

Product Bulletin**TDS560USB Real-Time Emulator**

The TDS560USB Real-Time Emulator is a new generation of emulator for real-time debugging. It supports high speed real-time data exchange (HS-RTDX), and it can help you decrease your project time. The emulator itself is a USB device. It is fully plug and play compatible and supports high speed code download. The TDS560USB Real-Time Emulator is designed to operate with TI Code Composer Studio IDE debug tool and is compatible with Windows 98SE / 2000 / XP.

Main Features

- ✓ Real-time data exchange (RTDX) bandwidth over 2Mb/s and real-time event sequence server without stopping the application
- ✓ Increases code download speed up to 8x faster than XDS510 USB compatible, simple connection, fully Plug-and-Play, no jumpers, no switch settings
- ✓ Hot pluggable
- ✓ Supports multiprocessor debugging of same or different type Programmable TCK: 500KHz to 35MHz Compatible with XDS510 Overall cable/pod length of 6ft (1.5m)

- ✓ Hardware detection of power losses and cable disconnections Wide dynamic operating voltage: 1.0 to 5.0 volts
- ✓ All pod signals are ESD protected
- ✓ Supports Texas Instruments (TI) DSP with a JTAG (IEEE 1149.1) interface: C2000, F2400, C27X, F28X, C54X, C55X, C6000, C64X, TMS470 (ARM) and OMAP platforms
- ✓ Supports Texas Instruments Code Composer Studio

What's Included

- ✓ TDS560USB Real-Time Emulator and Pod
- ✓ USB interface cable
- ✓ Five Volt DC power supply
- ✓ AC power cord

Key Benefits

- High speed real-time data exchange (HS-RTDX) bandwidth over 2Mb/s, real-time event sequence server without stopping the application
- Increases code download speed up to 8x faster than XDS510
- USB compatible, simple connection, fully Plug-and-Play, no jumpers, no switch settings

- ✓ The TDS560USB driver disk

- ✓ TDS560SB Real-Time Emulator Installation Guide Reference Guide

Installation Requirements

- ✓ Code Composer Studio IDE 2.0 or greater
- ✓ A free USB port (USB2.0 is recommended)
- ✓ 500MHz or higher Pentium-compatible CPU (900MHz or higher Pentium III CPU or equivalent is recommended)
- ✓ Local CD-ROM drive

Supports Operating Systems

- ✓ Win98SE(SP1)/Win2000(SP4)/Win XP(SP1)

For more information, please visit <http://www.wintechdigital.com>



What is the difference between ordinary and real-time debug?

Debugging is usually executed by a debugger, which is normally a software running on PC. Debugger's major job is to get information from target CPU and control the program running on the target CPU. But ordinary debugger needs to stop the program running on the target CPU in order to execute the above job.

Real-time system needs real-time debugger. Real-time debugger must get the information from target CPU and control the program running on target CPU WITHOUT stopping the program running on the target CPU.

To realize the real-time debugging, the debugger must build a real-time communication channel between the debugger and the target CPU. The real-time channel includes two levels: hardware channel and software channel. The real-time hardware channel is the real-time emulator and

the real-time software channel is the real-time debugger.

What is real-time emulator?

To realize the hardware real-time communication channel between the debugger and the target CPU, we must define the hardware interface on both the PC and the target DSP. TI's DSP uses JTAG (EJTAG) as hardware debug interface. PC hardware interface is usually PCI, USB, EPP, PCMCIA, or Ethernet. The examples of real-time emulators are TI's XDS560 and Wintech's TDS560. TI's XDS510 and Wintech's TDS510 are semi-real-time emulator.

What is the difference between real-time debugger and high speed RTDX?

To realize the software real-time communication channel between the debugger and the target CPU, TI defines a RTDX technology on CCS (Code Composer Studio). That RTDX means "Real-Time Data Exchange".

To use this new function, the user should enable the CCS debugger's RTDX module (called RTDX client), then on the target DSP, the user should link RTDX.obj (called RTDX server) with his own DSP program and call RTDX communication function on his application software.

When using RTDX, the target DSP does not need to be stopped, hence the real-time communication channel between the debugger and the DSP is established.

When using TDS510 or XDS510, the RTDX speed is only 5-10KB/s. For most DSP applications, this speed is not enough. The RTDX bottleneck is the emulator and DSP's JTAG interface. To improve the speed of RTDX, the solution is to use TDS560 or XDS560 and select the DSP chip with EJTAG interface. When using 560 and 6211 DSP chip, the RTDX speed can reach 1.5MB/s, which is called High Speed RTDX.

About Wintech

Wintech Digital Systems Technology Corp. is an embedded video communication solution provider and DSP development tool provider. It has developed DSP development platforms, target boards, emulators and DSP application software. Wintech has also developed DM64x based video communication solutions. Wintech is a member of TI's (Texas Instruments) worldwide DSP third party program and a third party partner of Intel and Microsoft.

Wintech has strong R&D capability and strong marketing resources. It has 54 employees and 90% of them are engineers. It also has a management team that is experienced at managing development, production and marketing. Wintech owns multiple patents and has developed a series of well-adopted DSP solutions.

Wintech has also published numerous DSP books. Relying on its superior technology, Wintech has served over 10,000 customers in such fields as communications, imaging, auto control, home electric equipment and DMC. Many of these customers have become Wintech's long-term partners. Wintech has offices and distributors in U.S., China, Asia and Europe. Wintech's current distributors can be found in Korea, Japan, Israel, India, Germany, England and Taiwan.



U.S. Office

Address:

24 Corporate Plaza, Ste 100, Newport Beach, CA 92660.

Tel: +949.760.0401

Fax: +949.203.2235

Email: info@wintechdigital.com

Website: www.wintechdigital.com

China Office

Address:

South 2/F, Caihong Building, No.11, Shangdi Xinxu Road, Haidian District, 100085, Beijing P.R.China.

Tel: +86.10.8278.2828

Fax: +86.10.8278.0028

Email: Market@DSPChina.com

Website: www.wintechdigital.com.cn

Wintech

Wintech Digital Systems Technology Corp.