VisualDSP® Emulation Tools Installation Guide for Windows 95/98/NT

Notice

Analog Devices Inc. reserves the right to make changes to or to discontinue any product or service identified in this publication without notice.

Analog Devices assumes no liability for Analog Devices applications assistance, customer product design, customer software performance, or infringement of patents or services described herein. In addition, Analog Devices shall not be held liable for special, collateral, incidental or consequential damages in connection with or arising out of the furnishing, performance, or use of this product.

Analog Devices products are not intended for use in life-support applications, devices, or systems. Use of an Analog Devices product in such applications without the written consent of an Analog Devices officer is prohibited.

Users are restricted from copying, modifying, distributing, reverse engineering, and reverse assembling or reverse compiling the VisualDSP® Emulation Tools operational software (one copy may be made for back-up purposes only).

No part of this document may be reproduced in any form without permission.

Trademarks are property of their respective holders.

Limited Warranty

The software media is warranted against defects in materials and workmanship for a period of one year from the date of purchase from Analog Devices or from an authorized dealer.

Contents

List of Figures

1. Introduction

Thank you for purchasing the VisualDSP® Emulation Tools. This Emulation Tool suite supports all of Analog Devices JTAG and ADSP-218x DSPs. This software contains support for all White Mountain DSP Universal Emulators. The software provides a controlled environment for observing, debugging, and testing activities in a target system by connecting directly to the target processor through the emulator interface.

Features of this software are as follows:

▲ Supports Windows®95, Windows®98, and Windows NT™

▲ Supports all Analog Devices JTAG and ADSP-218x based DSPs

▲ Plug-n-Play PCI and USB

▲ Synchronous multiprocessor support (JTAG DSPs)

2. Requirements

The PC requirements for this emulation software are as follows:

▲ Pentium 166 MHz or greater

▲ Windows 95, Windows 98, or Windows NT 4.0 SP 3 or greater

▲ Minimum of 32 megabytes of PC-AT memory

▲ VGA (or better) graphics capability

▲ VisualDSP 4.1 or greater (SHARC®)

▲ VisualDSP 7.0 or greater (21XX)

▲ VisualDSP 1.0 or greater (TigerSHARC®)

3. Installation and Configuration

This section provides all of the information required for installing this software into your PC. Prior to installing this software you must install your emulator hardware into your PC. Please refer to the *Emulator Hardware User's Guide.*

3.1 Installation

Note: To install this software into an NT workstation you must have administrator privileges on the target machine and must be logged in as Administrator.

1. Insert your VisualDSP Emulation Tools CD into the CD drive of the PC you wish to install this software.

2. Run the setup program on the CD and answer all the questions correctly for a successful installation.

3. Please reboot the machine if prompted to.

3.2 Base I/O Address (JTAG Emulator)

3.2.1   Windows 95/98 Users

Please refer to your White Mountain DSP emulator hardware user's guide.

3.2.2   Windows NT Users

1. Click on the "Start" button.

2. Select "Settings" then "Control Panel."

3. Double-click on the "DSP Emulators" icon.

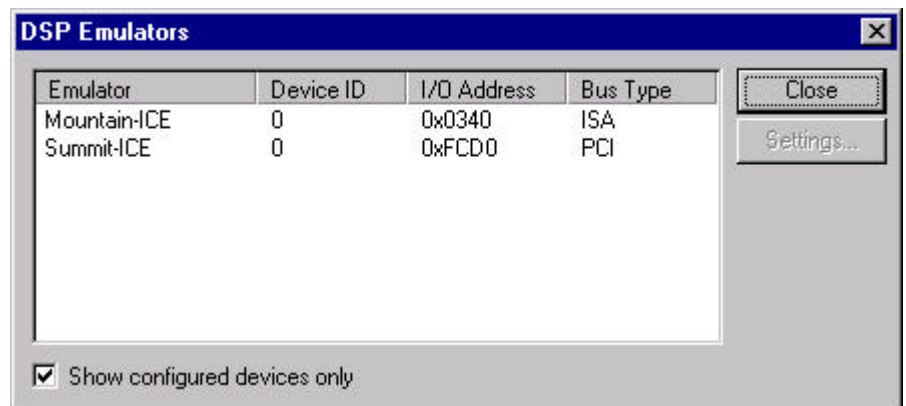| Emulator	Device ID	I/O Address	Bus Type
Mountain-ICE	0	0x0340	ISA
Summit-ICE	0	0xFCD0	PCI

☑ Show configured devices only

Figure 1. The DSP Emulators Control Panel Applet

This will display the DSP Emulators control panel applet. Here, all the available emulators listed along with the I/O address to which it has been assigned. This I/O address is the one that should be used when setting up the JTAG ICE Configurator utility.
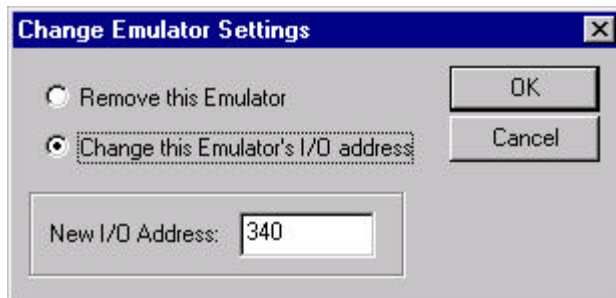
Figure 2. The Settings Button

The "Settings" button will only work with the ISA-based emulators. Here you can change the emulator's I/O address or remove the emulator. Any changes made here will require a reboot.

3.3 Software Operation (JTAG Emulator)

Prior to starting the debugger with an emulator, you must run the JTAG ICE Configurator utility. This utility allows the users to identify their JTAG interface configuration, i.e., what the JTAG chain looks like from TDI to TDO at your target board JTAG connector. The information required to run the JTAG ICE Configurator and operate the debugger software can be found in the *VisualDSP User's Guide* included with the software distribution.
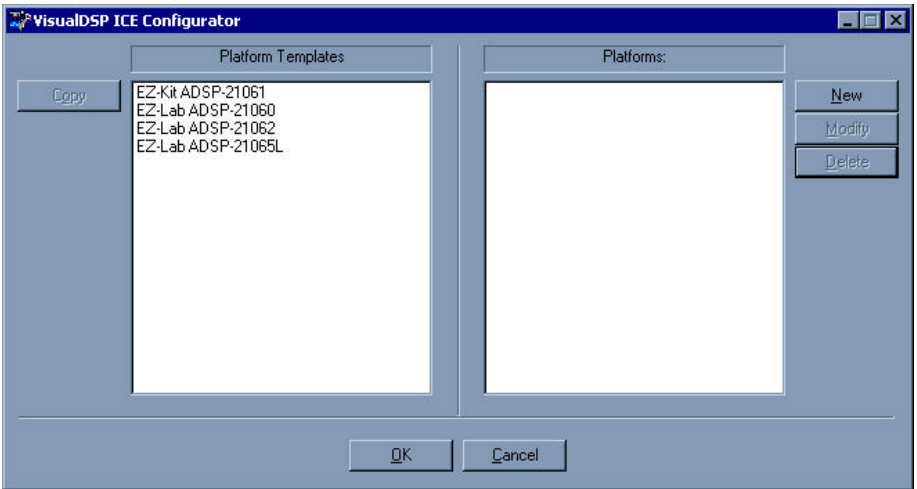
Figure 3. JTAG ICE Configurator Dialog

At this point you will define the layout of your target board. You can either select a "Platform Template" or create a new "Platform" shown in figure 3. By either double-clicking on a template or highlighting one and then clicking on "copy", it will be placed under the platforms window. Select "New" to create a platform.
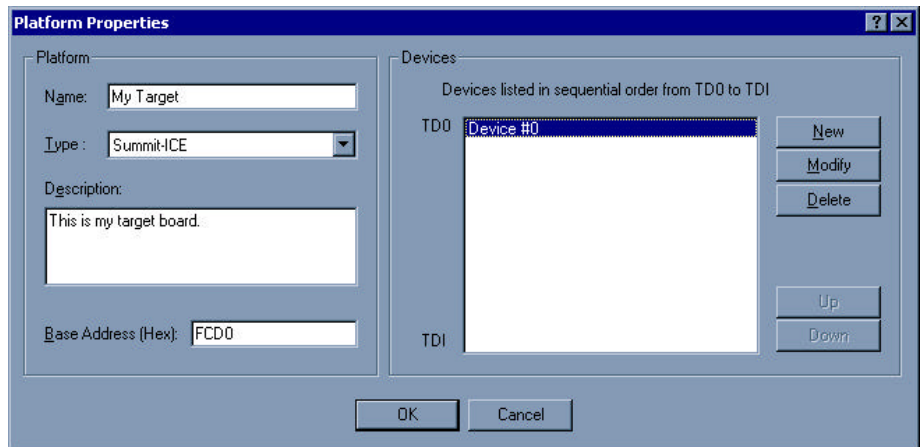

Figure 4. New Platform Dialog

Once you have selected the name of your platform, emulator, description of the platform, and the I/O address, you will need to define how many processors that reside on your target board as shown in figure 4.

Select "Modify" to make changes to the current device or select "New" to add a device.

Figure 5. Device Properties Dialog

Now select a name for the device, the type of DSP it is, and a description of the device if desired.

Once finished, select OK until you are back to the main screen as shown in figure 3. You should now see your defined platform in the right hand window titled "Platforms" as shown in figure 6.
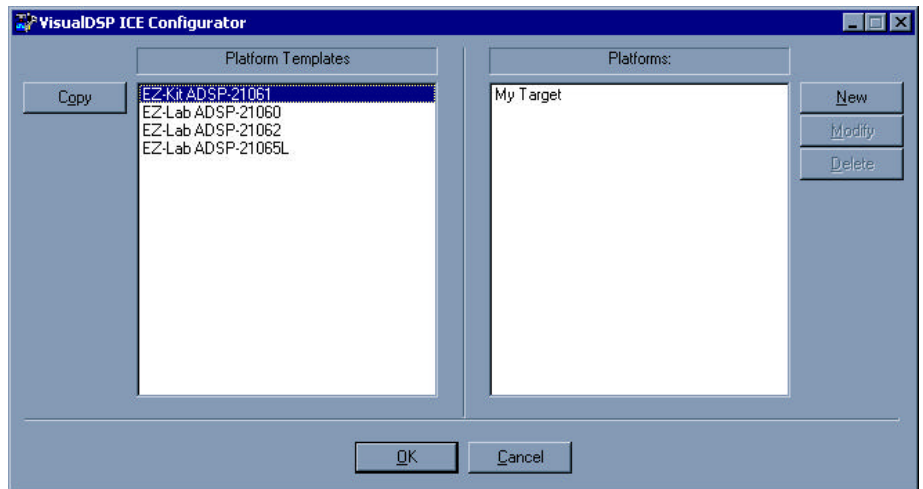
Figure 6. JTAG ICE Configurator Dialog

3.4 Software Operation (ADSP-218x-DSP Serial Port Emulator)

Once you have selected the 218x session that you desire, on the VisualDSP menu select "Settings" | "EZ-ICE" | "Configure Serial Port."
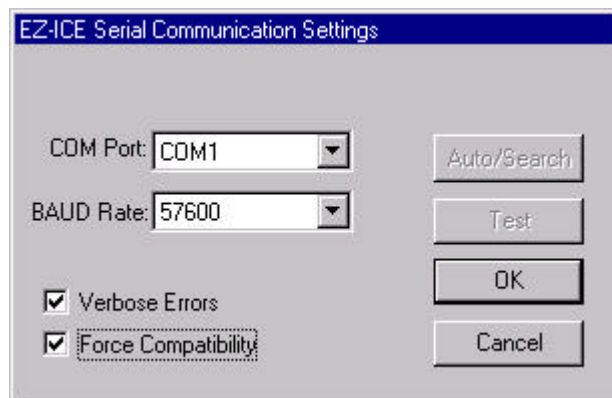

Figure 7. Serial Communication Settings Dialog

Figure 7 displays the default settings of the ADSP-218x EZ-ICE serial emulator. Please select a COM Port and the BAUD Rate desired.

The "Verbose Errors" check box allows you to turn off certain non-critical warnings. Warnings are generated when the user single steps at the end of a do-until loop, an idle or idle(n) as the last instruction of a do-until loop, and various other non-fatal warnings.

The "Force Compatibility" checkbox allows the customer to connect to an ice that is using older firmware (v1.0i.) By default, this is checked, and must be unchecked if the firmware is upgraded to 1.0j. (Supplied with the emulator.)

4. Support

4.1 Technical Support

We fully support all of our products. For technical support of the
VisualDSP Emulation Tools, call (603) 883-2430 Monday - Friday
during normal business hours or via e-mail at *support@wmdsp.com*.
For direct support of the Analog Devices family of DSPs, call the
Analog Devices' DSP Applications Engineering group at
(781) 461-3672.

4.2 Quality Assurance

White Mountain DSP is committed to providing quality products and
services. In efforts to continually provide this quality, please contact
our Quality Assurance Department directly if you have any concerns at
(603) 883-2430 Monday-Friday during normal business hours or via e-
mail at *quality@wmdsp.com*. Our Quality Assurance Manager will
listen to your concerns and provide a timely and effective solution.

5. References

This section discusses other documentation resources you will need to develop your application.

- For information about your development platform, refer to your operating system manuals and hardware system manuals.

- For information about digital signal processing theory and application, you may which to consult:

  Higgins. *Digital Signal Processing In VLSI*. Prentice-Hall, 1990. Oppenheim and Schafer. *Digital Signal Processing*. Prentice-Hall, 1975.

- For information on the emulator software, refer to the Software Users Guide.

- For information on designing the interface between an Analog Devices JTAG DSP and the emulation header on your custom DSP target board, refer to Analog Devices JTAG Emulation Technical Reference EE-68.