 400MHz Direct Rambus Channel
    - Maximum of 4 SDRAM rows per MTH. All rows share the same
    SDRAM Data bus.
    - Supports Powerdown and Self Refresh Low Power States of SDRAMs

Front Side Bus (FSB)
- 100/133MHz clocks are supported.

Main Memory
- Support two 184-pin RIMM and two 168-pin DIMM sockets.
- Support a maximum RDRAM/SDRAM memory size of 24 device 768MB.

Slots
- One AMR (Audio Modem Riser) slot.
- One AGP (Accelerated Graphics Port) slot.
  - AGP specification compliant
  - AGP 66/133MHz 3.3/1.5v device support
- Five 32-bit Master PCI Bus slots and one 16-bit ISA slot
  - 1 PCI slot is shared with onboard Audio
- Supports 3.3v/5v PCI bus Interface.

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 + COMB)
  - 1 parallel port supports SPP/EPP/ECP mode
  - 2 USB ports
  - 1 IrDA connector for SIR.
  - 1 Diagnostic LED
  - 1 Game Port
  - 1 Audio Port (Line-In, Line-Out, Mic-In)

Audio
- ICH chip integrated
- Creative® CT5880 (optional)
  - PCI 2.2 compliant
  - PC97/ PC98 specification compliant
  - 3D audio effects.
  - 32-voice XG wavetable synthesizer
  - Direct Sound Hardware Accelerator
  - Direct Music Hardware Accelerator
  - Full-Duplex stereo
  - Support SPDIF connector

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.
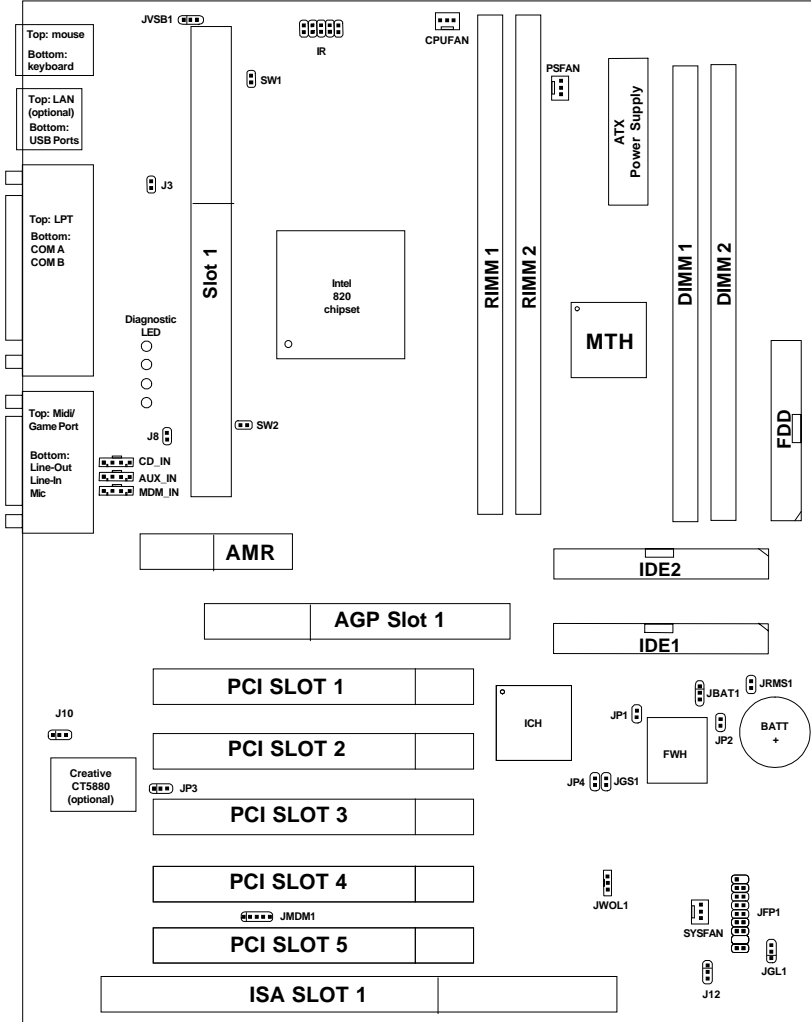
Dimension
- ATX Form Factor

Mounting
- 10 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

MS-6192 ATX CA7 Mainboard