

XR16V554/554D/564/564D/654/654D

2.25V to 3.6V Quad UART with 16/32/64-Byte FIFO

Ideal for High Speed Data Transmission at Low Voltages

The XR16V554¹ (V554) is a quad Universal Asynchronous Receiver and Transmitter (UART) with 16 bytes of transmit and receive FIFOs, selectable receive FIFO trigger levels and data rates of up to 4Mbps at 3.3V. The XR16V564¹ (V564) and XR16V654¹ (V654) are enhanced quad Universal Asynchronous Receiver and Transmitters (UART) with 32 and 64 bytes of transmit and receive FIFOs respectively, selectable transmit and receive FIFO trigger levels, automatic hardware and software flow control, and data rates of up to 16 Mbps at 4X sampling rate. Each UART has a set of registers that provide the user with operating status and control, receiver error indications, and modem serial interface controls. An internal loopback capability allows onboard diagnostics.

The V554, V564 and V654 are available in 48-pin QFN, 64-pin LQFP, 68-pin PLCC and 80-pin LQFP packages. The V654 is also available in 100-pin QFP package. While the 64-pin and 80-pin packages support the 16 mode interface only, the 48, 68 and 100 pin packages offer an additional 68 mode interface which allows easy integration with Motorola processors. The 64-pin packages XR16V554, XR16V564 and XR16V654 offer three-state interrupt output while the XR16V554D, XR16V564D and XR16V654D provide continuous interrupt output. The other packages have an input that selects the state of the interrupt output pins upon power-up. The 100-pin package provides additional FIFO status outputs (TXRDY# and RXRDY# A-D), separate infrared transmit data outputs (IRTX A-D) and channel C external clock input (CHCCLK). All three products are compatible with the industry standard ST16C554. The V654 is also compatible with the industry standard ST16C654/654D.

¹Covered by U.S. Patent #5,649,122



Major Features

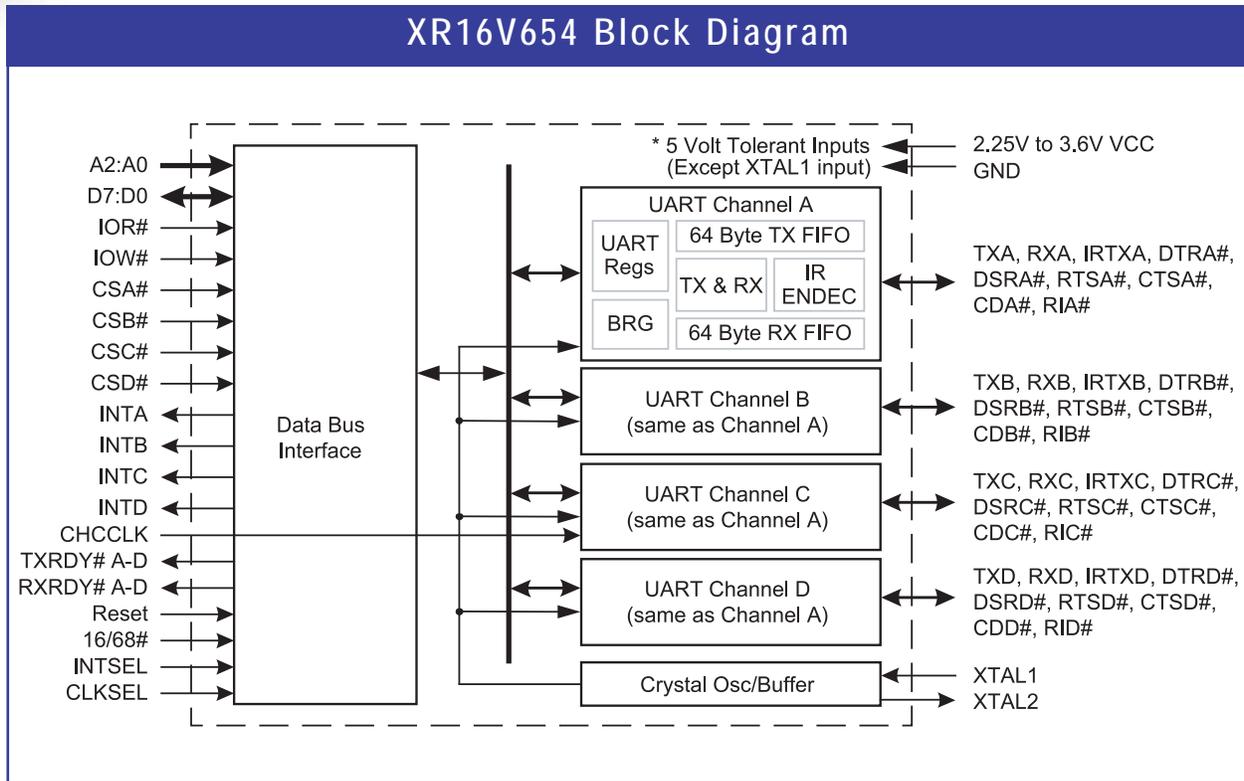
- Pin-to-pin compatible with ST16C454, ST16C554, TI TL16C754B, L16C554B, Philips SC16C754B, and SC16C554B
- Intel or Motorola Data Bus Interface select
- Four independent UART channels
- Register Set Compatible to Industry Standard 16C550
- Data rates of up to 4 Mbps for the V554 and up to 16 Mbps for the V564 and V654
- 16, 32 or 64-Byte Transmit FIFO
- 16, 32 or 64-Byte Receive FIFO with error tags
- 48-pin QFN, 64-pin LQFP, 68-pin PLCC, 80-pin LQFP, and 100-pin QFP package (V654 only)
- 5V Tolerant inputs (except XTAL1)

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Features

- Standard (V554, V564 & V654):**
- 4 Selectable RX FIFO Trigger Levels
 - Full modem interface
 - 2.25V to 3.6V supply operation
 - Crystal oscillator or external clock input

- Enhanced (V564 & V654):**
- 4 Selectable TX and RX FIFO Trigger Levels
 - Automatic Hardware (RTS/CTS) Flow Control
 - Automatic Software (Xon/Xoff) Flow Control
 - Programmable Xon/Xoff characters
 - Wireless Infrared (IrDA 1.0) Encoder/Decoder
 - Sleep Mode with automatic wake-up

Applications

- Portable/Handheld Devices
- Remote Access Servers
- Multi-Port Expansion Cards
- Cellular Data Devices
- Factory Automation and Process Controls

Ordering Information

Product No.	Package	Operating Temp. Range
<i>XR16V554IJ, XR16V564IJ, XR16V654IJ</i>	68-Lead PLCC	-40°C to +85°C
<i>XR16V554IL, XR16V564IL, XR16V654IL</i>	48-Pin QFN	-40°C to +85°C
<i>XR16V554IV80, XR16V564IV80, XR16V654IV80</i>	80-Lead LQFP	-40°C to +85°C
<i>XR16V554IV, XR16V564IV, XR16V654IV, XR16V554DIV, XR16V564DIV, XR16V654DIV</i>	64-Lead LQFP	-40°C to +85°C
<i>XR16V654IQ</i>	100-Lead QFP	-40°C to +85°C