M1563 (For Desktop PC)
M1563S (Small Package)
M1563M (For Mobile PC)
South Bridge Chip supporting HTT, SD / MS Host controller

Product Overview

The M1563 provides the highest integration south bridge solution between HyperTransport^{TM} Technology Link bus, PCI bus and peripheral buses for personal computer systems.

The M1563 integrates AC-Link Host Controller, 2-channel dedicated Ultra DMA mode 6 (ATA 133) IDE Master controller, USB 2.0/1.1 Host controllers with 6 ports in total, IO APIC controller, 1/10/100 Mb/s Fast Ethernet MAC layer, and HyperTransport^{TM} Technology Link interface. Additional features include Host Signal Processing (HSP) software modem solution, ACPI support, green function, and Real Time Clock.

The M1563 also provides the best power management solution. It incorporates ACPI support, deep green function, all into one 31mmx31mm BGA (Ball Grid Array) chip.

HyperTransport^{TM} Technology (HTT) I/O Link

- HyperTransport^{TM} Technology I/O Link Protocol meets the v1.02 Specification
- 8-bit HTT links in each direction
- Support > 400 megabytes per second of simultaneous input and output bandwidth (> 200 MHz) HTT clock

PCI Interface

- PCI spec. 2.3 Compliant
- PCI Power Management Interface spec 1.1 Compliant
- Support up to 6 PCI Masters
- Support up to 6 PCI arbitration priority of PREQ#/PGNT#

Steerable PCI Interrupt for PCI Device Plug & Play

Enhanced DMA Controller

Interrupt Controller

Counter/Timers

Serialized IRQ Supported

Built-in keyboard Controller

Built-in Real Time Clock

PMU Features

- Full Support for ACPI and OS Directed Power Management
- Full Support for Instantly Available PC feature
- CPU SMM Legacy Mode and SMI Feature Supported
- PMU Operation States : G0, G1(S1, S3, S4), G2(S5), G3
- CLKRUN# Function supported for PCI Mobile Design Guide v1.1 (Mobile Only)
- Clock Generator Control Logic Supported

USB

- One EHCI USB 2.0 and Three OHCI USB 1.1 Host Controllers for Supporting up to six USB Ports
- Support HS, FS, and LS data trans rate
- Support Legacy Keyboard and Mouse

Fast Infra-Red

⇢ Support IrDA 1.0 and IrDA 1.1
⇢ Support Sharp-IR

Built-in PCI Controller

⇢ Support Ultra DMA Mode Transfers up to Mode 6 Timing (100/133/Mbytes/sec)
⇢ Support 48-bit LBA (Large Disk), hard driver larger than 137 GB
⇢ Support PIO Modes up to Mode 4 Timings, and Multiword DMA
⇢ Mode 0, 1, 2 with Independent Timing of up to 4 Drives

Low Pin Count (LPC) Interface

⇢ Support LPC interface for legacy devices
⇢ Support 2 Master/DMA devices

Memory Stick

⇢ Built-in Memory Stick Host Controller for supporting Sony
⇢ Memory Stick Standard Interface Specification v1.3

Secure Digital

⇢ Copyrights Protection Mechanism-Complies with highest security of SDMI standard
⇢ Data bus width (4-bit or 1-bit) operation mode selectable
⇢ UP to 10Mbyte/sec Read/Write rate (using 4 parallel; data lines)
⇢ Support Built-in writes protection features.

Audio System

⇢ Fully Plug-and-Play controller and software
⇢ PCI 2.2 compliant bus master optimized for multiple stream operation
⇢ Scatter-gathering support
⇢ 6 audio playback channels: PCM_out L/R, Surr L/R, Center and LFE
⇢ SPDIF in/out channel

Software Modem Interface

⇢ Provide the AC '97 2.2 compliant digital controller interface for third parties (such as the AMC Codec's vendor) to enable the software modem solution
⇢ AC '97 2.2 GPIO pin status and control support
⇢ Power Management and wake-up event support
⇢ Caller ID string transmission via AC-link support

1/10/100 Mb/s Fast Ethernet MAC

⇢ Provide the 1/10/100 Mbps Medium Access Control (MAC) controller for the best solution of the Ethernet LAN connectivity
⇢ Compliant with IEEE 802.3u 100BASE-TX, IEEE802.3 10BASE-T standard
⇢ Compliant with the Network Device Class Power Management 1.0
⇢ Compliant with IEEE 802.3u Auto-negotiation protocol for automatic link type selection
⇢ MII Interface
⇢ WFM 2.0 compliance

Packaging

⇢ M1563/M1563M Package: 444-ball (31mm x 31mm) BGA

⇢ M1563S Package: 444-ball (23mm x 23mm) BGA