

Hawk News



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Hawk News is published quarterly by Blackhawk-DSP the leading designer of TALON Realtime Operating Systems and TAILWIND reference hardware for the rapid development of DSP-based applications for a wide variety of vertical markets. The first to develop a high-speed, credit card sized, XDS510-class, USB to JTAG Emulator for TI TMS320 DSP's and a next generation USB560 JTAG Emulator.

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TECH BITS:

- Using the Remote Ethernet Feature of the USB 2.0 is a way to allow debugging under Windows® NT.
- The original USB 1.0 released in 1996 had a maximum data rate of 1.5 Mbit/sec.
- The USB 1.1 standard increased the data rate to 12 Mbit/sec.
- USB 2.0 compliant devices can achieve a maximum data rate of 480 Mbit/sec.
- TI introduced RTDX™ technology in 1998.
- USB560 performance matches that of TI's XDS560 PCI card in program downloads and HS-RTDX™.

Blackhawk Delivers USB560 JTAG Emulator

The wait is over. Blackhawk began shipping the USB560 JTAG Emulator last month. This milestone represents the availability of the only 560-class USB Jtag Emulator on the market.

Speed, portability and support for the next generation DSP processors are the key features that set the USB560 apart from other emulators.

For the increased capabilities that Texas Instruments High-speed RTDX™ will provide, you can expect to see data rates in excess of 2 Mbytes/second. In contrast, standard RTDX™ data rates are about 10-20 kBytes/second.

So why is speed so important?

TI introduced RTDX™ technol-

ogy in 1998 enabling applications such as telephony, fax and low-end videoconferencing to be developed. Now, with the increased demand for streaming video, broadband modems and web-enabled PDA's, DSP's are faster, applications are much larger and more complex. All of these factors put a burden on the limited bandwidth capabilities of 510-class devices. So TI introduced the 560-class to provide the needed bandwidth.

High-speed RTDX™ does provide a much greater degree of debugging capabilities through Advanced Event Triggering with Event Sequencing. This enables developers to define multiple



Blackhawk USB560 JTAG Emulator with USB and 560 JTAG Cable is sold worldwide through authorized resellers.

breakpoints using complex interdependent parameters. This allows real-time software problems that are intermittent to be analyzed and fixed.

The Blackhawk USB560 Emulator has a Manufacturer's List Price of \$3,995 which includes cables and an AC Adapter.

The USB560 Performance is Universal

While the greatest benefits of the USB560 are realized when used with DSP's supporting this capability, other processor architectures will see overall improvement in download speed. Since standard RTDX™ is supported in the USB560, speeds as high as 130 kBytes/sec can be seen even though High-speed RTDX™ isn't available on

the target DSP. This means that code downloads are 7 to 10 times faster using the USB560 as compared to the XDS510-class USB 2.0 devices from Blackhawk or a competitor.

As of the date of this newsletter, only the C621x and C671x support HS-RTDX™ in silicon.



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ESC San Francisco
April 22-26, 2003

Trade Show Schedule

Look for Blackhawk to be exhibiting at these industry trade shows for 2003.

The **International Signal Processing Conference and Global DSP Expo** to be held March 31st to April 3rd in Dallas, Texas. The focus of this conference and exposition is on emerging technologies in test and verification tools and a whole variety of services.

Embedded Systems Conference from April 22nd to April 26th in San Francisco. Hosted

by Embedded Magazine, this conference has a broad range of industry representatives. From application development to verification tools, ESC offers a "one stop – shop" for all that is DSP.

Texas Instruments annual **DSP Conference** is usually held sometime in August. Although details of this years show still remain vague, it's rumored to be held in Houston, Texas.

As is the case with most progressive companies, Blackhawk

wants to get the word out about their products. We are always looking to explore new ground and this year, we are evaluating the **Communications Design Conference** in San Jose from September 29th to October 2nd.



Foolish Quotes Department

Western Union internal memo written in 1876

"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."

Target Independent Driver Architecture Defined

What is the target independent driver architecture? It is a TI Code Composer Studio (CCS) emulation driver format first introduced in CCS v2.0, which has been retrofitted to device drivers in CCS v1.2 and some Code Composer v4.1x devices. Third party emulation drivers that follow this **source-less emulation porting kit (SEPK)** model ensure high compatibility

with TI emulation drivers because the generated DLL exists at the lowest level of the emulation I/O path. This means that the DVR file used in CCS setup is the one provided by TI. This DVR file then communicates to the 3rd party DLL, which then uses its own interface to the emulator (i.e. USB). In addition to compatibility, the end user

benefits from immediate support for new, modified, and enhanced driver releases as soon as TI makes them available. Following the SEPK architecture benefited our customers recently when TI released Code Composer Studio™ v2.2 because our emulation products did not require a new driver or patch.

Blackhawk USB 1.0 Year Three

Blackhawk revolutionized the JTAG Emulator market when it introduced the USB 1.0 Emulator back in 2000.



Version 1.0 of the Blackhawk USB-JTAG Emulator introduced in July, 2000.

Up till that time, emulators were ISA based PC cards that required a full-sized PC motherboard and a cable with a large black pod.

There are many advantages to using USB devices versus parallel port

emulators. Aside from the obvious portability, USB's plug n' play characteristics make it easy to install, in any type of computer—from desktop to notebook.

But the real advantages are not just in the hardware design aspects or the portability features as you will find out in the article above regarding Blackhawk's conformance to TI's SEPK, or Source less Emulation Porting Kit.

The original USB-JTAG emulator

circuit board measured 4 inches by 2 ½ inches. "We had to increase the size of the circuit board on the USB 1.0 emulator", said Andrew Ferrari, Director DSP Operations, "because we could not find an enclosure small enough to accommodate the circuit board".

The Blackhawk USB 2.0 emulator is exactly half the size of the USB 1.0 emulator. With an internal circuit board that measures only 1.6" x 3.2" it's the smallest USB Emulator on the market.