

1 INTRODUCTION

In This Chapter

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About VisualDSP++

VisualDSP++ is a Windows-based software development environment for Analog Devices' Digital Signal Processors (DSPs).

About This Manual

Purpose

The *VisualDSP++ 2.0 User's Guide for 21xx DSPs* describes the features, components, and functions of VisualDSP++. Use this guide as a reference for developing programs for ADSP-218x and ADSP-219x processors. This guide does not include procedures for creating sessions and for building and debugging projects.

For step-by-step instructions for developing a typical programming project, refer to:

- VisualDSP++ Online Help
- *VisualDSP++ 2.0 Getting Started Guide for 21xx DSPs*

Intended Audience

This manual is primarily intended for DSP programmers who are familiar with Analog Devices' DSPs. Before you begin actual programming, you should have a working knowledge of your processor's architecture and instruction set.

If you are unfamiliar with Analog Devices' DSPs, you should supplement this guide with other manuals (such as a DSP Hardware Reference) that describe Analog Devices' DSP architecture and DSP instruction set. Before using this manual, review [“Conventions” on page 1-4](#).

Contents Description

Chapter contents are summarized as follows:

- Chapter 2 — About VisualDSP++
Describes VisualDSP++ features, new Release 2.0 features, the program development process, projects, and Tcl scripting
- Chapter 3 — Environment
Describes the VisualDSP++ user interface, windows, environment customization, window operations, and the debugging windows
- Chapter 4 — Debugging
Describes debug sessions, code analysis tools, program execution operations, simulation tools, and plots
- Appendix A — Reference Information
Provides glossaries, information about C++ Run-Time Libraries and file types, keyboard shortcuts, command-line parameters, toolbar buttons, and text operations
- Appendix B — ADSP-2191 Peripherals Used with the Simulator
Provides reference information about using ADSP-2191 peripherals to simulate the following functionality: General Purpose IO (GPIO), Host Port Interface (HPI), Serial Peripheral Interface (SPI), Serial Port (SPT), UART Port (UART), Timer (TMR), and Memory DMA (MEMDMA)
- Appendix C — Tcl Scripting
Provides an overview of the Tool Command Language (Tcl), a reference for Tcl commands, and examples of Tcl scripting used to test DSP systems

Conventions

The following conventions apply to all chapters. Additional conventions, which apply only to specific chapters, appear throughout this document.

Table 1-1. Notation Conventions

Example	Description
From the Debug menu, choose Restart and then press F5 to run the program. In the End address box, type 0x4e4, but do not click Add.	The following appear in bold: • Names of menus and menu commands • Toolbar buttons • Keyboard keys and key combinations • Tabs and tab pages • Dialog boxes • Dialog box control buttons and text boxes • Values typed or specified by the user • Words highlighted for emphasis
<i>filename</i>	The following appear in <i>italics</i>: • Variable information to be specified by the user • First occurrences of key terms or phrases defined in the text • Titles of books or other reference texts
Set a breakpoint at <code>main()</code>. The message “Halted” appears in the status bar.	Examples of program code and system-generated messages appear in a mono-spaced, sans-serif font.
In the Start address box, enter <code>a_dot_c</code>.	When you are instructed to enter a value in a text box, type or select the value but do not press the Enter key unless instructed to do so.

How to Use VisualDSP++ Help

While using VisualDSP++, you can access online Help to obtain information about the environment or build tools. The following table explains how to use the VisualDSP++ online Help system:

Table 1-2. VisualDSP++ Help Navigation

For information about ...	Do the following...
VisualDSP++ windows, menus, icons or dialog box controls	Use one of these methods to access context sensitive help: • Press the F1 key when the item (context) is selected • Press the context sensitive help button  and then select the item (context)
VisualDSP++ operations, command syntax, or tools	From the Online Manuals Help topic, open Portable Document Format (PDF) file versions of the user manuals in Adobe Acrobat Reader, which must be installed on your system. These manuals provide quick access to information about VisualDSP++.

To access technical manuals from the VisualDSP++ environment:

1. From the Help menu, choose Contents.
2. On the Contents tab page, click the Reference icon .
3. Under Reference, click Online Manuals.

The Online Manuals help topic appears in the right window pane.

4. Click [Click here to view online manuals](#) to view the list of manuals.
5. Click the button to the left of the manual title to open the manual.

You can copy Help text and paste it into your application. Be aware that the copied text may carry unwanted control codes. See the online Help for details.

Related Documents

For information about development software and Analog Devices DSPs, see the following publications:

- *VisualDSP++ 2.0 Getting Started Guide for 21xx DSPs*
- *VisualDSP++ 2.0 Linker and Utilities Manual for ADSP-21xx DSPs*
- *ADSP-219x /2191 DSP Hardware Reference*
- *ADSP-219x /2192 DSP Hardware Reference*
- *ADSP-219x DSP Instruction Set Reference*
- *VisualDSP++ 2.0 C/C++ Compiler and Library Manual for ADSP-219x DSPs*
- *VisualDSP++ 2.0 Assembler and Preprocessor Manual for ADSP-219x DSPs*
- *ADSP-218x DSP Hardware Reference*
- *ADSP-218x DSP Instruction Set Reference*
- *VisualDSP++ 2.0 C Compiler and Library Manual for ADSP-218x DSPs*
- *VisualDSP++ 2.0 Assembler and Preprocessor Manual for ADSP-218x DSPs*
- *VisualDSP++ 2.0 Kernel (VDK) User's Guide*
- Data sheets: *ADSP-2191 (preliminary), ADSP-219x /2192 (preliminary), ADSP-2181, ADSP-2183, ADSP-2184/84L/84N, ADSP-2185/85L/85M/85N, ADSP-2186/86L/86M/86N, ADSP-2187L/87N, ADSP-2188M/88N, and ADSP-2189M/89N*

All the manuals are included on the software distribution CD-ROM.

Information Services

For Product Information

Analog Devices is online at www.analog.com. Our web pages provide information about our broad range of products: analog integrated circuits, amplifiers, converters, and digital signal processors. For information on our digital signal processors, visit our website at www.analog.com/dsp. Our web pages also provide access to technical information, documentation, product overviews, and product announcements.

You can obtain additional information about Analog Devices and its products as follows:

- FAX questions or requests for information to:

In North America: (781) 461-3010

In Europe: 089/76 903-557

- Access one of these DSP Division File Transfer Protocol (FTP) sites:

[ftp.analog.com](ftp://ftp.analog.com)

[ftp 137.71.23.21](ftp://137.71.23.21)

<ftp://ftp.analog.com>

For Technical or Customer Support

You can reach our DSP Tools Customer Support in the following ways:

- E-mail questions to: dsptools.support@analog.com
- Phone questions to: 1-800-ANALOGD
- Visit our world wide web site at: www.analog.com/dsp
- Telex questions to: 924491, TWX:710/394-6577
- Cable questions to: ANALOG NORWOODMASS
- Contact your local ADI sales office or an authorized ADI distributor
- Send questions by mail to:

Analog Devices, Inc.
DSP Division
One Technology Way
P.O. Box 9106
Norwood, MA 02062-9106
USA