

SB-USB2 : High Performance USB JTAG/OnCE Emulator



Key Features:

- Benchmark Timers
- USB port powered
- OnCE support
- JTAG TAP Debug support
- JTAG Boundary Scan support
- Logic Levels: 3.3V, 2.5V, 1.8V
- TCK: 32kHz-10MHz
- Device Power Detection
- Supplies max of 300mA

Package Contents:

- Emulator
- USB cable
- Drivers for MS Windows

OnCE Connector Pinouts:

Primary:

DSI	1	2	MUX1
DSO	3	4	GND
DSCK	5	6	GND
-DR	7	key	
-RST	9	10	nc
VCC	11	12	nc
nc	13	14	MUX2

Secondary:

DSI	1	2	MUX1
DSO	3	4	GND
DSCK	5	6	GND
-DR	7	key	
-RST	9	10	nc
nc	11	12	nc
nc	13	14	nc

JTAG Connector Pinouts:

Primary:

TDI	1	2	GND
TDO	3	4	GND
TCK	5	6	GND
nc	7	key	
-RST	9	10	TMS0
VCC	11	12	TMS1
-DE	13	14	-TRST

Secondary:

TDI	1	2	GND
TDO	3	4	GND
TCK	5	6	GND
nc	7	key	
-RST	9	10	TMS0
nc	11	12	nc
nc	13	14	nc

Overview:

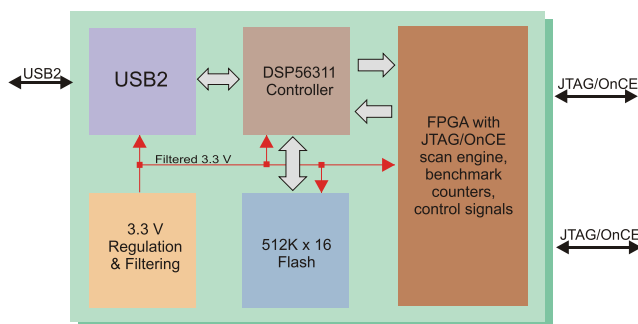
The SB-USB2 emulator enables efficient and productive embedded software debugging for the DSP560xx, DSP561xx, DSP563xx, and the DSP568xx. Both compact and portable, it utilizes the JTAG and/or OnCE (On-Chip Emulation) protocols. This versatile probe supports several connector configurations: 2 JTAG connections; 2 OnCE connections; or an individual JTAG and OnCE connection. In addition, the SB-USB2 supplies benchmark timers.

When used with Domain Technologies' BoxView debugger, the SB-USB2 provides access to the JTAG device's boundary scan functionality (BSDL file required). Boundary scan operations enable non-intrusive monitoring of the target device pins, even while the target device is executing its own application code. The SB-USB2 emulator can program external flash memory devices either boundary scan, or direct DSP access.

With the addition of Domain Technologies BoxServer software, the SB-USB2 emulator can be used for multi-core and/or multi-device development when the JTAG devices are properly connected within the same JTAG scan chain. This development capability allows simultaneous start/stop/single-step for multiple devices; BoxServer provides access via TCP/IP connection.

Product Description:

The SB-USB2 probe is powered by the USB connection, making it ideal for use by notebook computers or lab environments. In addition, it can detect whether or not the device has power, and can also supply up to 200mA of power to the target device. The emulator provides benchmark timers: for the OnCE connection, the negative pulse coming over DSO stops the timer; for the JTAG connection, the -DE signal stops the timer. The JTAG interface can be configured to operate with logic levels of 3.3V, 2.5V, or 1.8V. The JTAG clock can be configured between 32kHz and 10MHz. A flexible ribbon cable provides the JTAG or OnCE interfaces with several supported configurations: 2 JTAG (primary and secondary connector); 2 OnCE (primary and secondary connector); or a single JTAG and OnCE connection.

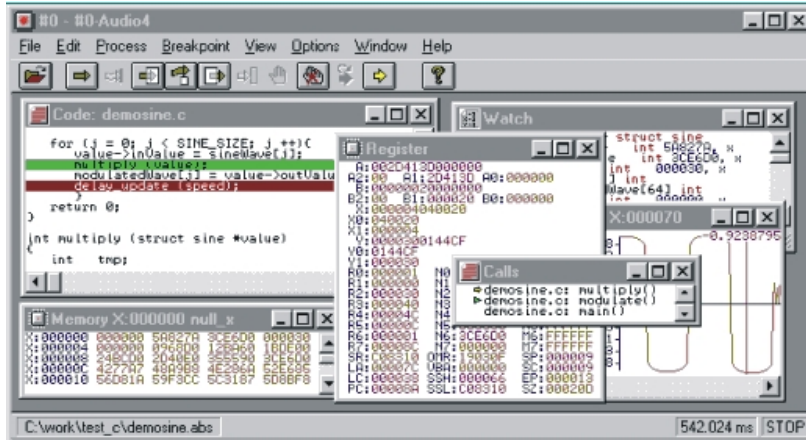
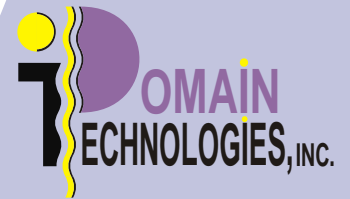


Upload and Download Rate

The following comparison illustrates the execution of a memory upload and download in kwords/second, for Domain Technologies' JTAG emulators using BoxView debugger with DSP56311 target running at 150 MHz. TCK rate set to 10 MHz, except PP-JTAG and USB-EMU, which do not support variable TCK frequency. Windows XP, 3 GHz Pentium.

	LINK-56K	PP-JTAG	SB-56K	USB-EMU	SB-USB	SB-USB2
Save to file	1.0	2.0	3.7	8.6	21.2	59.9
Load from file	0.6	1.3	3.1	5.8	12.3	40.3

Solving Complex Debugging Problems



BoxView Features:

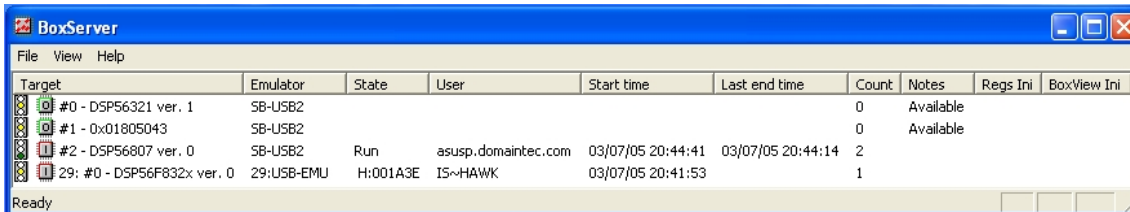
- Fast Data Access
- Graphical Plots
- Boundary Scan Operations

BoxView™: Control and Interact with Your DSPs

All Domain Technologies' emulators are compatible with BoxView™, our high level language debugger. BoxView™ allows programmers to test and debug applications with fast data access and extensive display capabilities. Information is controlled and organized by interacting with the target DSP through monitoring software or on-chip hardware circuitry. BoxView's visual user interface includes different numeric formats and graphical plots. Powerful boundary scan operations (requires BSDL file access) are supported which enables non-intrusive monitoring of the target device pins, even while the target device is executing its own application code.

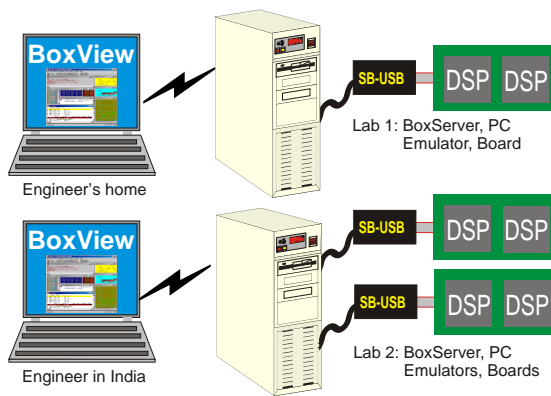
BoxServer Features:

- Scalable and Flexible
 - Single User, Single DSP
 - Multiple Users and DSPs
- Conveniently Accessed
 - Direct Connect
 - Remote via TCP/IP



BoxServer™: Multi-DSP and Multi-User Debug Access

More complex configurations such as debugging with multiple users, multiple DSP targets, or remote access are all supported seamlessly with the addition of our BoxServer™ software. This multi-core, multi-device development capability allows the user to start/stop/single-step selected devices simultaneously. Access to multiple devices is provided from single or multiple workstations via TCP/IP connection.



Solution for Multiple Remote Users, Multiple Boards

BoxView with BoxServer solve the problem of control when two engineers need access to multiple DSPs. Each engineer, individually uses BoxView for debugging. Remote access for each debug session, via TCP/IP, is managed by BoxServer. In addition, BoxServer controls multiple emulators.

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