

# The High-Performance UART Product Family



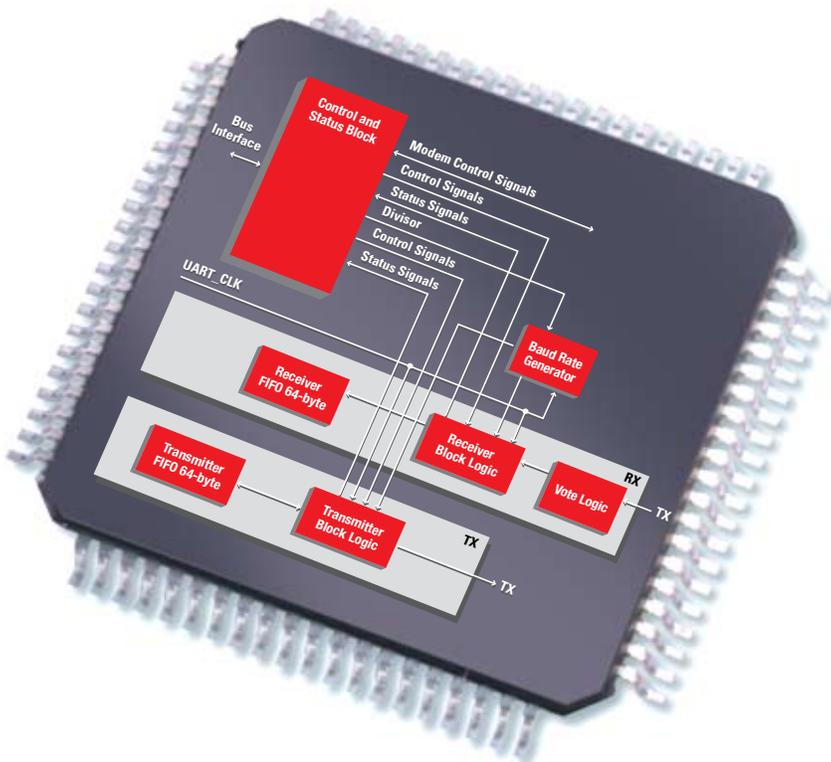
As an industry-leading supplier of universal asynchronous receiver/transmitters (UARTs), Texas Instruments provides products designed to improve system performance and meet the needs of next-generation applications. TI's portfolio features highly integrated parallel-to-serial and serial-to-parallel UARTs that are able to perform under even the toughest conditions. These conditions include meeting the increased demands placed on a system while reducing its space and power requirements. Space-saving configurations allow improved

system performance while conserving valuable board space. By supporting operating voltages down to 1.8 V, TI's UART product family is capable of taking care of even the most power-demanding applications.

TI's high-performance UARTs are ideal for many applications including telecommunications, gaming, point-of-sale (POS) terminals, mobile computing, industrial automation, base stations and mobile telephones. As one of the world's leading high-volume semiconductor

## Key features

- Single-, dual- and quad-channel devices available
- Hardware and software auto-flow control
- Programmable sleep mode and low-power mode
- Industrial temperature characterization available
- Choice of 5-V, 3.3-V, 2.5-V or 1.8-V supply



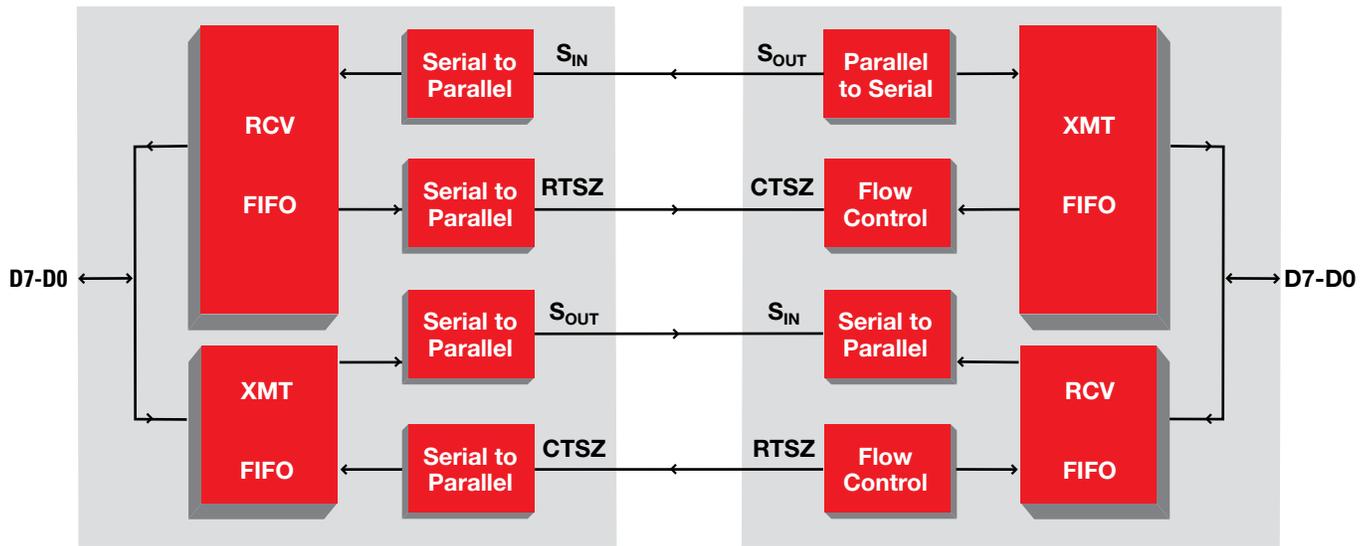
manufacturers, TI delivers the resources and industry expertise required to meet your needs. These resources include dedicated marketing and technical support teams around the globe. TI's vast UART portfolio provides cost-effective solutions for numerous customer applications. They include 16- and 64-byte FIFOs along with single-, dual- and quad-channel devices.

## TI's latest members of TI's UART family

TI is proud to have three parts join its UART portfolio: the TL16C2550, TL16C2552 and TL16C2752. These devices deliver many features requiring less power. These features will be essential in systems being designed today to meet the demands of tomorrow.

▲ The TL16C754B—TI's high-performance, four-channel UART device.

## Auto-Flow Control (Auto RTSZ and Auto CTSZ) Example



▲ TI UARTs feature auto-flow control, which significantly reduces overhead and increases system efficiency.

### **TL16C2550 and TL16C2552**

The TL16C2550 and TL16C2552 offer the benefit of combining two TL16C550D UARTs into a single low-pin-count package. Sharing only the data interface and clock, each UART in the TL16C2550 and TL16C2552 operates independently with its own self-contained FIFOs and register set. Performing serial-to-parallel or parallel-to-serial conversions, these dual-channel UARTs are ideal for industrial control, POS terminals, gaming systems and just about any portable application.

The flexibility of the TL16C2550 and TL16C2552 enables them to be used in numerous devices ranging from the latest 1.8-V power-sensitive applications to more traditional 5-V systems. Being industrial-rated, each UART chip is backed by TI's strictest quality control and manufacturing expertise.

### **TL16C2752**

The latest addition to the TI UART portfolio, the feature-rich TL16C2752 two-port UART, will offer designers greater flexibility in their design systems than before. With a built-in IrDA 1.0 encoder/decoder and external RS-485 transceiver support, the TL16C2752 provides flexibility for many application needs. Designed with 64-byte FIFOs and customizable trigger levels, the TL16C2752 can maximize a CPU's performance by reducing its need to service network functions. It also provides both hardware and software flow control through multiple threshold settings. Possible applications for the TL16C2752 include telecom D7-D0 routers, handheld terminals, mobile computing and factory automation systems.

### **PCMCIA and other family members**

TI's family of UARTs includes devices for portable computer Personal Computer Memory Card International Association (PCMCIA) boards (the TL16PC564B) and Industry Standard Architecture (ISA) bus-based PCs as well as UARTs that support Infrared Data Association (IrDA) signaling (the TL16PIR552). TI also offers a stand-alone IrDA encoder and decoder (the TIR1000).

### **For more information**

TI UARTs are helping today's designers develop better solutions for tomorrow's systems. If you would like more information on how UARTs can work in your system today, please contact one of our Product Information Centers (see back page). Or, for more details see

**[www.ti.com/uart](http://www.ti.com/uart)**

### UART Selection Guide

Device Name	Description	FIFOs	Package Options	Operating Voltage (V)	Characterized Temperature
TL16C2550	Dual UART with Programmable Auto-RTS and Auto-CTS	16-Byte	32 QFN, 44 PLCC 48 TQFP	1.8/2.5/3.3/5	-40°C to 85°C
TL16C2552	Dual UART with Programmable Auto-RTS and Auto-CTS	16-Byte	32 QFN, 44 PLCC	1.8/2.5/3.3/5	-40°C to 85°C
TL16C2752	Dual UART with Customizable Trigger Levels	64-Byte	44 PLCC	1.8/2.5/3.3/5	-40°C to 85°C
TL16C754C	Quad UART with 64-Byte FIFO	64-Byte	64 LQFP	1.8/2.5/3.3/5	-40°C to 85°C
TL16C450	Single UART	None	40 DIP, 44 PLCC	5	0°C to 70°C
TL16C451	Single UART with Parallel Port	None	68 PLCC	5	0°C to 70°C
L16C452	Dual UART with Parallel Port	None	68 PLCC	5	0°C to 70°C
TL16C550C	Single UART with Hardware Autoflow Control	16-Byte	40 DIP, 44 PLCC 48 LQFP, 48 TQFP	3.3/5	-40°C to 85°C
TL16C550D	Single UART with Hardware Autoflow Control	16-Byte	32 QFN 48 LQFP, 48 TQFP	2.5/3.3/5	-40°C to 85°C
L16C552A	Dual UART with Parallel Port	16-Byte	68 PLCC, 80 TQFP	5	-40°C to 85°C
TL16C554A	Quad UART with Hardware Autoflow Control	16-Byte	68 PLCC, 80 TQFP	5	-40°C to 85°C
TL16C750	Single UART with Hardware Autoflow Control, Low-Power Modes	16/64-Byte	44 PLCC, 64 LQFP	5	-40°C to 85°C
TL16C752B	Dual UART w/ auto-flow control and low-power modes	64-Byte	48 LQFP, 48 TQFP	3.3	-40°C to 85°C
TL16C754B	Dual UART with Hardware Autoflow Control, Low-Power Modes	64-Byte	68 PLCC, 80 LQFP	3.3/5	-40°C to 85°C
TL16PC564B/BLV	Single UART with PCMCIA interface	16/64-Byte	100 BGA, 100 LQFP	3.3/5	0°C to 70°C
TL16PIR552	Dual UART with Selectable IR and 1284 modes	16-Byte	80-pin QFP	5	0°C to 70°C

### IrDA Selection Guide

Device Name	Description	Data Rate Max (Kbps)	IrDA Standard
TIR1000	Standalone IrDA Encoder and Decoder	115	1.0

# TI Worldwide Technical Support

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## Internet

### TI Semiconductor Product Information Center Home Page

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## Product Information Centers

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