

OX16PCI952

Intelligent DUAL Channel UART with PCI

- Two 16C950 High performance UART channels
- IEEE1284 SPP/EPP/ECP parallel port
- Multi-function target PCI controller, fully PCI 2.2 and PCI Power Management 1.0 compliant
- UARTs fully software compatible with 16C550-type devices.
- Baud rates up to 15Mbps in asynchronous mode and 60Mbps in external 1x clock mode
- 128-byte deep FIFO per transmitter and receiver
- Flexible clock prescaler from 1 to 31.875
- Automated in-band flow control using programmable Xon/Xoff in both directions
- Automated out-of-band flow control using CTS#/RTS# and/or DSR#/DTR#
- Arbitrary trigger levels for receiver and transmitter FIFO interrupts and automatic in-band and out-of-band flow control
- Infra-red (IrDA) receiver and transmitter operation
- 9-bit data framing as well as 5,6,7 and 8
- 2 multi-purpose IO pins which can be configured as interrupt input pins
- Can be reconfigured using optional non-volatile configuration memory (EEPROM)
- Global Interrupt Status and readable FIFO levels to facilitate implementation of efficient device drivers
- Operation via IO or memory mapping.
- Detection of bad data in the receiver FIFO
- 5.0V operation
- 128 TQFP Package

The OX16PCI952 is a single chip solution for PCI-based serial and parallel expansion add-in cards. It is a dual function PCI device, where function 0 offers two ultra-high performance OX16C950 UARTs, and

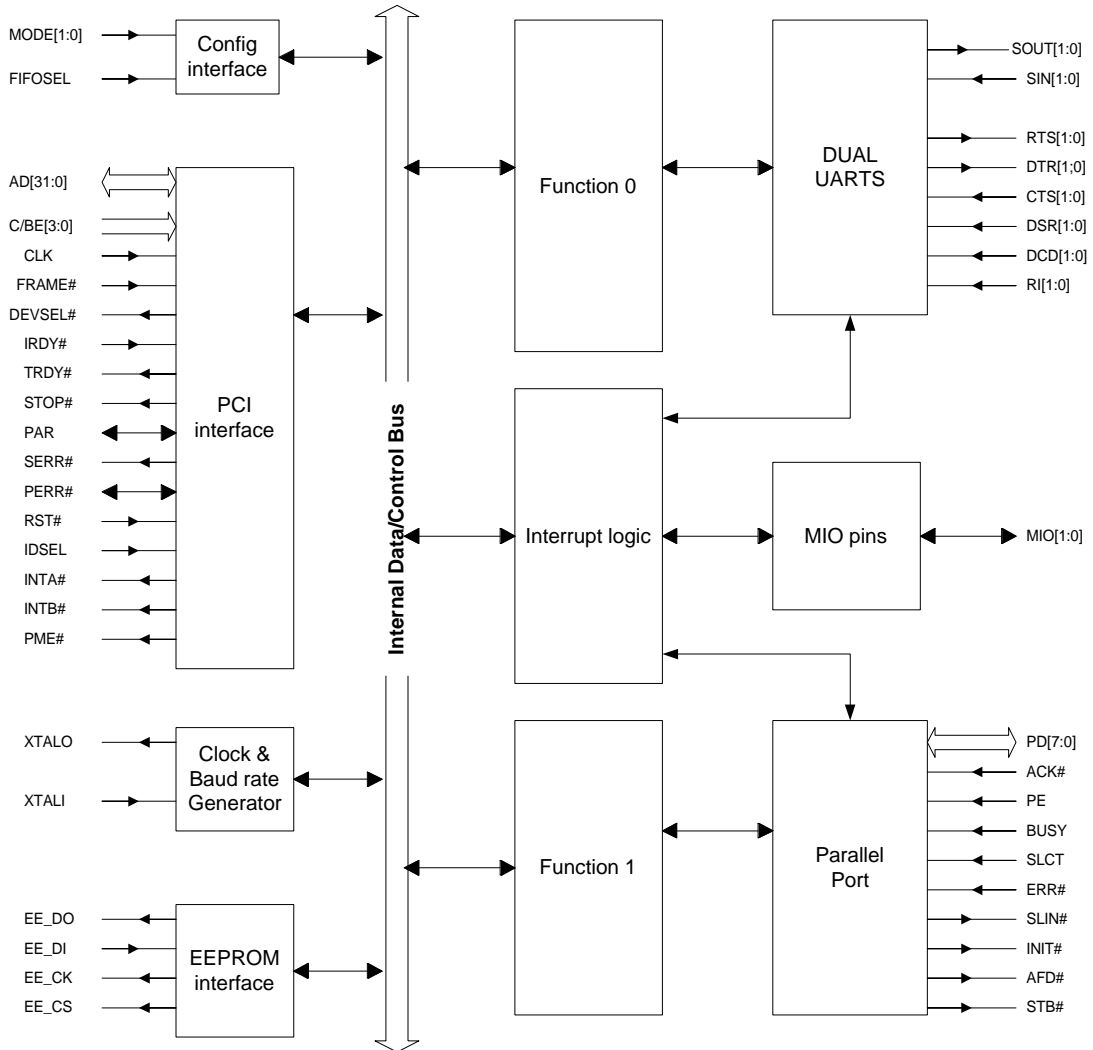
function 1 is a bi-directional parallel port. Serial port cards with 2 serial ports and a parallel port can be designed without redefining any device parameters.

Each channel in the OX16PCI952, the fastest available PC-compatible UART, offers data rates up to 15Mbps and 128-deep transmitter and receiver FIFOs. Deep FIFOs reduce CPU overhead and allow utilisation of higher data rates. Each channel is software compatible with the widely used industry-standard 16C550 devices and compatibles as well as the OX16C95x family of high performance UARTs. In addition to increased performance and FIFO size, the UARTs also provide the full set of OX16C95x enhanced features including automated in-band flow control, readable FIFO levels etc.

The efficient 32-bit, 33MHz target-only PCI interface is compliant with version 2.2 of the PCI Bus Specification and version 1.0 of PCI Power Management Specification. For full flexibility, all the default register values can be overwritten using an optional Microwire™ serial EEPROM.

To enhance device driver efficiency and reduce interrupt latency, internal UARTs have multi-port features such as shadowed FIFO fill levels, a global interrupt source register and Good-Data Status, all readable in two adjacent DWORD registers visible to logical functions in IO space and memory space.

The OX16PCI952 also provides an IEEE1284 SPP/EPP/ECP parallel port that fully supports the existing Centronics interface.



Block Diagram of the OX16PCI952