

Chapter 2

MAINBOARD INTRODUCTION

The MS-6176E Micro LPX WH4 mainboard is a high-performance all-in-one computer mainboard based on Intel® 810e chipset. The MS-6176E is designed for the Intel® Celeron™ processor/Coppermine processor for inexpensive business/personal desktop markets.

The Intel® 810e 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® 810e 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 66/100/133 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® 810e chipset. The FWH is key to enabling future security and manageability infrastructure for the PC platform.

2.1 Mainboard Features

CPU

- Support Socket370 for Intel® Celeron™/Coppermine processor.
- Support 300MHz, 333MHz, 366MHz, 400MHz, 433MHz, 466Mhz, 533MHz or higher

Chipset

- Intel® (GMCH) chipset. (421 BGA)
 - Integrated Graphics Controller
 - VGA memory supports up to 133MHz FSB (810e)
 - 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)

- For 810e: 66/75/83/95/100/117/124/133/138/140/150 MHz 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.

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 connectors(COM A)
 - 1 parallel port supports SPP/EPP/ECP mode
 - 2 USB port
 - 1 IrDA connector for SIR.
 - 1 Audio port Rear Panel
 - 3 Audio connector for Front Panel
 - 1 Game Port

Video

- GMCH chip integrated
- 2D/3D Graphics
- Onboard 4MB Display Cache
- Support PTI/AMR slot

Audio

- ICH chip integrated

Network

- Intel 82559 10/100M Ethernet
 - WFW baseline & NET PC specs compliant
 - Advanced Power Management (ACPI support)
 - Integrated Alert On LAN™
 - ARP & Flexible frame filtering
 - Software drivers are backwards compatible

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.
- ACPI(Advanced Configuration and Power Interface) feature.

Dimension

- μ LPX Form Factor : 26cm(L) x 28.6cm(W) x 4 layers PCB

Mounting

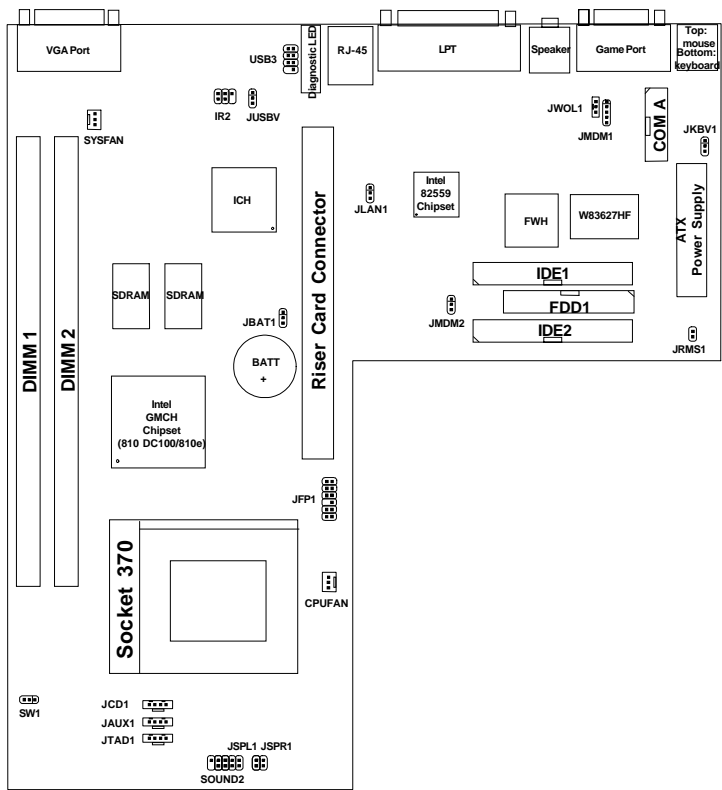
- 3 mounting holes.

Other Features

- Keyboard Password Wake-Up (reserved)
- LAN Wake-Up
- Internal/External Modem Wake-Up

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.

2.2 Mainboard Layout



MS-6176E MICRO LPX WH4 Mainboard