XR16V598/XR16V698
16-Byte and 32-Byte High Performance 2.25V to 3.6V Octal UART with Fractional Baud Rate Generator

Ideal for Low Power, Embedded Applications

The XR16V598[1] (598) and XR16V698[1] (698) are 2.25V to 3.6V octal Universal Asynchronous Receiver and Transmitter (UART) with 5V tolerant serial (modem) inputs. The highly integrated device is designed for high bandwidth requirements in communication systems. The global interrupt source register provides a complete interrupt status indication for all 8 channels to speed up interrupt parsing.

The XR16V598[1] (598) and XR16V698[1] (698) integrate the functions of 8 enhanced 16550 UARTs, a general purpose 16-bit timer/counter and an on-chip oscillator. The device configuration registers include a set of four consecutive interrupt source registers that provides interrupt-status for all 8 UARTs, timer/counter and a sleep wake up indicator. Each UART channel has its own 16550 UART compatible configuration register set for individual channel control, status, and data transfer. Additionally, each UART channel has 16 Bytes (V598) or 32 Bytes (V698) of transmit and receive FIFOs, automatic RTS/CTS or DTR/DSR hardware flow control with hysteresis control, automatic Xon/Xoff and special character software flow control, programmable transmit and receive FIFO trigger levels, FIFO level counters, infrared encoder and decoder (IrDA ver. 1.0), programmable fractional baud rate generator with a prescaler of divide by 1 or 4, and data rate up to 16Mbps with 4X sampling clock or 8Mbps with 8X sampling clock or 4Mbps with 16X sampling clock.

Major Features

- **2.25V to 3.6V Operation with 5V Tolerant Serial Inputs**
- **Single Interrupt output for all 8 UARTs**
- **A Global Interrupt Source Register for all 8 UARTs**
- **5G "Flat" UART Registers for easier programming**
- **Fractional Baud Rate Generator**
- **Simultaneous Initialization of all UART channels**
- **A General Purpose Command-driven 16-bit Timer/counter**
- **Sleep Mode with Wake-up Indication**
- **Highly Integrated Device for Space Saving**
- **Pin Compatible to XR16V798 and XR16L788**
- **Pb-Free, RoHS Compliant Versions Offered**

[1]Covered by U.S. Patents #5,649,122 and #5,949,787

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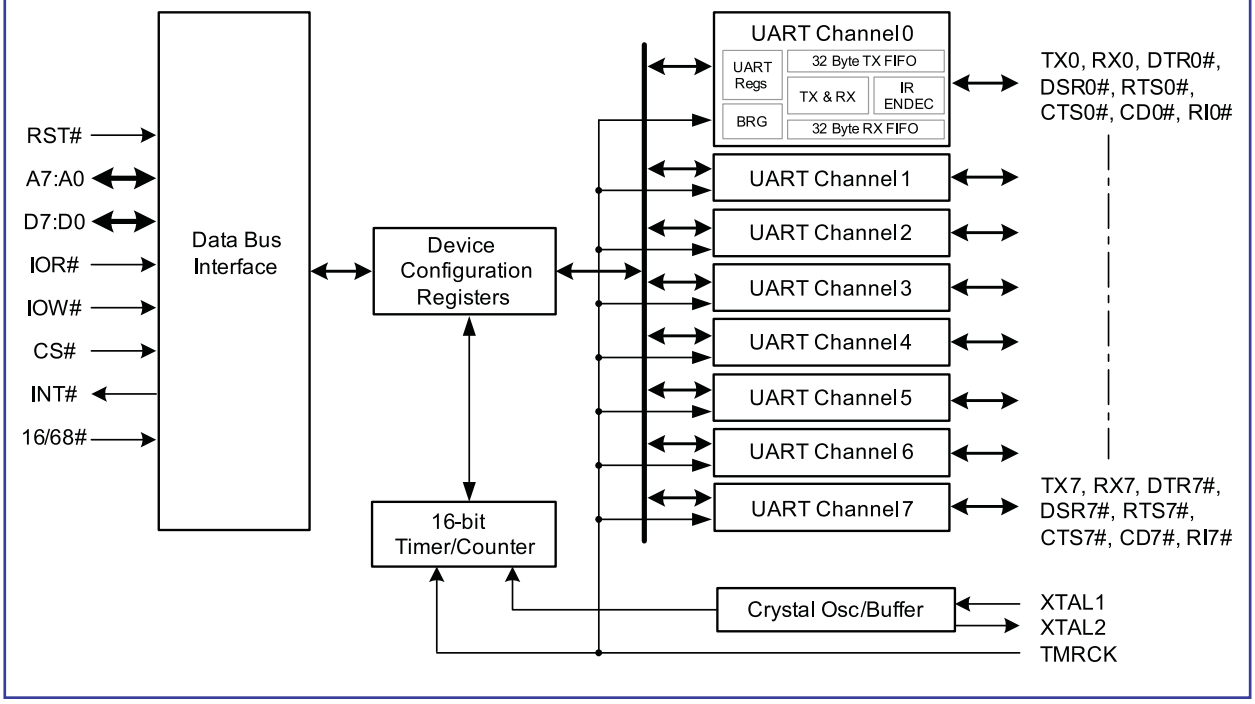
XR16V698 Block Diagram



Features

- Each UART is independently controlled with:
  - 16C550 Compatible 5G Register Set
  - Transmit and Receive FIFOs
    - 16 Bytes (XR16V598)
    - 32 Bytes (XR16V698)
  - Fractional Baud Rate Generator
  - Transmit and Receive FIFO Level Counters
  - Programmable TX and RX FIFO Trigger Level
  - Automatic RTS/CTS or DTR/DSR Flow Control
  - Automatic Xon/Xoff Software Flow Control
  - RS485 HDX Control Output with Selectable Turn-around Delay
  - Infrared (IrDA 1.0) Data Encoder/Decoder
  - Programmable Data Rate with Prescaler
- Up to 16 Mbps Serial Data Rate
- Pin compatible to XR16V798 and XR16L788
- Same 100-pin QFP Package (14x20x3 mm)

Applications

- Remote Access Servers
- Ethernet Network to Serial Ports
- Network Management
- Factory Automation and Process Control
- Point-of-Sale Systems
- Multi-port RS-232/RS-422/RS-485 Cards

Ordering Information

Product No.	*Package*	*Operating Temp. Range*
XR16V598IQ100	*100-Lead QFP*	*-40°C to +85°C*
XR16V698IQ100	*100-Lead QFP*	*-40°C to +85°C*

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