XR16M752/XR68M752
High Performance Low Voltage DUART with 64-Byte FIFO

Ideal for High Speed Data Transmission at Low Voltages

T he XR16M752 and XR68M752 product family consists of two high performance Universal Asynchronous Receiver Transmitter (UART) with 64 byte transmit and receive FIFOs. Each UART is compatible to the industry standard 16550 UART, but with enhanced features such as programmable TX and RX FIFO trigger levels, automatic hardware (RTS/CTS) flow control, automatic software (XON/XOFF) flow control, sleep mode, and a fractional baud rate generator. In addition, the XR68M752 can operate in both the Intel and Motorola bus mode.

The fractional baud rate generator is a new feature that provides more flexibility on the selection of a clock or crystal frequency. Traditionally, the baud rate generator allowed divisors of 1 to 2^{16} in increments of 1. By being limited to whole numbers, there were only specific clock or crystal frequencies that could be used depending on what baud rate (or data rate) each channel is operating. With the new fractional baud rate generator, divisors can be from 1 to $(2^{16} - 0.0625)$ in increments of 0.0625 (or 1/16). The fractional divisor allows the use of non-standard clock frequency to be used to generate standard baud rates and the use of standard clock frequency to generate non-standard baud rates.

All devices operate from 1.62V to 3.63V. Each channel of the XR16M752 and XR68M752 is capable of data rates up to 16 MBps at 3.3V with a 4X sampling clock. The XR16M752 is pin and software compatible with the TL16C752B and SC16C752B. The XR16M752 and XR68M752 are available in 48-pin TQFP and 32-pin QFN packages.
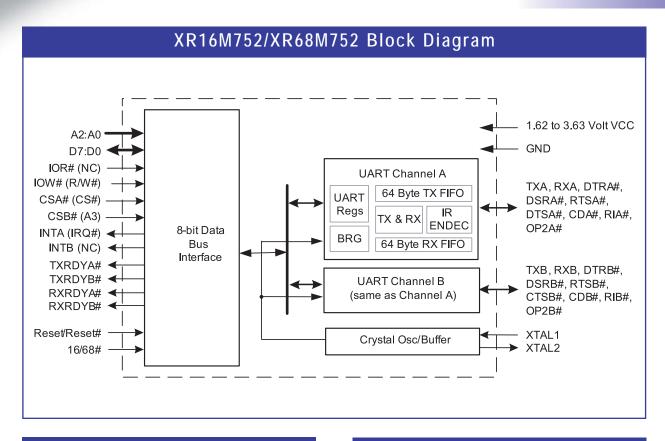
Major Features

- **1.62V to 3.63V operation**
- **Pin-to-pin and software compatible to TI's TL16C752B and Philips' SC16C752B in the 48-TQFP package**
- **Two independent UART channels**
- **Crystal oscillator (up to 24MHz) or external clock (up to 64MHz) input**
- **Automatic sleep mode**
- **Data rated up to 16MBps**
- **48-TQFP and 32-QFN packages**

[1]Covered by U.S. Patent #5,649,122

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XR16M752/XR68M752 Block Diagram

Features

- Two independent UART channels
- Data rate of up to 16 MBps at 3.3 V
- Data rate of up to 12.5 MBps at 2.5 V
- Data rate of up to 8 MBps at 1.8 V
- Fractional baud rate generator
- Data sampling rates of 16X, 8X and 4X
- Transmit and receive FIFOs of 64 bytes
- Programmable TX and RX FIFO trigger levels
- Automatic hardware (RTS/CTS) flow control
- Automatic software (Xon/Xoff) flow control
- Halt and resume transmission control
- Automatic RS-485 half-duplex direction control output via RTS#
- Wireless infrared (IrDA 1.0) encoder/decoder
- Automatic sleep mode
- Full modem interface

Applications

- Portable Appliances
- Telecommunication Network Routers
- Ethernet Network Routers
- Cellular Data Devices
- Factory Automation and Process Controls

Ordering Information

Product No.	Package	Operating Temp. Range
XR16M752IL32	32-QFN	-40°C to +85°C
XR16M752IM48	48-TQFP	-40°C to +85°C
XR68M752IL32	32-QFN	-40°C to +85°C
XR68M752IM48	48-TQFP	-40°C to +85°C