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# Introduction

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The MS-6375 ATX mainboard is a high-performance computer mainboard based on ALi® **ALiMAGiK 1** chipset and designed for the AMD® Athlon™ or Duron™ (PGA) processor for inexpensive business/personal desktop markets.

The **ALiMAGiK 1** chipset consists of the M1647 Super Northbridge and the M1535D+ Southbridge. M1647 provides a single chip DDR (Double Data Rate) solution for Socket A infrastructure. It interfaces with AMD's 66/100/133MHz double data rate S2K front side bus and its built-in memory controller supports PC1600/2100 DDR and 66/100/133 SDRAM. By using PC2100 DDR, the M1647 enables 2.1GB/second peak bandwidth between system memory and Northbridge. With support for AGP 1x/2x/4x, M1647 can boost system performance for 3D graphics.

The M1535D+ Southbridge integrates many advanced controllers or functions including AC-Link Host Controller, ACPI support, green function, 2-channel dedicated Ultra-100 IDE Master controller, 2 USB controller, Super I/O and Fast IR support etc.

The **ALiMAGiK 1** chipset provides flexibility for users to choose the best solution for specific cost/performance they request.

This chapter includes the following topics:

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## **Chapter 1**

# **Mainboard Specification**

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### **CPU**

- Support Socket A (Socket-462) for AMD® Athlon™ /Duron™ processor
- Support CPU frequency at:
  - Athlon™: 550MHz~1.2GHz @100/133MHz FSB
  - Duron™: 550 MHz~850MHz @ 100/133MHz FSB

### **Chipset**

- ALi® M1647 chipset (528 BGA)
  - Optimum buffering architecture design for CPU to memory, AGP and PCI read/write operations
  - Support both S2K bus open-drain and push-pull mode
  - Support host bus frequency at 66, 100 or 133MHz double data rate
- ALi® M1535D+ chipset (352 BGA)
  - Provide a High Integration Bridge (with Audio, HSP mode, Super I/O & Fast IR) between PCI bus and Peripheral bus for desktop systems
  - Dual bus Master IDE Ultra DMA 33/66/100
  - Direct Sound AC97 Audio
  - AGP 1X/2X/4X Support
  - ACPI 1.0b

### **Clock Generator**

- ICS clock generator
- Support 66/100/133MHz clocks

### **Main Memory**

- Support four memory banks using two 168-pin SDRAM DIMMs and six memory banks using three 184-pin DDR DIMMs
- Support SDRAM at 66/100/133MHz & DDR at 200/266MHz
- Support 4, 16, 64, 128, 256, 512Mbit SDRAM/DDR
- Maximum memory size up to 3GB
- x-1-1-1-1-1-1 back-to-back page hit

### **Slots**

- One AGP (Accelerated Graphics Port) PRO slot
  - AGP v2.0 specification compliant

- One CNR (Communication Network Riser) slot
- Five 32-bit Master PCI Bus slots
- Supports 3.3V/5V PCI bus Interface

### **On-Board IDE**

- Support Ultra DMA Mode Transfers up to Mode 5 Timing (100Mbytes/sec)
- Support Command Queue IDE enhancement
- Can connect up to four IDE devices

### **Audio**

- Chip integrated
  - Direct Sound AC97 Audio
- Creative CT5880 (optional)
  - 64 Voice WaveTable Synthesizer
  - Sound Library of over 4000 different sounds
  - Support SPDIF (AC3)
  - Support Microsoft Direct Sound, Direct Sound 3D, Direct Music, and A3DAPL.

### **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 ports (COMA + COMB)
  - 1 parallel port supporting SPP/EPP/ECP mode
  - 6 USB ports (2 rear ports and 2 Front USB pin headers- 4 ports)
  - 1 IR connector for SIR/FIR
  - 1 Game/3 Audio ports

### **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

## ***Chapter 1***

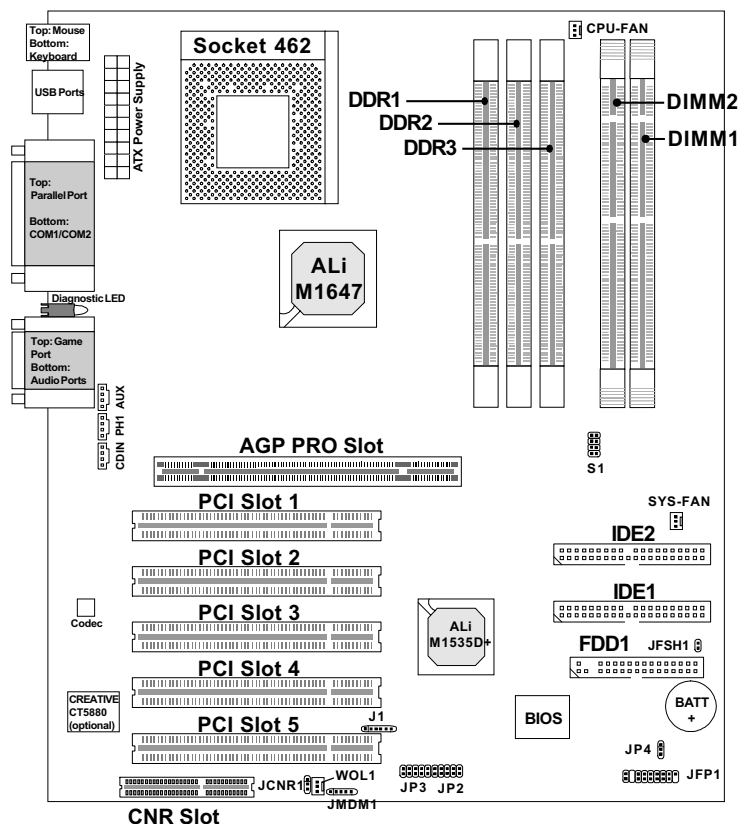
### **Dimension**

- ATX Form Factor (30.5 cm X 25 cm)

### **Mounting**

- 9 mounting holes

# Mainboard Layout



MS-6375 ATX Mainboard

## Chapter 1

# Quick Components Guide

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Component	Function	Reference
DIMM 1~2	Installing SDR SDRAM modules	See p. 2-4~2-5
DDR1~3	Installing DDR SDRAM modules	See p. 2-6
Socket 462	Installing CPU	See p. 2-2~2-3
CPU-FAN	Connecting to CPUFAN	See p. 2-19
SYS-FAN	Connecting to SYSTEM FAN	See p. 2-19
ATX Power Supply	Installing power supply	See p. 2-7
IDE1 & IDE2	Connecting to IDE hard disk drive	See p.2-14
FDD1	Connecting to floppy disk drive	See p.2-13
JP2 & JP3	Connecting to USB interfaces	See p. 2-13
PCI Slot 1~5	Installing expansion cards	See p. 2-26
AGP PRO Slot	Installing AGP cards	See p. 2-26
CNR Slot	Installing expansion cards	See p. 2-26
S1	Setting CPU & DRAM frequency	See p. 2-25
JMDM1	Connecting to modem module	See p. 2-17
WOL1	Connecting to LAN card	See p. 2-17
JFSH1	Locking/Unlocking BIOS Flash	See p. 2-23
JP4	Clearing CMOS data	See p. 2-22
JCNR1	Enabling onboard audio codec	See p. 2-24
JFP1	Connecting to case	See p. 2-15
J1	Connecting to IR module	See p. 2-19

## **Key Features**

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- Microsoft® PC99 compliant
- D-LED™ - 4 LEDs embedded in the mainboard
- PC Alert™ III system hardware monitor
- CPU: Socket A for AMD® Duron™/Athlon™ Processor
- ATX Form Factor
- Clock: 66/100/133MHz
- Audio: Chip integrated -- Direct Sound AC97 Audio codec
- Memory: 3 DDR DIMMs + 2 SDR DIMMs
- LAN Wake up Function
- Modem (External/Internal) Ring Wake up Function
- I/O: 2 serial ports, 1 parallel port, 6 USB ports, 1 floppy port, 1 IrDA connector, 3 Audio/1 Game port
- Slot: 1 AGP PRO slot, 1 CNR slot, 5 PCI slots

# MSI Special Features

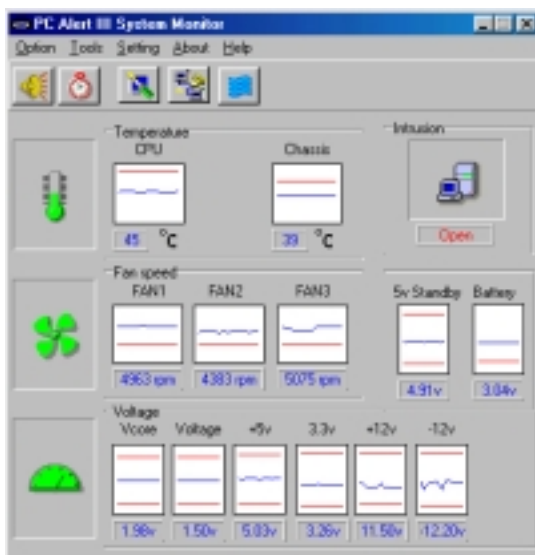
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## PC Alert™ III

The PC Alert™ III is an utility you can find in the CD-ROM disk. The utility is just like your PC doctor that can detect the following PC hardware status during real time operation:

- \* monitor CPU & system temperatures
- \* monitor fan speed(s)
- \* monitor system voltage
- \* monitor chassis intrusion

If one of the items above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This will continue to be shown, until user disables the warning.



**Note:** Items shown on PC Alert III vary depending on your system's status.





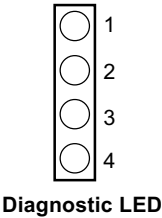
**Features:**

- Network Management
  - Monitoring & remote control
- Basic System Utilities
  - Scandisk & Defragment to maintain your HDD
- 3D Graphics Design
  - Enables a more friendly user interface
- Software Utilities
  - SoftCooler Optimized Cooling

Chapter 1











D-LED™

The D-LED™ uses graphic signal display to help users understand their system. Four LEDs embedded in the mainboard provide up to 16 combinations of signals to debug the system. The 4 LEDs can debug all problems that fail the system, such as VGA, RAM or other failures. This special feature is very useful for the overclocking users. These users can use the feature to detect if there are any problems or failures.



● Red      ○ Green

D-LED	Description
<div>1 2 3 4</div> <div><div>●●●●</div></div>	System Power ON - The D-LED will hang here if the processor is damaged or not installed properly.
<div><div>○●●●</div></div>	Early Chipset Initialization
<div><div>●○●●</div></div>	Memory Detection Test - Testing onboard memory size. The D-LED will hang if the memory module is damaged or not installed properly.
<div><div>○○●●</div></div>	Decompressing BIOS image to RAM for fast booting.
<div><div>●●○●</div></div>	Initializing Keyboard Controller.
<div><div>○●○●</div></div>	Testing VGA BIOS - This will start writing VGA sign-on message to the screen.

	<p>Processor Initialization</p> <p>- This will show information regarding the processor (like brand name, system bus, etc...)</p>
	<p>Testing RTC (Real Time Clock)</p>
	<p>Initializing Video Interface</p> <p>- This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.</p>
	<p>BIOS Sign On</p> <p>- This will start showing information about logo, processor brand name, etc....</p>
	<p>Testing Base and Extended Memory</p> <p>- Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.</p>
	<p>Assign Resources to all ISA.</p>
	<p>Initializing Hard Drive Controller</p> <p>- This will initialize IDE drive and controller.</p>
	<p>Initializing Floppy Drive Controller</p> <p>- This will initializing Floppy Drive and controller.</p>
	<p>Boot Attempt</p> <p>- This will set low stack and boot via INT 19h.</p>
	<p>Operating System Booting</p>