Chapter 1

Overview

AP59S is a high-performance Pentium®-based system board that utilizes **SIS 5591** AGPset on **Baby AT** PCI/ISA platform. This motherboard supports new architectures such as high speed **AGP** graphic port, **SDRAM**, **Ultra DMA/33**, **Bus master IDE** and **USB** port. It has **512KB** pipelined-burst second-level cache onboard and support two single in-line memory module (SIMM) plus two Dual in-line memory module (DIMM) that allows to **mix EDO and SDRAM** memory and expansion up to a maximum of **768MB**.

In addition, AP59S also implements:

High Efficient Synchronous Switching Regulator
Most of the current switching designs are Asynchronous mode, which from the technical point of view, still consumes very high power as well as heat. AP59S implements high efficient synchronous switching design that the temperature of MOS FET is far less than Schottky diode of Asynchronous design.

CPU core current protection
AP59S implements CPU core voltage 15A over-current protection to prevent any accident short circuit and prevent system damage.

CPU Thermal Protection (Optional)
AP59S has a special thermal detection circuit to have warning through application software when the temperature is higher than a predefined value.

CPU and Housing Fan Monitoring
AP59S has one more "fan monitoring" function to prevent system overheat. There are two fan connectors, one is for CPU and the other can be a extra housing fan. The system will report and alarm fan malfunction though utility software such as Hardware Monitor utility (named AOhw101, where 101 means version number).

Overview

Full-range CPU core voltage

This motherboard supports the CPU core voltage from 1.3V to 3.5V, that can be applied to various CPU type in future.

Resetable Fuse

AP59S implements resetable fuses to prevent any accidental short circuit caused by keyboard or USB devices hot plug.

Multi-language BIOS (Optional BIOS)

This breakthrough will help you set BIOS items without the language barrier.

FCC DoC certificate

AP59S has passed FCC DoC test. The radiation is very low, you can use any kind of housing.

Powerful utility software support

AOpen Bonus Pack bundled CD contains many useful utilities, such as Norton Antivirus, Hardware Monitor utility, and BIOS flash utility, etc.

1.1 Specifications

Form Factor	Baby AT
Board Size	220 mm x 242 mm
CPU	Intel Pentium Processor P54C, PP/MT (P55C), AMD K5/K6, Cyrix 6x86/M2 and IDT WinChip C6.
System Memory	FPM or EDO 72-pin SIMM x 2, and SDRAM 168-pin x 2. The maximum is 768MB.
Second-level Cache	512KB pipelined-burst cache onboard
Chipset	SiS 5591 AGPset
Expansion Slots	ISA x2 and PCI x3
Serial Port	Two serial ports UART 16C550 compatible
Parallel Port	One parallel port supports standard parallel port (SPP), enhanced parallel port (EPP) or extended capabilities port (ECP).
Floppy Interface	Floppy interface supports 3.5 inches drives with 720KB, 1.44MB or 2.88MB format or 5.25 inches drives with 360KB, 1.2MB format
IDE Interface	Dual-channel IDE interface support maximum 4 IDE hard disks or CDROM, mode 4 , bus master hard disk drives and Ultra DMA/33 mode hard drives are also supported.
USB Interface	Two USB ports supported by USB bracket, the BIOS also supports USB driver to simulate legacy keyboard.
PS/2 Mouse	PS/2 mouse supported by PS/2 mouse bracket.
Keyboard	Default AT compatible keyboard, mini-DIN PS/2 keyboard connector is optional.
RTC and Battery	RTC build in chipset, Lithium (CR-2032) battery.
BIOS	AWARD Plug-and-Play Flash ROM BIOS