

OX16C950B

Intelligent Single Channel UART

- Baud rates up to 15 Mbps in normal mode and 60Mbps in external 1x clock mode
- Single full-duplex asynchronous channel
- 128-byte deep transmitter / receiver FIFO
- Fully software compatible with industry standard 16C550 type UARTs
- Pin compatible with TL16C550B/C, ST16C650 and TL16C750
- IBM PC/AT compatible
- Readable FIFO levels
- Flexible clock prescaler from 1 to 31.875
- Isochronous mode using external 1x baud rate clock up to 60Mbps
- 9-bit data framing as well as 5,6,7 and 8
- Detection of bad data in the receiver FIFO
- Automated in-band flow control using programmable Xon/Xoff characters
- Transmitter and receiver can be disabled
- Automated out-of-band flow control using CTS# / RTS# and DSR# / DTR#
- Readable in-band and out-of-band flow control status
- Programmable special character detection
- Arbitrary trigger levels for receiver and transmitter FIFO interrupts and automatic in-band and out-of-band flow control
- Transmitter idle interrupt (shift register and FIFO both empty)
- Optional Infra-red (IrDA) receiver and transmitter operation
- RS-485 buffer enable signals
- Software channel reset
- Four byte device ID
- Sleep mode (low operating current)
- System clock up to 60 MHz
- 3.3v / 5 volts operation
- 44 PLCC and 48 TQFP packages

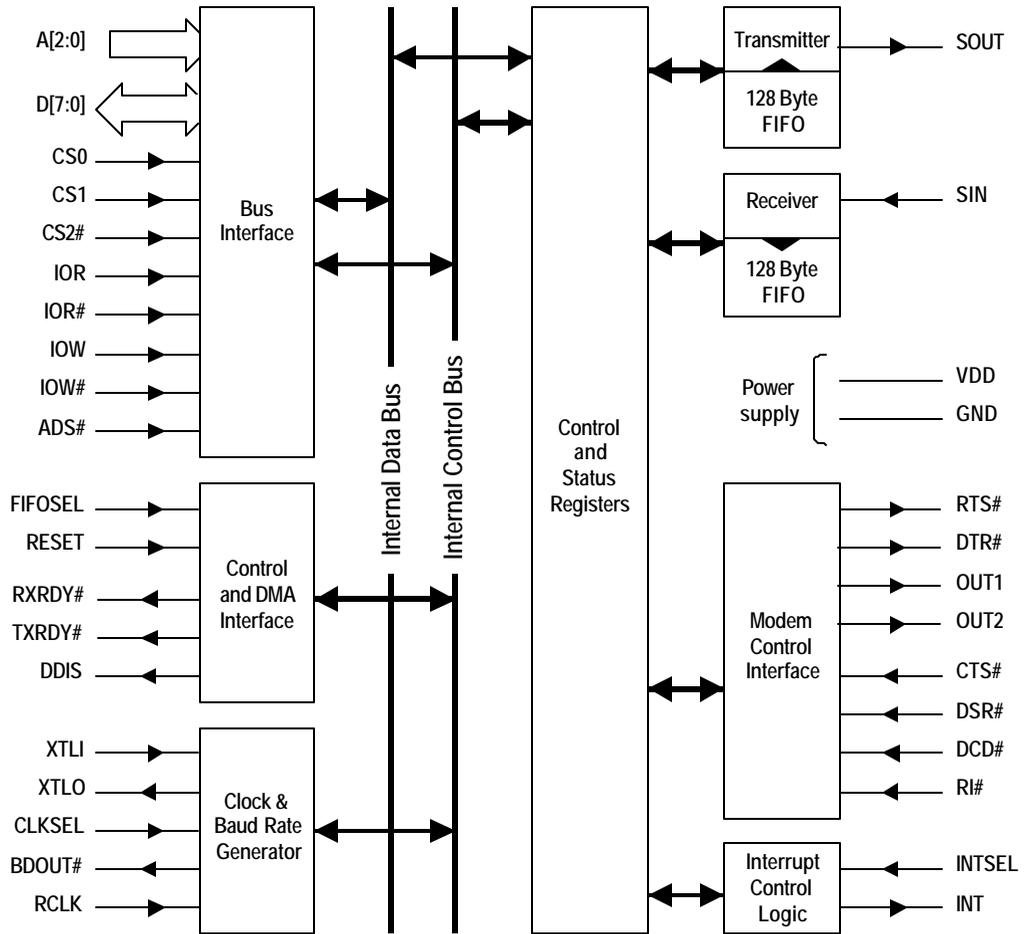
The OX16C950B is a single-channel ultra-high performance UART offering data rates up to 15Mbps and 128-deep transmitter and receiver FIFOs. Deep FIFOs reduce CPU overhead and allow utilisation of higher data rates.

It is software compatible with the widely used industry-standard 16C550 type devices and compatibles, as well as other OX16C95x family devices. It is pin-compatible with the TL16C550B/C, TL16C750 and ST16C650 devices.

In addition to increased performance and FIFO size, the OX16C950B also provides enhanced features including improved flow control. Automated software flow control using Xon/Xoff and automated hardware flow control using CTS#/RTS# and DSR#/DTR# prevent FIFO overrun. Flow control and interrupt thresholds are fully programmable and readable, enabling programmers to fine-tune the performance of their system. FIFO levels are readable to facilitate fast driver applications.

The addition of software reset enables recovery from unforeseen error conditions allowing drivers to restart gracefully. The OX16C950B supports 9-bit data frames used in multi-drop industrial protocols. It also offers multiple external clock options for isochronous applications, e.g. ISDN, xDSL.

The OX16C950B is ideally suited to PC applications, such as high-speed COM port add-in cards which enable PC users to take advantage of the maximum performance of analogue modems or ISDN terminal adapters. It is also suitable for any equipment requiring high speed RS232/RS422/RS485 interfaces. The OX16C950B also has a low operating current and sleep mode for battery powered applications.



Block Diagram of the OX16C950B