

# M1573

## ULi Super PCI Express™ South Bridge



- PCI Express™ interface to North Bridge
- USB 2.0 interface
- Support Serial ATA Advanced Host Controller Interface (AHCI)
- Support Ethernet LAN connectivity
- Raid 1, 0, 0+1, JBOD
- UAA (Azalia)/AC'97 audio support
- Power Speed II
- TPM Rev. 1.2 devices security support

Featuring PCI Express™, the newest high-performance and low-cost I/O interconnect architecture, the M1573 is the highest integration south bridge solution between PCI-Express Link bus, PCI bus, and peripheral buses for personal computer systems.

The M1573 integrates a High Definition (HD) Audio/AC'97 Host Controller, 2-channel dedicated Ultra-66/100/133 IDE Master controller, SATA Host Controller, USB 2.0/1.1 Host controllers, IO APIC controller, as well as 1/10/100 Mb/s Fast Ethernet MAC layer and PCI Express interface.

Additional features include Host Signal Processing (HSP) software modem solution, ACPI support, green function, and Real Time Clock. The built-in SATA host controller supports up-to 4 SATA ports; each supports SATA 1.0, 1.5Gbps data rate, SATA II feature and AHCI.

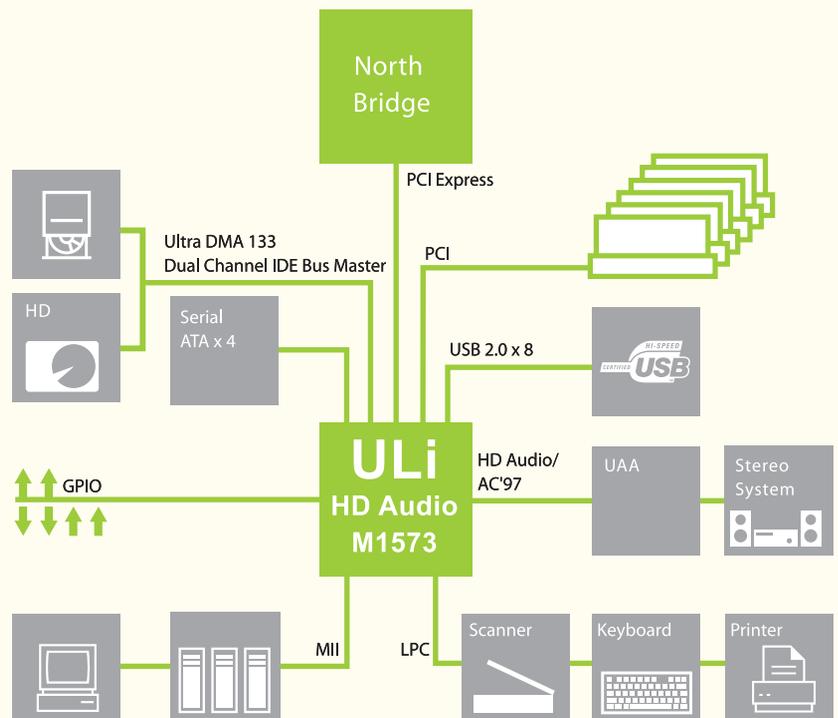
By incorporating USB 2.0 host controller with the data transfer rate up to 480 Mb/s, the M1573 provides the most advanced connectivity for higher performance USB devices. 8 USB ports are supported with 1 USB 2.0 EHCI (Enhanced Host Controller Interface) controller and 3 USB 1.1 OHCI controllers.

The built-in Audio solution in the M1573 is an advanced PCI HSP audio controller with Scatter-gathering DMA fully supported. The M1573 Audio is compliant with standard AC'97 and its successor HD Audio. 6 audio playback channels for PCM\_out L/R, Surr L/R, Center and LFE, dual PCM inputs and dual microphone inputs are supported on AC-Link, while 6 independent output streams and 5 input streams are supported on HD Audio Link. Each HD Audio stream can have 8/16/24/32-bit samples at rate from 8kHz to 192kHz, with channel numbers from 1 to 16.

The M1573 also provides the best power management solution. The M1573 incorporates ACPI support, deep green function, and 2-channel Ultra DMA-33/66/100/133 IDE bus master controller, all into one 31mmx31mm BGA (Ball Grid Array) chip.

### M1573 Architecture

The following diagram illustrates M1573 architecture. Through the high integration of the M1573, board designers can cost-effectively build motherboard with the rich features of PCI Express Link, PCI, USB, Ethernet MII, Ultra-66/100/133 IDE, SATA, HD Audio/AC'97 2.3 Compliant CODEC, LPC, ACPI, GPIO, and deep green functions.



# M1573

## ULi Super PCI Express™ South Bridge

### Features

#### High Integration South Bridge

- Integrated with Audio, HSP Modem, LAN, USB, and IDE, M1573 is a high integration bridge between PCI Express, PCI and Peripheral Buses for Desktop and Notebook Systems.

#### PCI Express™ Interface

- Low-overhead, low-latency communications
- Comprehend different data types and ordering rules.
- Power Management.

#### PCI Interface

- Supports PCI Master and Slave Interface.
- PCI spec. 2.3 compliant.
- PCI Power Management Interface spec. 1.1 compliant.

#### Provides Steerable PCI Interrupts for PCI Device Plug-and-Play

#### Serial ATA Host Controller

- Supports SATA 1.0 (High Speed Serialized AT Attachment, Revision 1.0a), 1.5 Gb/s data rate.

#### Enhanced DMA Controller

- Provides 7 Programmable Channels, 4 for 8-bit

#### Interrupt Controller

- Provides 14 Interrupt Channels.
- Independent Programmable Level/Edge Triggered Channels.
- Integrated IO-APIC capability.

#### Counter/Timers

- Provides 8254 Compatible Timers for System
- Timer, Refresh Request, and Speaker Output Use

#### Serialized IRQ Supported

- Quiet/Continuous Mode.
- Programmable (Default 21) IRQ/DATA Frames.

#### Build-in Real Time Clock

- Common calendar year with leap year compensation.
- Binary or BCD data representation
- 12/24 hour mode.
- Daylight saving time option.

#### 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 support.
- Full Support of Clock Control Functions.
- Supports I/O Trap for I/O Restart Feature.

#### USB Interface

- One EHCI USB 2.0 and three OHCI USB 1.1
- Host Controllers for supporting up to eight USB ports.

#### Low Pin Count (LPC Rev1.1) Interface

- Supports LPC interface for legacy devices.
- Supports 2 Master/DMA devices.
- Supports firmware memory cycles with up to 16 byte read.

#### Audio System

- Intel HD Audio compliant: enable DVD audio, streaming video, Internet phone communications as well as auto switching and detection of audio devices.
- Fully Plug-and-Play PCI controller and software.

#### HD Audio Controller

- Microsoft Universal Audio Architecture (UAA) compliant.
- 6 generic output stream DMA Engines.
- 5 generic input stream DMA Engines.
- CORB/RIRB support.
- Immediate command/response interface support.

#### Software Modem Interface

- Provides AC'97 2.3 compliant digital controller interface for third parties (such as the AMC Codec's vendor) to enable the software modem solution.

#### 1/10/100 Mb/s Fast Ethernet MAC

- Provides 1/10/100 Mbps Medium Access Control (MAC) controller for the best solution of the phone-line/Ethernet LAN connectivity.
- Compliant with IEEE 802.3u 100BASE-TX, IEEE 802.3 10BASE-T standard

#### 628-Ball (31mm x 31mm) BGA Package