

## **Chapter 1**

### **INTRODUCTION**

The MS-6178 MICRO ATX WH5 mainboard is a high-performance computer mainboard based on Intel® 810 chipset. The MS-6178 is designed for the Intel® Celeron™ (PPGA) processor for inexpensive business/personal desktop markets.

The Intel® 810 chipset is the first generation Integrated Graphics chipset for the Intel® 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/GMCH0), the I/O Controller Hub (ICH0/ICH) and the Firmware Hub (FWH). The GMCH integrates a 66/100MHz, P6 family system bus controller, integrates 2D/3D graphics accelerator, 100MHz SDRAM controller and high-speed hub interface for communication with the ICH0/ICH. The ICH0/ICH integrates an Ultra ATA/33(ICH0) or Ultra ATA/66(ICH) controller, USB host controller, LPC interface controller, FWH interface controller, PCI interface controller, AC'97 digital controller and a hub interface for communication with the GMCH/GMCH0.

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**

- Support Socket370 for Intel® Celeron™ processor.
- Support 300MHz, 333MHz, 366MHz, 400MHz, 433MHz, 466Mhz or higher

### **Chipset**

- Intel® 810 (GMCH/GMCH0) chipset. (421 BGA)
  - Integrated Graphics Controller
  - Intel DDM Architecture
  - SDRAM memory Independent of System Bus
  - Support 4MB Display Cache (only for GMCH)
- Intel® ICH/ICH0 chipset. (241 BGA)
  - AC'97 Controller Integrated
  - 2 full IDE channels, up to ATA66 (only for ICH)
  - Low pin count interface for SIO

### **Front Side Bus (FSB)**

- 66/100MHz clocks are supported.

### **Main Memory**

- Support two 168-pin DIMM sockets.
- Support a maximum memory size of 256MB(64Mbit technology) or 512MB(128Mbit technology) SDRAM.

### **Slots**

- One AMR (Audio Modem Riser) and one PTI (Panellink TV-Out Interface).
- Three 32-bit Master PCI Bus slots.
- Support 3.3v/5v PCI bus Interface.

### **On-Board IDE**

- An IDE controller on the ICH/ICH0 chipset provides IDE HDD/CD-ROM with PIO, Bus Master, Ultra DMA/33 and Ultra DAM/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 1 USB connector
  - 1 IrDA connector for SIR.
  - 1 VGA port

**Video**

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

**Audio**

- ICH chip integrated (Software Audio)
  - AC'97 Compliant
- Aureal Vortex 8810. (Hardware Audio -- Optional)
  - DirectSound hardware acceleration
  - Post processing hardware
  - Aureal Soft Wavetable
  - Aureal Soft A3D
  - Full Sound Blaster compatibility
  - Aureal Enhanced Motorola Softmodem with Silicon DAA support.

**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**

- Micro ATX Form Factor

**Mounting**

- 6 mounting holes.
-

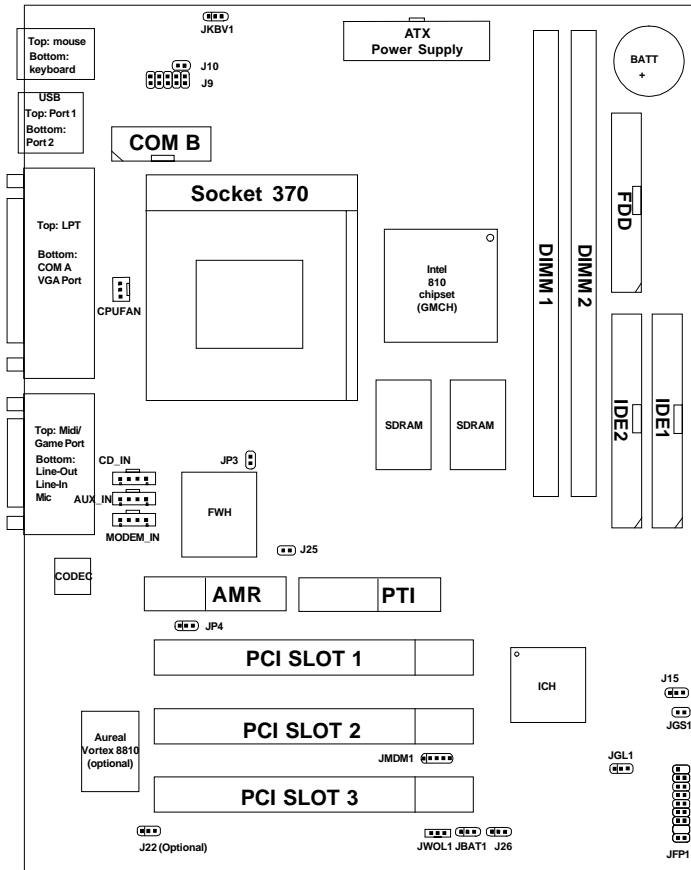
**System Hardware Monitor**

- CPU 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

## 1.2 Mainboard Layout



## MS-6178 MICRO ATX WH5 Mainboard