

## GENERAL DESCRIPTION

The XR16M770<sup>1</sup> (M770) is an enhanced Universal Asynchronous Receiver and Transmitter (UART) with 64 bytes of transmit and receive FIFOs, programmable transmit and receive FIFO trigger levels, automatic hardware and software flow control, and data rates of up to 16 Mbps at 3.3V, 12.5 Mbps at 2.5V and 8 Mbps at 1.8V with 4X data sampling rate.

The Auto RS-485 Half-Duplex Direction control feature simplifies both the hardware and software for half-duplex RS-485 applications. In addition, the Multidrop mode with Auto Address detection increases the performance by simplifying the software routines.

The Independent TX/RX Baud Rate Generator feature allows the transmitter and receiver to operate at different baud rates. Power consumption of the M770 can be minimized by enabling the sleep mode and PowerSave mode.

The M770 has a 16550 compatible register set that provide users with operating status and control, receiver error indications, and modem serial interface controls. An internal loopback capability allows onboard diagnostics. The M770 is available in 24-pin QFN, 32-pin QFN and 25-pin BGA packages. All three packages offer the 16 mode (Intel bus) interface only.

**NOTE:** 1 Covered by U.S. Patent #5,649,122.

## FEATURES

- Pin-to-pin compatible with XR16L570 in the 24-QFN and 32-QFN packages
- Intel data bus interface
- 16Mbps maximum data rate
- Programmable TX/RX FIFO Trigger Levels
- TX/RX FIFO Level Counters
- Independent TX/RX Baud Rate Generator
- Fractional Baud Rate Generator
- Auto RTS/CTS Hardware Flow Control
- Auto XON/XOFF Software Flow Control
- Auto RS-485 Half-Duplex Direction Control
- Multidrop mode w/ Auto Address Detect
- Sleep Mode with Automatic Wake-up
- PowerSave mode in 24-pin QFN package
- Infrared (IrDA 1.0 and 1.1) mode
- 1.62V to 3.63V supply operation
- Crystal oscillator or external clock input

## APPLICATIONS

- Personal Digital Assistants (PDA)
- Cellular Phones/Data Devices
- Battery-Operated Devices
- Global Positioning System (GPS)
- Bluetooth

FIGURE 1. XR16M770 BLOCK DIAGRAM

