M5271

ALi P1394 / USB2.0 / MS / SD Controller
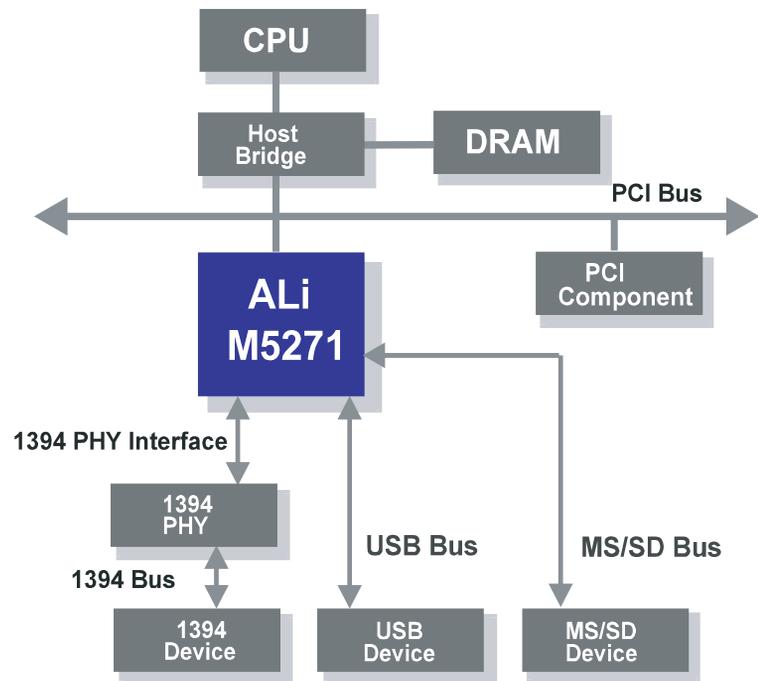
- **P1394 PHY Interface**
- **USB Interface**
- **Memory Stick Interface**
- **SD Interface**
- **PCI Interface**

ALi's M5271 provides personal computer systems with PCI device solution of the highest integration. It integrates a P1394a-2000 Link layer chip that is fully compliant with the 1394 Open Host Controller Interface (Open HCI) Specification Release 1.1, four USB 2.0/1.1 Host controllers for a total of 6 ports, and a Memory Stick Host Controller for supporting Sony Memory Stick Standard Interface Specification v1.03 and SD interface.

By incorporating USB 2.0 host controller with the data transfer rate up to 480 Mb/s, the M5271provides the most advanced connectivity for higher performance USB devices. 6 USB ports are supported with 1 USB 2.0 EHCI (Enhanced Host Controller Interface) controller and 3 USB 1.1 OHCI controllers.

The M5271 supports 100 Mbps, 200 Mbps, and 400 Mbps data transfer rates defined by P1394a-2000. It can work with the PHY that conforms to P1394-1995 or P1394a-2000 specifications. The M5271 is Cycle Master and Isochronous Resource Manager programmable. It supports 8 IT (Isochronous Transmit) contexts and 4 IR (Isochronous Receive) contexts for real-time data transfer.

System Block Diagram

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The M5271 provides PCI interface up to 66 MHz. It is PCI specification 2.2 compliant and supports PCI bus power management specification 1.1. In addition, the M5271 supports CLKRUN# function for mobile applications, which stops PCICLK when there is no activity on the PCI bus. The M5271 PCI module also supports high performance bus master commands such as Memory Read Multiple, Memory Read Line, and Memory Write and Invalidate.

P1394 PHY Interface

- Compliant with 1394 Open Host Controller Interface (OHCI) specification revision 1.1.
- Supports 100 Mbps, 200 Mbps, and 400 Mbps data transfer rates.
- Compatible with IEEE1394-1995 and P1394a-2000 PHY Layer Chip.
- Cycle Master and Isochronous Resource Manager Capability.
- Provides 8 Isochronous Transmit contexts.
- Provides 4 Isochronous Receive contexts.
- Provides 4K Byte FIFO for Transmit packets, and 4K Byte FIFO for Receive packets.
- Supports Physical DMA Data Transfer.
- Supports ROM Interface for an external configuration ROM, GUID ROM, and PCI expansion ROM.

USB Interface

- One EHCI USB 2.0 and three OHCI USB 1.1 Host Controllers for supporting up to six USB Ports.
- Supports HS (480Mbits/sec), FS (12Mbits/sec) and LS (1.5Mbits/sec) data transfer rate.
- Supports system wake up from S1 - S4.
- Supports Legacy Keyboard and Mouse emulation in DOS environment.

Memory Stick Interface

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

SD Interface

- Data bus width (4-bit or 1-bit) operation mode selectable.
- UP to 10Mbyte/sec Read/Write rate (using 4 parallel data lines).
- Programmable SD Memory card bus clock generation.
- CRC protection for the SD Memory card bus communication.
- Pointer based and Buffered data transfer.
- Block card access.
- Support Built_in writes protection features.

PCI Interface

- Compliant with PCI specification 2.2.
- Supports up to 66 MHz PCI interface clock.
- Supports PCI bus power management specification 1.1.
- Supports PCI mobile CLKRUNJ function.
- High performance PCI bus master.

0.25 um CMOS process.

2.5 V core, 3.3 V I/O, 5V tolerant input.

160-pin PQFP or 160-pin LQFP Package.