Chapter 1

INTRODUCTION

The MS-6182 ATX WH8 mainboard is a high-performance computer mainboard based on Intel® 810 chipset. The MS-6182 is designed for the Intel® Pentium® II/III or Celeron™ processor for inexpensive business/personal desktop markets.

The Intel® 810 chipset is the first generation Integrated Graphics chipset for the Intel® Pentium® II/III Celeron™ processor. The graphics accelerator architecture consists of dedicated multi-media engines executing in parallel to deliver high performance 3D, 2D, and motion compensation video capabilities. 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® 810 chipset to provide an efficient communication channel between the memory controller hub and I/O hub controller.

The Intel® 810 chipset contains three core components: the Graphics and Memory Controller Hub (GMCH), the I/O Controller Hub (ICHO/ICH) and the Firmware Hub (FWH). The GMCH integrates a 66/100MHz, P6 family system bus controller, 2D/3D graphics accelerator, 100MHz SDRAM controller and high-speed hub interface for communication with the ICHO/ICH. The ICHO/ICH integrates an Ultra ATA/33(ICHO) or Ultra ATA/66(ICH) controller, USB host controller, LPC interface controller, FWH interface conroller, PCI interface controller, AC'97 digital controller and a hub interface for communication with the GMCH.

The Intel® 82802 Firmware Hub (FWH) component is part of the Intel® 810 chipset. The FWH is key to enabling future security and manageability infrastructure for the PC platform.

1.1 Mainboard Features

CPU
- Slot 1 for Intel® Pentium® II/Pentium® III/Celeron™ processor.
- Supports 233MHz, 266MHz, 300MHz, 333MHz, 350MHz, 400MHz, 450MHz, 500MHz and faster processor.

Chipset
- Intel® 810 (GMCH) chipset. (421 BGA)
  - Integrated Graphics Controller
  - Intel DDM Architecture
  - SDRAM memory Independent of System Bus
- Intel® ICH/ICH0 chipset. (241 BGA)
  - AC'97 Controller Integrated
  - 2 full IDE channels, up to ATA66
  - 2 full IDE channels, up to ATA33 (ICH0 only)
  - Low pin count interface for SIO

Front Side Bus (FSB)
- 66/100/133MHz clocks are supported.

Main Memory
- Support three 168-pin DIMM sockets.
- Support a maximum memory size of 256MB(64-bit) or 512MB(128-bit) SDRAM.

Slots
- One AMR(Audio Modem Riser) and one PTI(PanelLink TV-Out Interface)
- Six 32-bit PCI Bus slots and one 16-bit ISA slot (wherein one PCI/ISA slot is shared).
- Support 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 and 2 USB connectors
    - 1 IrDA connector for SIR.
    - 1 VGA port

Video
- GMCH chip integrated
- 2D/3D Graphics
- Onboard 4MB Display Cache (optional)

Audio
- ICH/ICH0 chip integrated
- Creative® ES1373 (optional)
    - Running on PCI BUS.
    - Support Direct Sound and Direct Sound 3D
    - AC97' Compliant

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.
- Adjustable FSB CPU core voltage.

Dimension
- ATX Form Factor: 30.5(L)x19.2(W)x4 layers PCB
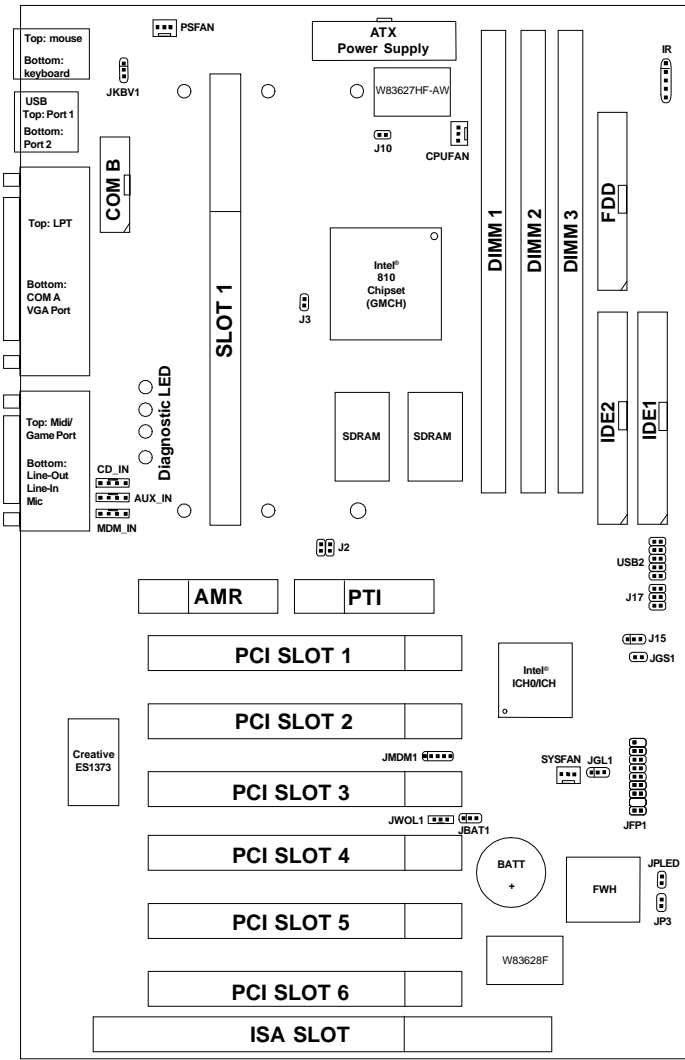
Mounting
- 8 mounting holes.

System Hardware Monitor
- CPU/Power Supply/Chassis Fan Revolution Detect
- CPU Fan Control (the fan will automatically stop when the system enters suspend mode)
- System Voltage Detect
- CPU Overheat Warning.
- Display Actual Current Voltage

Other Features
- Keyboard Password Wake-Up (reserved)
- LAN Wake-Up
- Internal/External Modem Wake-Up
- Suspend to RAM (STR)

1.2 Mainboard Layout

MS-6182 ATX WH8 Mainboard