CyberALADDiN-P4

ALi M1672/B Northbridge with Integrated Graphic Chip
Supporting Intel® Pentium® 4 & Pentium® M Processors with
DDR 266, SDR 133 and Ultra-ATA 133

M1672/B

- Intel® Pentium® 4 & Pentium® M Processors Support
- 400 MHz System Bus
- DDR 200/266, SDR 100/133 DRAM
- Ultra-ATA 66/100/133

M1672/B is ALi and Trident's new generation of low-power PCI Northbridge solution supporting the latest Intel® Pentium® 4 & Pentium® M Processors family with DDR memory technology and fully PC2001 compliant.
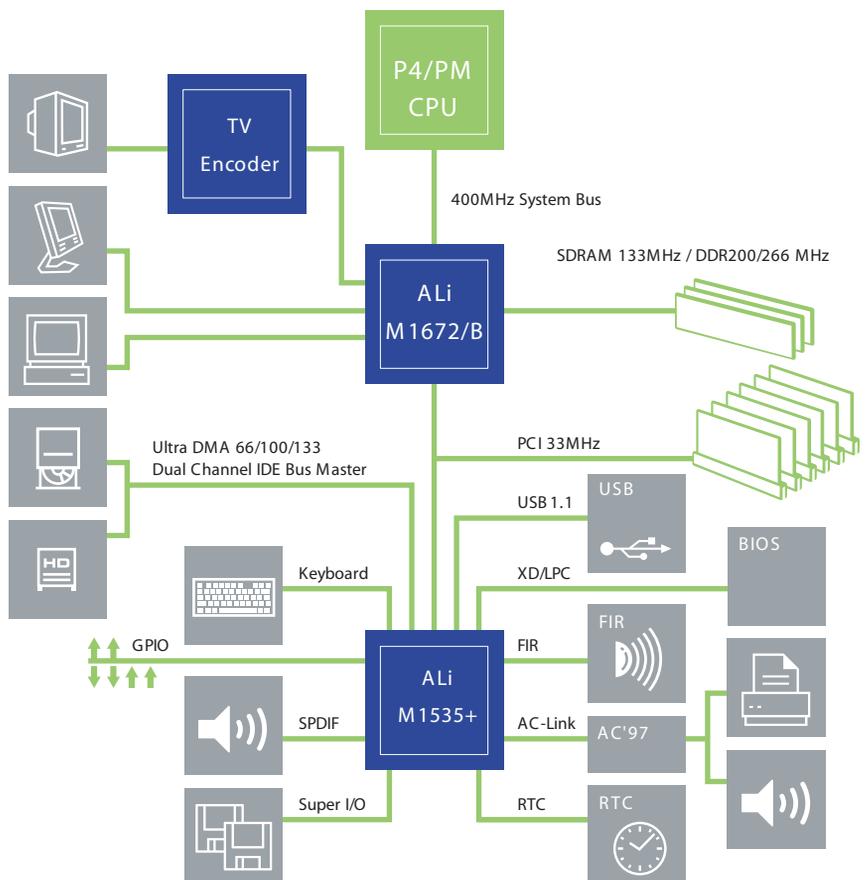
M1672/B interfaces to the Pentium® 4 & Pentium® M processors through the 400MHz P4 / PM System Bus and supports high-performance PC2100 memory system consisted of 64-bit memory bus with either 100/133 SDR or 200/266 DDR memory chips.

On the graphics side, M1672/B integrates the DX7 and DX8 ready 2D/3D graphics core (CyberBlade XP) from Trident Microsystems. The CyberBlade XP graphics core contains Dual-Pixel Quad-Texture rendering pipelines plus a partial hardware Transform and Lighting (T&L) unit, and can provide enough processing power to satisfy demanding 3D graphics requirements.

With Ultra ATA133 supported, the M1672/B provides an enhanced data-rate transfer that is capable of supporting larger capacity and faster hard drives.

The M1672/B seamlessly works with series of integrated Southbridge chipsets such as M1535+ providing a complete, flexible and cost-effective solution for PC system designers.

General Block Diagram:

ALi

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ALi PCI Northbridge Core Logic Processor Support

- Supports Intel® Pentium® 4 & Pentium®M microprocessors family with host bus frequency can be up to 400MHz
- 64-bit data bus and 32-bit addressing bus
- Optimum buffering architecture design for CPU to memory
- AGP and PCI read/write
- Flexible configuration to support back-to-back read transfer in 1QW or 2QW
- Supports back-to-back write transfer
- Supports synchronous / pseudo asynchronous clock mode between processor and memory interface with optimized latency

Memory Support

- Supports SDR DRAM PC-100, PC-133
- Supports DDR up to 200, 266MHz
- Supports symmetrical and asymmetrical SDRAM / DDR addressing
- Supports 64, 128, 256, 512Mbit SDRAM / DDR
- Maximum memory size: 3GB
- Supports 6 memory rows with per byte access on each row
- Supports memory shadowing
- X-1-1-1-1-1-1 back-to-back page hit
- CAS before RAS and self refresh for SDRAM
- Pipelined SDRAM / DDR cycle control with hidden pre-charge
- Dynamic switching CKE algorithm
- Supports LVTTL / SSTL2 signal level

Advanced Mobile Power Management

- Low power cell design
- Suspend and standby modes
- Internal clock gating on each functional block
- PCIPM (H/W PCI initiated)
- AGP Busy#/Stop# and PCI Clock Run#
- ACPI and DPMS support

High Performance DirectX 7.0 3D Engine

DVD Playback

PCI Bus Support

- Supports synchronous / asynchronous clock mode between the processor bus and the PCI bus
- 32-bit Address / Data PCI bus using PCI bus driver technology
- Supports up to 5 PCI masters excluding the M1672 and PCI-to-ISA bridge
- Parity protection on all PCI bus signals
- Fully supports PCI Configuration Space Enable (CSE) protocol
- Fully compliant with PCI Rev. 2.2
- Supports delayed transaction
- Dynamic memory prefetch algorithm and programmable post write flush algorithm
- Data Collection/Write assembly of line bursts
- Supports concurrent PCI bus burst transfer at zero wait-states

Trident CyberBlade XP Graphic Core
Highly Integrated Graphics Engine

- Advanced CyberBlade XP® Dual-Pixel, Quad-Texture
- Single-Pass 3D rendering engine
- 128-bit internal bus interface to Core logic block
- Supports Microsoft DirectX 7.0/8.0 with Cubic Mapping
- Integrated Dual-channel LVDS transmitter
- Digital interface to external TMDS transmitter
- Digital interface to external TV encoder
- DVD hardware assist with Motion Compensation (MC) and Inverse Discrete Cosine Transform (IDCT)
- TrueVideo™ with Advanced Video De-interlacing
- PC2001 Compliant

Packaging

- 645 balls in 37.5 x 37.5mm BGA package