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## Dual-channel, 66-MHz UART compliant with PCI 3.0 spec

[Ismini Scouras](#)
[eeProductCenter](#)

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## The chip vendor says...

**Exar Introduces Industry's First Dual-Channel 66MHz PCI 3.0 Compliant UART**

*Another Industry-First UART – Reaffirms Company's Continuing Focus on Technology Innovation*

Fremont, Calif.— Exar Corp., a leading provider of high-performance, mixed-signal silicon solutions for the worldwide communications infrastructure, today announced the industry's first dual-channel 66MHz PCI 3.0 compliant Universal Asynchronous Receiver Transmitter (UART) device. The XR17V252 offers a seamless upgrade path for product transitions from 33MHz to 66MHz. In addition, the product includes fractional baud rate generation, and offers PCI power management support. The device supports the rapid market transition to higher speed interconnects found in emerging opportunities from the computer and telecom server markets for applications such as remote access servers, storage, instrumentation, serial port expansion, embedded systems, factory automation and process control.

"With this device, Exar's marks its fourth industry-first UART offering in the last 11 months and again demonstrates its commitment to product and technology innovation," said Levent Ozcolak, division vice president and general manager, Interface Products Division. "Exar has one of the most extensive, and versatile portfolios of world-class serial communications solutions. Offering 8-bit and 32-bit options, a wide range of packages (some extremely small) and FIFO choices of 16, 32, 64 and 128, Exar continues to provide superior value to its customers for current and next generation opportunities."

**Four Industry Firsts**

Announced in December 2005, the Company introduced the industry's first 1.8 Volt single-channel UART (16L570) in 24 and 32-pin QFN packages; in June 2005 Exar added the industry's smallest UART (XR16L580), and in March 2005 introduced the industry's first multi-channel 66MHz PCI 3.0 compliant UART family with the eight-channel

## eeProductCenter's Ismini Scouras says...

The XR17V252 is single-chip, 2-channel PCI UART that converts parallel data into a serial data stream and a serial data stream into parallel data. Exar claims that it is the first 2-channel UART that has a 66-MHz PCI bus interface.

"We are still the market leader in the 66-MHz PCI product offering. None of our competitors have 66-MHz PCI UARTs. Most of them are still working on 33-MHz PCI versions," said Eric Nguyen, senior product marketing director at Exar.

With its fifth generation register set, the XR17V252 is designed to meet the high-bandwidth and power management requirements for multi-serial communication ports for system administration and management. Applications include remote access servers, storage network management, factory automation and control, instrumentation, multi-port RS-232/RS-422/RS-485 cards, and point-of-sale systems.

The 32-bit, 66-MHz PCI interface is compliant with PCI 3.0 and PCI power management revision 1.1 specifications. In the latest PCI specifications (PCI 3.0), PCI systems are moving towards 3.3-V and 66-MHz; the 5-V requirement has been removed from the PCI specifications, according to Nguyen.

To learn more about PCI 3.0, click here: [www.pcisig.com/specifications/conventional/pci\\_30/](http://www.pcisig.com/specifications/conventional/pci_30/)

There are several functions and features have been added to the device compared with Exar's previous-generation parts, as well as competitive devices. In addition to the 66MHz PCI bus interface, the XR17V252 has support for power management and a fractional Baud Rate Generator (BRG).

"The fractional Baud Rate Generator allows the user to use any available clock source on their board to generate standard baud rates. In the previous generation parts, only standard clock frequencies could generate standard baud



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## UART (XR17V258).

"Added to the already market-accepted eight channel 66MHz PCI 3.0 compliant device (XR17V258), the new dual-channel IC offers customers a smaller package option (100-pin TQFP) for more space constrained design environments," said Eric Nguyen, senior strategic marketing manager, Interface Products Division. "The XR17V25x series supports both the increasing demand for higher bandwidth, plus faster data transmission speeds. This, coupled with a direct interface to the PCI bus, can eliminate the PCI-Local bus bridge saving additional board space and reducing system cost."

### Product Details

Next in the XR17V25x series of single chip multi-channel 66MHz PCI 3.0 compliant ICs, the two-channel XR17V252 device features a 3.3V supply, fractional baud rate generator, PCI Bus Power Management 1.1 support, 16-bit programmable timer/counter, and 32-bit of data loading and unloading. Support for 66MHz PCI is ideal for system management and administration of applications where continuous redundancy and Quality of Service at higher bus clock speeds are critical.

Each UART channel includes a fully programmable TX and RX FIFO level trigger, FIFO level counter, an automatic hardware and software flow control, wireless infrared (IrDA) encoder/decoder, and an automatic RS-485 half-duplex direction control output for hardware and software design simplification. The XR17V252 consists of two independent UART channels with 64 bytes of Transmit (TX) and Receive (RX) FIFOs and a global interrupt source register for faster interrupt parsing of all the channels within the device. Its fifth generation configuration registers, and enhanced registers, meet the high bandwidth and power management requirements of communication systems. The XR17V252 also offers sleep mode with wake-up indicator feature that allows for lower power consumption. It is register-set, package and pin compatible with Exar's existing 33MHz XR17C152 (5V) and XR17D152 (Universal) PCI UART devices.

### Tools and Support

The XR17V252 is supported by Exar's market proven PCI software drivers for popular operating systems including Windows 2000, XP and Linux. With the availability of software drivers and Exar's application support line, PCI UART customers can accelerate their time to market by eliminating driver development, testing and diagnostic procedures.

rates," Nguyen said.

Unlike the legacy 16550 UARTs, the XR17V252 has a PCI bus interface, therefore eliminating a need for an external PCI bridge. It also takes advantage of the PCI interface to improve the data throughput via 32-bit PCI burst reads and burst writes, Nguyen said.

The XR17V252 has two independent UART channels. Each one includes a fully programmable transmit (Tx) and receive (Rx) FIFO level trigger, FIFO level counter, an automatic hardware and software flow control, wireless infrared (IrDA) encoder/decoder, and an automatic RS-485 half-duplex direction control output to simplify hardware and software design.

Each UART channel has a set of configuration and enhanced registers, 64-bytes of Tx and Rx FIFOs, and a fractional BRG. Both UART channels also include a global interrupt register. Additional features include up to 8-Mbits/s serial data rate; eight multi-purpose I/Os; and a 16-bit general purpose timer/counter.

The XR17V252 is available now in production. It is packaged in a 100-pin TQFP package, and priced at \$11.60 each in 1,000-piece quantities.

For a datasheet, click here: [www.exar.com/products/xr17v252\\_100\\_022206.pdf](http://www.exar.com/products/xr17v252_100_022206.pdf)

**Exar Corp.**, 1-510-668-7000, [www.exar.com](http://www.exar.com)

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