Chapter 1

INTRODUCTION

The MSI LPX ZX4 mainboard is a high-performance all-in-one computer mainboard based on the Intel® Celeron™ processor. This mainboard combines leading edge SiS 6326 AGP technology in graphics, Creative® ES1373 PCI technology in audio, and Intel® 82558 10/100M Ethernet for LAN. The Intel® Celeron™ processor supports MMX™ (Multimedia Extension) technology.

The mainboard uses the highly integrated Intel® 82443ZX AGPset to support the PCI/ISA and Green standards, and to provide the Host/AGP bridge. The Intel® 82371EB chipset integrates all system control functions such as ACPI (Advanced Configuration and Power Interface). The ACPI provides more Energy Saving Features for the OSPM(OS Direct Power Management) function. The Intel® 82371EB chipset also improves the IDE transfer rate by supporting Ultra DMA/33 IDE that transfers data at the rate of 33MB/s.

The mainboard also supports the System Hardware Monitor Controller as an optional function. Its functions include: CPU fan revolution detect, CPU/ system voltage monitor, system temperature monitor, and chassis intrusion detect(optional).

1.1 Mainboard Features

Processor
- Socket 370 for Intel® Celeron™ processor.
- Support 300MHz, 333MHz, 366MHz, 400MHz, 433MHz, 466MHz, or faster.
- Support Core/Bus Ratios: x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6, or higher

Chipset
- Intel® 82443ZX/PIIX4E chipset. (82440BX reserved)

FSB (Front Side Bus)
- 66.8/75/83.3/100/103/112/124/133.3MHz clocks are supported.

Main Memory
- Supports four memory banks using two 168-pin unbuffered DIMM.
- Supports a maximum memory size of 256MB DIMM only.
- Supports 3.3v SDRAM DIMM.

Slots
- Support riser card slot
- Riser card support two PCI slots.
- Support 3.3V PCI card.

On-Board IDE
- An IDE controller on the Intel® PIIX4E PCI Chipset provides IDE HDD/ CD-ROM with PIO, Bus Master and Ultra DMA/33 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 connector (COM B)

      - 1 parallel port supports SPP/EPP/ECP mode

      - 1 USB port

      - 1 IrDA (1.1 specifications, 115.2 KB/s to 4 MB/s)

      - 1 Audio port and 1 Midi/Game Port

      - 1 Video Port (Composite and S_Video Out)

Sound
- Creative® ES1373
  - Running on PCI BUS.
  - 64 Voice and AC3 Capable
  - Support Direct Sound and Direct Sound 3D
  - AC97' Compliant

Video
- SiS® 6326AGP/6326DVD
  - High Performance and High Quality 3D Accelerator
  - High Performance 2D Accelerator
  - Complete TV-Out solution (optional)
  - MPEG II/I Hardware Video Decoder
  - Video Acceleration

Network
- Intel 82558 10/100M Ethernet
  - WFW baseline & NET PC specs compliant
  - ACPI
  - Magic packet filtering to wake-up on LAN
  - ARP & Flexible frame filtering
  - Software drivers are backwards compatible

I/O Chip
- Winbond® multi super I/O W83977ATF-AW
  - 2M bps fast tape drive, IRQ sharing
  - Device Power Management
  - Real time clock (256 bytes RAM)
  - 8042-based keyboard controller (support PS/2 mouse)

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
- LPX Form Factor : 25cm(L) x 22.3cm(W) x 4 layers PCB
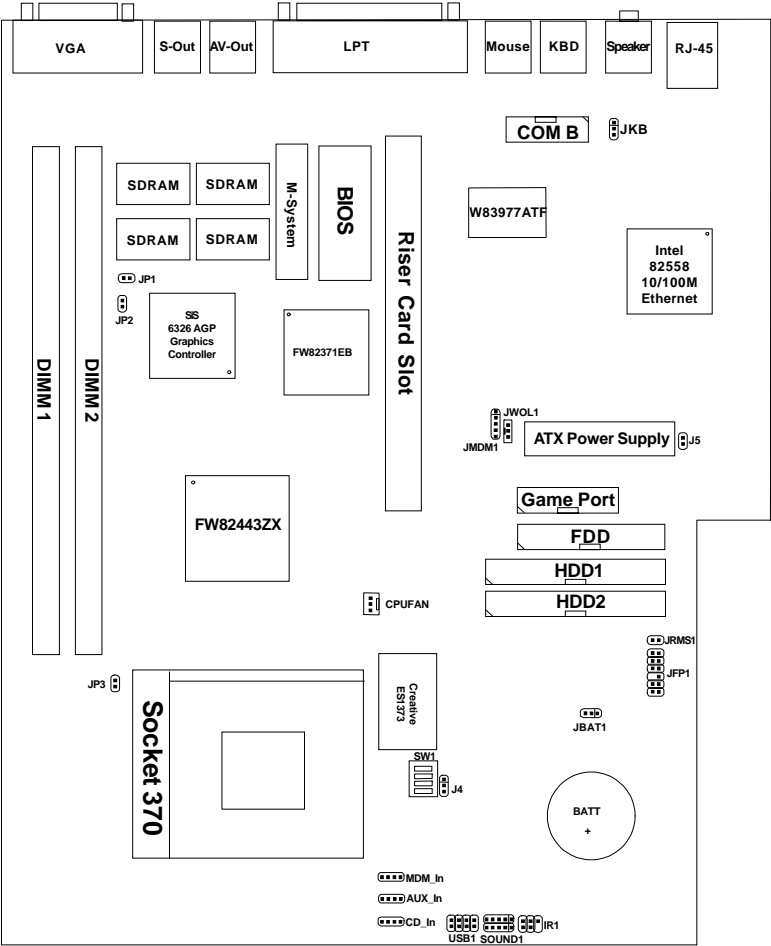
Mounting
- 4 mounting holes.

System Hardware Monitor (optional)
- 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
- LAN Wake-Up
- Internal/External Modem Wake-Up

1.2 Mainboard Layout

| VGA | S-Out | AV-Out | LPT | Mouse | KBD | Speaker | RJ-45 |

COM B   JKB

SDRAM   SDRAM   M-System   BIOS

W83977ATF

SDRAM   SDRAM

JP1

JP2

SiS 6326 AGP Graphics Controller

FW82371EB

Riser Card Slot

Intel 82558 10/100M Ethernet

DIMM 1   DIMM 2

JWOL1

JMDM1   ATX Power Supply   J5

Game Port

FW82443ZX

FDD

HDD1

CPUFAN   HDD2

JRMS1

JP3   Socket 370   Creative ES1373   JFP1

JBAT1

SW1

J4

BATT +

MDM_In

AUX_In

CD_In   IR1

USB1   SOUND1

MS-6165 LPX ZX4 Mainboard