M1575

PCI Express™ South Bridge with Advanced Storage Solution

ULi SATA II 3G M1575

- Serial ATA II 3Gb/s (AHCI) with NCQ Support
- RAID 1, 0, 0+1, 5, JBOD
- PCI Express™ Interface to North Bridge
- High Definition Audio
- Full ACPI and legacy Interrupt/DMA support
- Pin-to-pin compatible with M1573
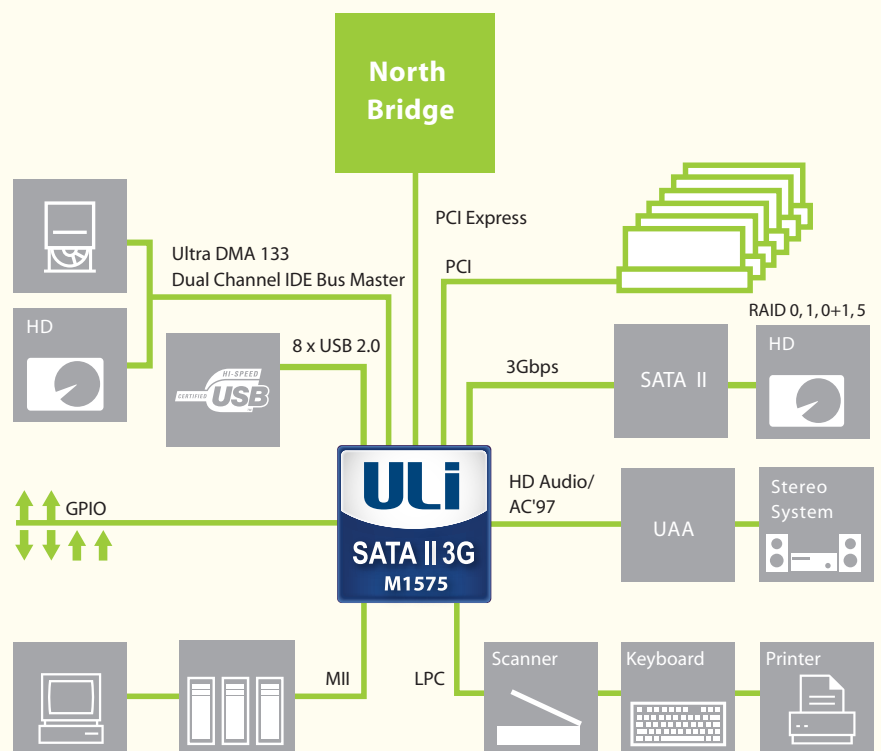
Digital Lifestyle South Bridge

ULi M1575 is a highly integrated PCI Express™ South Bridge that features advanced core technologies designed for desktop and mobile computing applications.

Utilizing the evolutionary PCI Express™ bus architecture, M1575 offers system manufacturers with unprecedented design-flexibility. It can be connected to other PCI Express™ North Bridge or Switch via the built-in PCI Express™ x4 link. With the M1575 configured as an endpoint, a PCI Express™ add-in card with M1575 on-board can easily empower any system with all the latest advanced I/O features such as SATA II 3Gbps, HD Audio, 8-port USB 2.0 host controller, 10/100 802.3x MAC, and soft-modem interface etc.

Because of the pin-to-pin compatibility to its predecessor M1573, M1575 is a near direct drop-in to the existing motherboards designed. As such, effort from the motherboard manufacturers to upgrade both the features and the performance of their existing design are minimized.

Designed with advanced storage capabilities, the M1575 features unique support of up to 4-ports AHCI based SATA II 3Gbps with NCQ (Native Command Queuing) and two ATA-133 as well as supports RAID 0, RAID 1, RAID 0+1, RAID 5, and JBOD capabilities to provide highly efficient disk management and enhanced overall storage performance.

M1575 Block Diagram

North Bridge

PCI Express

Ultra DMA 133
Dual Channel IDE Bus Master

PCI

HD

8 x USB 2.0

RAID 0, 1, 0+1, 5

3Gbps

SATA II

HD

ULi SATA II 3G M1575

HD Audio/
AC'97

UAA

Stereo System

GPIO

MII

LPC

Scanner

Keyboard

Printer

ULi

M1575

PCI Express™ South Bridge with Advanced Storage Solution

Features

High Integration South Bridge
• Integrated with Audio, HSP Modem, LAN, USB, and IDE, M1575 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 II 3Gbps Host Controller
• AHCI (Advanced Host Controller Interface) with NCQ (Native Command Queuing) support
• Supports SATA up to 3Gbps data rate
• Supports Host adapter register interface (SCR, Status and Control Registers)
• Independent DMA operation on four ports

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.

SoftwareModemInterface
• 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

ULi