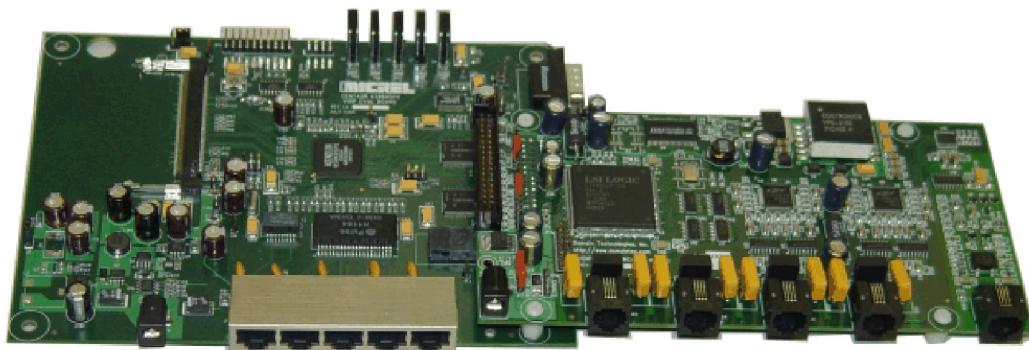


## DTZV4S1D- Z.Voice VoIP Gateway Reference Design Featuring Micrel VoIP Eval board and DTVOIP4S1D

### Features:

- 4 RJ-11 Voice Ports
- Integrated managed 5-port Ethernet Switch
- LSI403LP ZSP Voice Processor with Z.Voice
- Complete Software Solution
- Customization Support



### Overview:

Voice-Over-IP (VoIP) is the value application for the emerging broadband infrastructure fueled by DSL, cable, and Wi-Fi deployment. VoIP's value proposition of lowered long distance voice communication, integration with web applications for customer service and low cost enablement of voice channels in emerging countries is leading to explosive growth in VoIP subscribers. This type of phenomenal growth requires take to market reference designs, like the DTZV4S1D, that are cost effective and time efficient for ODM's to quickly deploy in the marketplace.

### Product Description:

The DTZV4S1D is a 2-board solution featuring the Micrel's KS8695PX VoIP Eval board and the DTVOIP4S1D daughterboard. LSI's Z.Voice Gateway Reference Design was developed through collaboration between LSI Logic, Micrel, and Encore Software. Micrel's KS8695PX, with its integrated 5-port Ethernet switch SoC, runs the SIP signaling and router software from Encore.

The DTVOIP4S1D daughterboard featuring the LSI 403LP ZSP voice processor runs the Z.Voice codec and telephony software bundle from LSI Logic to support 4 ports of voice. One DAA interface is also provided on the daughterboard.

The Z.Voice Package consists of:

- G.711, G.729AB, G.723.1, G.726 Codecs
- G.168 Line Echo Canceller
- DTMF Detection/Generation
- Call Progress Tone Generation
- Call Progress Tone Detection (FXO only)
- Caller ID Generation
- Caller ID Detection (FXO only)
- Voice Activity Detection (VAD)
- Comfort Noise Generation (CNG)
- Packet Loss Concealment (PLC)
- T.38 Fax Relay

Host side software consists of:

- Example Linux ZSP driver with Z.Voice software license
- RTP/JB Source available for licensing
- SIP available for licensing from Encore Software

# Development and Debug Tools

## ZSP-USB-JTAG, SB-USB2 Probe Features:

- Powered by USB port
- JTAG interface
- Integrates with:
  - ZSP IDE
  - ZSP Console GDB
  - BoxView



## ZSP-USB-JTAG: JTAG Probe for ZSP Debugging

Both compact and portable, the ZSP-USB-JTAG emulator is designed to support software development on the LSI Logic ZSP cores via a host PC USB port. In addition, the emulator supports multi-core and multi-user debugging on a network over a TCP/IP connection, as well as JTAG boundary scan operations such as testing and flash memory programming, with available software.

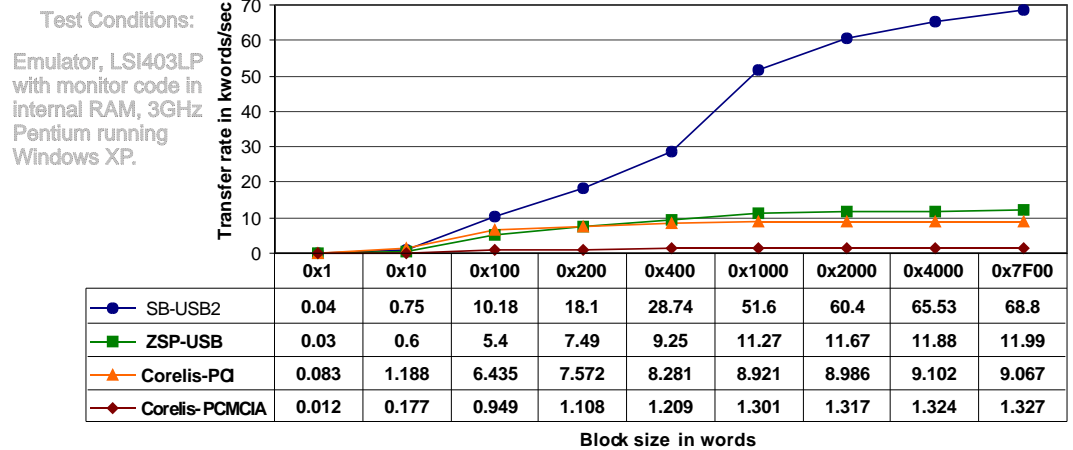
The ZSP-USB-JTAG emulator is powered from the USB connection, which eliminates the need for a separate power supply and also making it ideal for use with notebook computers.



## SB-USB2: Fast JTAG Probe ZSP Debugging

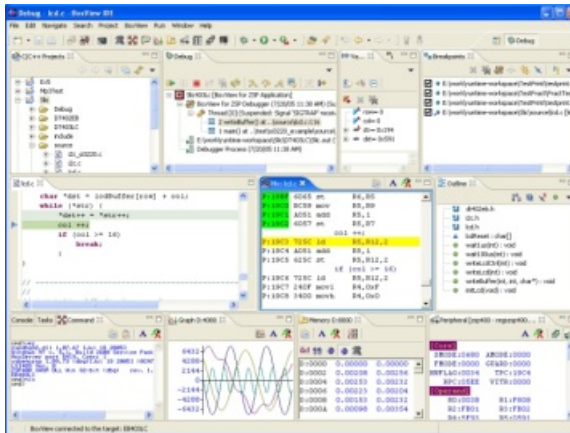
The SB-USB2 emulator enables efficient and productive embedded software debugging. This compact and portable probe utilizes the JTAG interfaces for debug and in-circuit testing supplied with the LSI Logic ZSP cores. Unlimited software

breakpoints within all ranges of program memory implemented in RAM are supported. Upload and download rates are up to 5 times faster than comparable products:



## BoxView IDE Features:

- Project Management:
  - Project Dependencies
  - File Compile Options
  - Timesaving Edit Features
- Project Debugger:
  - ASM/C Mix Source Views
  - Fast Data Access
  - Graphical Plots
- Eval Code Performance:
  - Pipeline Stages
  - Cycle Details
  - Grouping Rules



## BoxView IDE: Control and Interact with Your ZSPs

The BoxView Integrated Development Environment allows programmers to create, test, and debug applications with fast data access and extensive display capabilities. Information is controlled and organized by interacting with the target ZSP through monitoring software or on-chip hardware circuitry. BoxView's fast performance and extensive display capabilities include standard debugger actions like

start/step/set breakpoint/halt as well as many custom features. BoxView's visual user interface includes different numeric formats and graphical plots. Powerful editing capabilities enhance programmer control during debug cycles.