

TI announces single channel UART with 16-Byte FIFO with extended voltage range to 2.5V, and transfer rates up to 1.5MBPS

July 14 2004

Expanding its offering of parallel-to-serial and serial-to-parallel universal asynchronous receiver/transmitters (UARTs), Texas Instruments Incorporated (TI) announced a performance enhanced, single channel UART with 16-Byte FIFO that can support voltages down to 2.5V, and data transfer rates up to 1.5 Mbps. With the new TL16C550D, designers can increase system performance in applications such as telecommunication base stations, cell phones, POS systems, modems, PDAs and more. Designers of portable equipments that require lower voltages and space saving packages now have new options in the TL16C550D and the 32 PIN QFN package.

The device supports data transfer rates up to 1.5 Mbps at 5V, 1.25 Mbps at 3.5V and 1.0 Mbps at 2.5V, adding even more flexibility. The TL16C550D also has a Texas Instruments patented auto flow control feature that is comprised of auto-RTS (request to send) and auto-CTS (clear to send). With this feature enabled, RTS becomes active as soon as the receiver has room for more data and notifies the sending serial device which eliminates receiver overrun.

The devices include a programmable baud rate generator capable of dividing a reference clock to produce a 16X times reference clock for the internal transmitter logic which can also be used for the receiver logic. The TL16C550D and TL16C550DI accommodate up to 1.5 Mbps serial rate (24-MHz input clock) allowing for a bit time of 667 ns

(typical character time of 6.7 μ s).

Key Features:

Programmable Auto-RTS and Auto-CTS (Auto Flow)

Up to 24/20/16-MHz Clock Rates for up to 1.5/1.25/1-Mbps Operation

Programmable Baud Rate Generator Allows Division to Generate

Internal 16x Clock

5-V, 3.3-V, 2.5-V Operation

Versions for Commercial and Industrial (-40C to +85C) Temperature Ranges

Independent Receiver Clock Input

Fully Programmable Serial Interface Characteristics

Availability, Packaging and Pricing

The TL16C550D and TL16C550DI, which are drop in replaceable for TI's popular TL16C550C and TL16C550CI UART, are available now from TI and its authorized distributors in a 48-pin TQFP (PT) package. Limited samples of a smaller 5x5 mm 32-pin QFN (RHB) package are also available now, with production release scheduled for early 3Q04. In addition, the TL16C550DPT is a distinct option for all new designs requiring the TL16C550C's functionality. Suggested pricing in 1000 piece quantities is \$1.95.

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