

## Chapter 1

### INTRODUCTION

The MS-6312 Flex ATX WH11 mainboard is a high-performance computer mainboard based on Intel® 810 (810/810 DC100/810e) chipset. The MS-6312 is designed for the Intel® Pentium III(FC-PGA) or Celeron™ 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 series of Intel® 810 chipset contains three core components: the Graphics and Memory Controller Hub (GMCH), the I/O Controller Hub (ICH) and the Firmware Hub (FWH). The GMCH integrates a 66/100MHz for 810 and 810 DC100 and 66/100/133 MHz for 810e, P6 family system bus controller, 2D/3D graphics accelerator, 100MHz SDRAM controller and high-speed hub interface for communication with the ICH. The ICH integrates an Ultra ATA 33(ICH0)/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.

The Intel® 82802 Firmware Hub (FWH) component is part of the series of 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™ and Pentium III(FC-PGA) processor.
- Support 366MHz, 400MHz, 433MHz, 466MHz, 500MHz, 550MHz, 667Mhz or higher

### **Chipset**

- Support the series of Intel® 810 (810/810DC100/810E) chipset.
- Intel® GMCH chipset. (421 BGA)
  - Integrated Graphics Controller
  - Intel DDM+ Architecture
  - SDRAM memory Independent of System Bus
- Intel® ICH chipset. (241 BGA)
  - AC'97 Controller Integrated
  - 2 full IDE channels, up to ATA66
  - Low pin count interface for SIO

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

- 66/100/133MHz 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**

- Two 32-bit Master PCI Bus slots.
- 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.
  - 1 serial header (optional)
  - 1 parallel port supports SPP/EPP/ECP mode (optional)
  - 5 USB ports(3 USB rear ports + 2 USB front headers--optional)
  - 1 IrDA connector for SIR. (optional)
  - 1 VGA port
  - 1 DVI (optional)
  - 3 Audio port (optional)

**Video**

- GMCH chip integrated
- 2D/3D Graphics
- Onboard 4MB SDRAM Display Cache (optional)
- Silicon Image Sil164 support Digital Output (optional)

**Audio**

- ICH chip integrated
- AC'97 2.1 Compliant
- Auto Sensing SPDIF Support

**Modem**

- Conexant Smart MCII & SmartDAA™ V.90 (optional)
  - Based on the company's patented DIB (Digital Isolation Barrier) technology which provides an error free and reliable digital communication channel.
  - Provides better performance with an isolation barrier while minimizing signal distortion.

**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
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which records your mainboard specifications.

**Dimension**

- Flex ATX Form Factor: 7.5" x 9" inches

**Mounting**

- 6 mounting holes.
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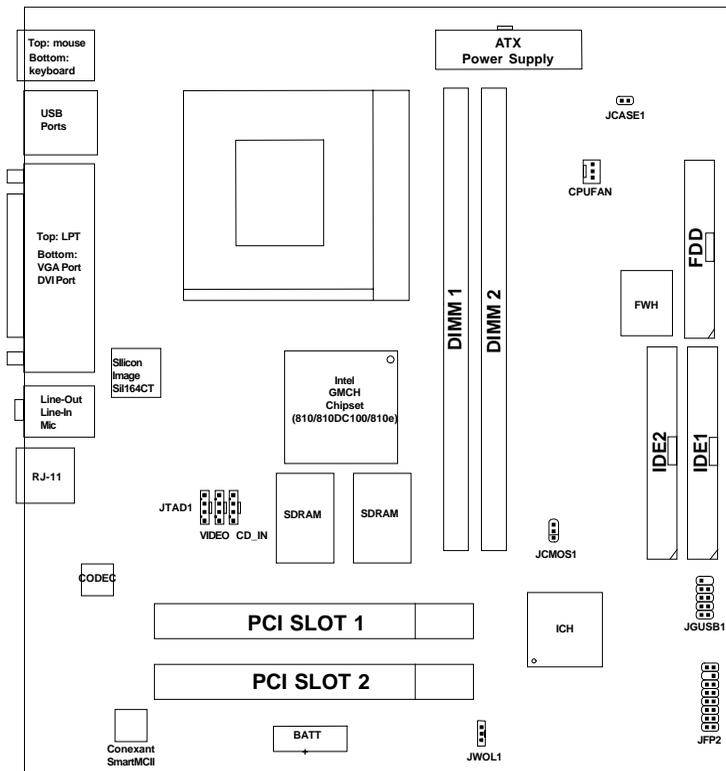
**Warning:** According to Intel 810 chipset specification: 810E chipset supports 66/100/133 MHz FSB processor and 810/810DC100 chipset supports 66/ 100 FSB processor. Please do not use 133MHz FSB processor on motherboards which use 810/810DC100 chipset.

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**Note:** To be able to identify the chipset used onboard. During POST (Power on Self Test), you can determine the chipset, which will appear briefly at the bottom left of the POST screen.

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**1.2 Mainboard Layout**



**MS-6312 Flex ATX WH11 Mainboard**