XSAT2104 Product Brief

1. Description

The XSAT2104 is a four-port, 3 Gbps or 6 Gbps SATA Host Bus Adapter that has a one-lane PCIe 2.0 interface and SATA controller functions. The XSAT2104 has four 6 Gbps SATA ports.

The XSAT2104 supports devices conforming to the Serial ATA International Organization: Serial ATA Revision 3.1 Specification.

2. Features

- 1.1V core and 3.3V I/O power supplies;
- Reference clock frequency of 25MHz, provided by an external clock source or generated by an external crystal oscillator.
- PCIe 2.0 endpoint device;
- Conform to PCIe 2.0 Specification;
- Support communication speed of 2.5Gbps and 5Gbps;
- Support AHCI programming interface registers for the SATA controller;
- Support aggressive power management;
- Support error reporting, recovery and correction;
- Support Message Signaled Interrupt (MSI);
- Higher PCIe read request efficiency.

- Conform to Serial ATA Specification 3.1;
- Support communication speed of 6 Gbps, 3 Gbps and 1.5 Gbps.
- Support signal levels of programmable transmitter;
- Support Gen 1i, Gen 1x, Gen 2i, Gen 2m, Gen 2x and Gen 3i;
- Support four SATA ports;
- Support AHCI 1.0 programming interface;
- Support Native Command Queuing (NCQ);
- Support Partial and Slumber Power Management states;
- Support Staggered Spin-up.
- A four-pin interface provides read and write access to an external SPI flash or SPI ROM device.
- The controller reads vendor-specific information stored in the external device during the chip power-up.
- PCI Boot ROMs of PCIe function 0 can also be stored in the external SPI device and read through the Expansion ROM BAR and the SPI interface controller.
- There are eight general purpose I/O (GPIO) ports.
- Each of GPIO pins can be assigned to act as a general input or output pin.
- Each of GPIO inputs can be

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programmed to generate an edge-sensitive or a level-sensitive maskable interrupt.

- Each of GPIO outputs can be programmed to blink a connected LED at a user-defined fixed rate. The default rate is 100 ms.

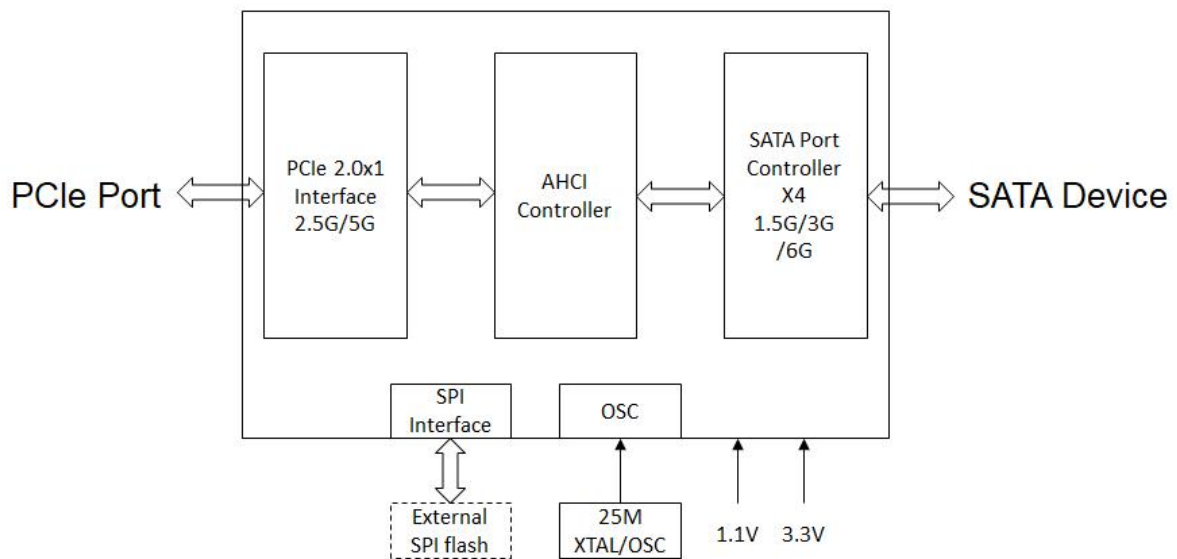## 3. Applications

- PC/IPC Motherboard
- NoteBook
- Server Motherboard
- NVR
- NAS

4. Functional Diagram

Figure 1 Functional Diagra