DSP Development Kit, Stratix & Stratix Professional Edition

Getting Started User Guide

I.S. EN ISO 9001

UG-STXDSPKIT-2.2

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About This User Guide

Revision History

The table below displays the revision history for chapters in this user guide.

Chapter	Date	Version	Changes Made
All	December 2004	1.3.0 rev. 1	Updated the document for: ● The *DSP Development Kit, Stratix® Edition* version 1.3.0. ● The *DSP Development Kit, Stratix Professional Edition* version 1.3.0. ● The Quartus II Software Development Kit Edition (DKE) version 4.2. ● The MathWorks MATLAB version 7.0.1. ● The MathWorks Simulink version 6.1.
All	April 2003	1.1.0	Updated the document for the *DSP Development Kit, Stratix Professional Edition*.
All	February 2003	1.0.0	First publication.

For late-breaking information that is not available in this user guide, see the README file. The file is located at:

■ For the *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM*:

*<install_ path>***/stratix_dsp_kit-v***<version>***/Docs/
dsp_dev_kit_stratix_readme-v***<version>***.txt**

or

■ For the *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM*:

*<install_ path>***/stratix_dsp_pro_kit-v***<version>***/
/Docs/dsp_pro_dev_kit_stratix_readme-v***<version>***.txt**

How to Contact Altera

For technical support or other information about Altera products, go to the Altera world-wide web site at www.altera.com. You can also contact Altera through your local sales representative or any of the sources listed below.

Information Type	USA & Canada	All Other Locations
Technical support	www.altera.com/mysupport/	www.altera.com/mysupport/
	800-800-EPLD (3753) 7:00 a.m. to 5:00 p.m. Pacific Time	+1 408-544-8767 7:00 a.m. to 5:00 p.m. (GMT -8:00) Pacific Time
Product literature	www.altera.com	www.altera.com
Altera literature services	lit_req@altera.com	lit_req@altera.com
Non-technical customer service	800-767-3753	+ 1 408-544-7000 7:00 a.m. to 5:00 p.m. (GMT -8:00) Pacific Time
FTP site	ftp.altera.com	ftp.altera.com

Typographic Conventions

This document uses the typographic conventions shown below.

Visual Cue	Meaning
Bold Type with Initial Capital Letters	Command names, dialog box titles, checkbox options, and dialog box options are shown in bold, initial capital letters. Example: **Save As** dialog box.
bold type	External timing parameters, directory names, project names, disk drive names, filenames, filename extensions, and software utility names are shown in bold type. Examples: **f$_{MAX}$, \qdesigns** directory, **d:** drive, **chiptrip.gdf** file.
Italic Type with Initial Capital Letters	Document titles are shown in italic type with initial capital letters. Example: *AN 75: High-Speed Board Design.*
Italic type	Internal timing parameters and variables are shown in italic type. Examples: t_{PIA}, *n* + 1. Variable names are enclosed in angle brackets (< >) and shown in italic type. Example: *<file name>*, *<project name>***.pof** file.
Initial Capital Letters	Keyboard keys and menu names are shown with initial capital letters. Examples: Delete key, the Options menu.
"Subheading Title"	References to sections within a document and titles of on-line help topics are shown in quotation marks. Example: "Typographic Conventions."
Courier type	Signal and port names are shown in lowercase Courier type. Examples: `data1`, `tdi`, `input`. Active-low signals are denoted by suffix `n`, e.g., `resetn`. Anything that must be typed exactly as it appears is shown in Courier type. For example: `c:\qdesigns\tutorial\chiptrip.gdf`. Also, sections of an actual file, such as a Report File, references to parts of files (e.g., the AHDL keyword `SUBDESIGN`), as well as logic function names (e.g., `TRI`) are shown in Courier.
1., 2., 3., and a., b., c., etc.	Numbered steps are used in a list of items when the sequence of the items is important, such as the steps listed in a procedure.
■ ● •	Bullets are used in a list of items when the sequence of the items is not important.
✓	The checkmark indicates a procedure that consists of one step only.
☞	The hand points to information that requires special attention.
⚠ CAUTION	The caution indicates required information that needs special consideration and understanding and should be read prior to starting or continuing with the procedure or process.
⚠	The warning indicates information that should be read prior to starting or continuing the procedure or processes
↵	The angled arrow indicates you should press the Enter key.
👣	The feet direct you to more information on a particular topic.

Chapter 1. About This Kit

Release Information

Table 1–1 provides information about this release of the *DSP Development Kit, Stratix® Edition* and the *DSP Development Kit, Stratix Professional Edition.*

Table 1–1. DSP Stratix Development Kits Release Information	
Item	**Description**
DSP Development Kit, Stratix Edition	
Version	1.3.0
Release Date	December 2004
Ordering Code	DSP-BOARD/S25
DSP Development Kit, Stratix Professional Edition	
Version	1.3.0
Release Date	December 2004
Ordering Code	DSP-BOARD/S80

Introduction

This user guide provides comprehensive information about the *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition*.

The *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition* provide everything you need to develop complete system-on-a-programmable-chip (SOPC) solutions. This document describes how to install the software provided with the kits and how to connect the cables to the Stratix EP1S25 DSP development board and to the Stratix EP1S80 DSP development board.

Figure 1–1 shows the contents of the development kits.

Figure 1–1. Stratix DSP Development Kit Contents

Kit Contents

The Stratix DSP development kits include:

■ **The Stratix EP1S25 DSP development board or the Stratix EP1S80 DSP development board**—The Stratix EP1S25 development board and the Stratix EP1S80 DSP development board are prototyping platforms that provide system designers with a solution for DSP designs. Key features of the boards include a Stratix EP1S25 or EP1S80 device, high-speed analog-to-digital (A/D) and digital-to-analog (D/A) converters, and connectors for Texas Instruments and Analog Devices evaluation boards.

☞ For more information, see the *Stratix EP1S25 Development Board Data Sheet* or the *Stratix EP1S80 Development Board Data Sheet*. These documents are located at:

● For the *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM* (*Stratix EP1S25 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_kit-v***<version>***/Docs/**

or

● For the *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM* (*Stratix EP1S80 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_pro_kit-v***<version>***/Docs/**

■ **DSP Builder version 2.2.1 (DSP system-level design tool that interfaces the Quartus® II software and the MATLAB/Simulink software)**—DSP system design in Altera® devices requires both high-level algorithms and hardware description language (HDL) development tools. Altera's DSP Builder integrates these tools by combining the algorithm development, simulation, and verification capabilities of The MathWorks MATLAB/Simulink system-level design tools with HDL synthesis, simulation, and Altera development tools. DSP Builder shortens DSP design cycles by helping you create the hardware representation of a DSP design in an algorithm-friendly development environment. DSP Builder allows system, algorithm, and hardware designers to share a common development platform. See the *DSP Builder User Guide* for more information.

■ **Quartus II Software Development Kit Edition (DKE) version 4.2**—The Quartus II software development kit provides a comprehensive environment for SOPC design. The Quartus II software integrates into nearly any design environment, with interfaces to industry-standard EDA tools.

☞ The Quartus II DKE software license allows you to use the product for 12 months. After 12 months, you must purchase a renewal subscription to continue using the software. For more information, see the Altera web site at **www.altera.com**.

■ **Evaluation MegaCore® IP Functions version 2004.12**—This CD-ROM contains Altera IP MegaCore functions, including DSP MegaCore functions. You can evaluate the MegaCore functions using the OpenCore® Plus feature, which allows you to:

● Simulate the behavior of a MegaCore function within your system
● Verify the functionality of your design, as well as quickly and easily evaluate its size and speed
● Generate time-limited device programming files for designs that include MegaCore functions
● Program a device and verify your design in hardware

You only need to purchase a license for a MegaCore function when you are completely satisfied with its functionality and performance, and want to take your design to production.

☞ The OpenCore Plus hardware evaluation feature is an evaluation tool for prototyping only. You must purchase a license to use an Altera IP function in production designs. You can obtain a license to enable the OpenCore Plus feature from the Altera web site at **www.altera.com**.

■ **Reference Design**—Altera provides a filtering reference design with the *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition* to help you get started building applications. See for more information on the reference design provided.

Quartus II System Requirements

Your system must meet the following minimum requirements:

- Pentium II PC running at 400 MHz or faster with 512-MB system memory (faster systems give better performance)
- 1.2 GB of available disk space on the drive or partition where you install the Quartus® II software and an additional 5.2 MB on the drive containing your system directory
- Microsoft Windows NT version 4.0 (Service Pack 6 or later), 2000, or XP
- Microsoft Windows-compatible SVGA monitor
- CD-ROM drive
- Internet Explorer (IE) starting with version 5.0 is required to use the Quartus II online Help system. If you have IE version 3.x, the Quartus II software will run, but the online Help system will not work
- Internet access for online registration of the Quartus II software and request license files. If you do not have Internet access, contact your local Altera representative
- System administrator privileges to install parts of the Quartus II software on Windows NT or Windows 2000

For additional information on system requirements, see the *Quartus II System Requirements* section in the *Quartus II Design Software Installation & Licensing for PCs* manual, which is included with the development kit.

Before You Begin

Before using the kit or installing the software included in the kit, be sure to check the contents of the kit and inspect the board to verify that you received all of the items. If any of these items are missing, contact Altera before you proceed.

DSP Development Kit, Stratix Edition Contents

The *DSP Development Kit, Stratix® Edition* contains the following items:

- Stratix EP1S25 DSP development board with an EP1S25 device
- *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM*
- *DSP Builder Version 2.2.1 CD-ROM*
- *The MathWorks MATLAB and Simulink CD-ROM Release 14 with Service Pack 1 (R14SP1)*. Includes:
  - MATLAB version 7.0.1
  - Simulink version 6.1
- *Quartus II Software Development Kit Edition (DKE) version 4.2 CD-ROM*
- *MegaCore® IP library version 2004.12 CD-ROM*
- Mini-Circuits SLP-50 anti-aliasing filter
- ByteBlasterMV™ cable
- Power cable and adapters for North America, Europe, United Kingdom, and Japan
- SMA cable
- RS-232 cable
- Filtering reference design

DSP Development Kit, Stratix Professional Edition Contents

The *DSP Development Kit, Stratix Professional Edition* contains the following items:

- Stratix EP1S80 DSP development board with an EP1S80 device
- *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM*
- *DSP Builder Version 2.2.1 CD-ROM*
- *The MathWorks MATLAB and Simulink CD-ROM Release 14 with Service Pack 1 (R14SP1)*. Includes:
  - MATLAB version 7.0.1
  - Simulink version 6.1
- *Quartus II Software Development Kit Edition (DKE) version 4.2 CD-ROM*
- *MegaCore IP library version 2004.12 CD-ROM*
- Mini-Circuits SLP-50 anti-aliasing filter
- ByteBlasterMV cable
- Power cable and adapters for North America, Europe, United Kingdom, and Japan

■ SMA cable
■ RS-232 cable
■ Filtering reference design

Inspect the Board

Place the board on an anti-static surface and inspect it to ensure that it has not been damaged during shipment. Verify that all components are on the board and appear intact.

☞ The Stratix EP1S25 DSP development board or the Stratix EP1S80 DSP development board can be damaged without proper anti-static handling.

☞ For more information on the board components and their locations on the development boards, see the *Stratix EP1S25 Development Board Data Sheet* or the *Stratix EP1S80 Development Board Data Sheet.* These documents are located at:

● For the *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM* (*Stratix EP1S25 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_kit-v***<version>***/Docs/**

or

● For the *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM* (*Stratix EP1S80 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_pro_kit-v***<version>***/Docs/**

Software Requirements

You should install the following software before you begin developing designs for the kit:

■ The Quartus II software starting with version 4.2. See "Installing the Quartus II Software" on page 2–4.

■ The software on the *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM* or the *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM.* See "Installing the MegaCore Functions & Reference Design" on page 2–4.

■ The following software is required to create hardware description language (HDL) designs that use blocks from DSP Builder:

● MATLAB version 7.0.1
● Simulink version 6.1

DSP Builder provides automated flows using Tcl scripts as well as a manual flow (see the *DSP Builder User Guide* for a description of these flows). In addition to Quartus II integrated synthesis, the automated flow also supports Mentor Graphics® ModelSim®-Altera, ModelSim PE, or ModelSim SE version 5.8d.

■ You need your network identification card (NIC) for licensing the Quartus II software.

☞ Your NIC ID is a 12-digit hexadecimal number that identifies the Windows NT workstation that serves Quartus II licenses. Networked (or floating node) licensing requires a NIC ID or server host ID. When obtaining a license file for network licensing, you should use the NIC ID from the PC that will issue the Quartus II licenses to distributed users over a network. You can find the NIC ID for your card by typing `ipconfig /all` at a command prompt. Your NIC ID is the number on the physical address line, without the dashes.

Software Installation

This section explains how to install the following software:

■ "Installing the Quartus II Software"
■ "Installing the MegaCore Functions & Reference Design"
■ "Installing The MathWorks MATLAB/Simulink CD-ROM"
■ "Installing DSP Builder"

Installing the Quartus II Software

Software installation directions are provided in the *Installing the Quartus II Software* section in the *Quartus II Design Software Installation & Licensing for PCs* manual, which is included with the development kit. After installing the software, you must request and install a license to enable it. See "Set Up Licensing" on page 2–8 for more information.

Installing the MegaCore Functions & Reference Design

To install the MegaCore functions and reference design, insert the *MegaCore IP library version 2004.12 CD-ROM* into your CD-ROM drive. The installation program runs automatically.
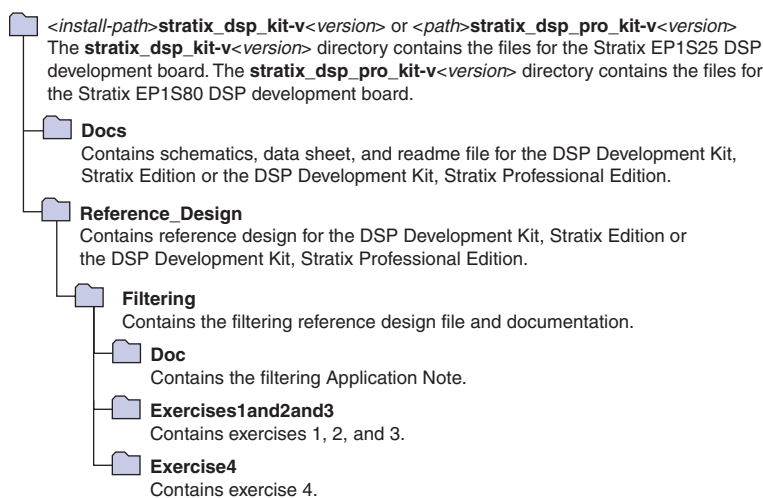
You only need to purchase a license for a MegaCore Plus function when you are completely satisfied with its functionality and performance, and want to take your design to production.

☞ The OpenCore Plus hardware evaluation feature is an evaluation tool for prototyping only. You must purchase a license to use an Altera IP Megafunction in production designs.

Figure 2–1 shows the Stratix DSP development kit directory structure.

Figure 2–1. Stratix DSP Development Kit Directory Structure

*<install-path>***stratix_dsp_kit-v***<version>* or *<path>***stratix_dsp_pro_kit-v***<version>*
The **stratix_dsp_kit-v***<version>* directory contains the files for the Stratix EP1S25 DSP development board. The **stratix_dsp_pro_kit-v***<version>* directory contains the files for the Stratix EP1S80 DSP development board.

Docs
Contains schematics, data sheet, and readme file for the DSP Development Kit, Stratix Edition or the DSP Development Kit, Stratix Professional Edition.

Reference_Design
Contains reference design for the DSP Development Kit, Stratix Edition or the DSP Development Kit, Stratix Professional Edition.

Filtering
Contains the filtering reference design file and documentation.

Doc
Contains the filtering Application Note.

Exercises1and2and3
Contains exercises 1, 2, and 3.

Exercise4
Contains exercise 4.

Installing The MathWorks MATLAB/Simulink CD-ROM

To install The MathWorks software, perform the following steps:

1. Before installing, make sure that you have your Personal License Password (PLP) available.

☞ A 30-day license for MATLAB/Simulink is included as part of the *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition*. To obtain the PLP and for more information, visit The MathWorks at: **www.mathworks.com/products/connections/trials/altera.shtml**.

2. If you have installed a previous version of the MATLAB/Simulink software, and it is running, close the software before continuing to the next step.

3. Insert the *The MathWorks MATLAB and Simulink CD-ROM Release 14 with Service Pack 1 (R14SP1)*. The MathWorks Installer automatically starts, displaying the **Welcome to the MathWorks Installer** dialog box. Choose **Install** and click **Next**.

4. Enter your name, company name, and PLP in the **License Information** dialog box and click **Next**.

5. Review the software licensing agreement and, if you agree with the terms, select the **Yes** check box and click **Next**.

6. Select **Typical** or **Custom** installation and click **Next**.

7. Click **Install**.

8. Click **Finish**.

Installing DSP Builder

To install DSP Builder, perform the following steps.

☞ Before you install DSP Builder, Altera recommends that you install the MATLAB and Simulink software and the Quartus II software.

1. Close the following software applications if they are open:

   ● The Quartus II software
   ● The MAX+PLUS® II software
   ● The Mentor Graphics® LeonardoSpectrum™ synthesis tool
   ● The Synplicity Synplify Pro software
   ● The MATLAB and Simulink software (if you have installed previous versions)
   ● The ModelSim-Altera, ModelSim PE, or ModelSim SE simulator software

2. Choose **Run** (Windows Start menu).

3. Insert the *DSP Builder Version 2.2.1 CD-ROM* into your CD-ROM drive. Type *<drive letter>***:**dspbuilder-v2.2.1.exe, where *<drive letter>* is your CD-ROM drive.

4. Click **OK**. The **DSPBuilder v2.2.1 - InstallShield Wizard** dialog box appears. Follow the on-line instructions to finish installation.

☞ The DSP Builder software license included with the *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition* is a perpetual license with free software upgrades for the first 12 months. After 12 months, you must purchase a renewal subscription for access to future software upgrades. For more information, refer to the Altera web site at **www.altera.com**.

☞ DSP Builder launches the LeonardoSpectrum, Synplify Pro, or Quartus II software by retrieving the software's path information from your PC's registry file. If you have installed multiple versions of these software products, the registry may not point to the version you want to use with DSP Builder. In DSP Builder you can specify a path to use other than the registry setting for each of the tools.

For information on specifying the paths, see the *Specifying Precision RTL Synthesis, LeonardoSpectrum, Synplify & Quartus II Path Information for SignalCompiler* section in the *Troubleshooting* chapter in the *DSP Builder User Guide*.

When you have finished installing DSP Builder, view DSP Builder libraries in the MATLAB software by performing the remaining steps.

5. Start the MATLAB software.

6. At the MATLAB command prompt, change directory to the **DSP Builder\altlib** directory and type the following:

```
setup_dspbuilder ↵
```

7. Expand the Simulink icon in the **Launch Pad** window.

8. Double-click the **Library Browser** icon. The **Altera DSP Builder** folder appears in the **Simulink Library Browser** window.

For information on the DSP Builder directory structure, see the *DSP Builder User Guide*. The *DSP Builder User Guide* also includes a tutorial that describes how to create a design in Simulink and then convert it to VHDL for synthesis, Quartus II compilation, and RTL simulation.

Set Up Licensing

Before using the Quartus II software and DSP Builder, you must request a license file from the Altera web site. Select the **Licensing** link at **www.altera.com**. Install the license file on your PC. When you request a license file, Altera e-mails you a **license.dat** file that enables the software.

To obtain a license, perform the following steps:

1. Select the **Licensing** link at **www.altera.com**.

2. Click **DSP Development Kit, Stratix Edition** or **DSP Development Kit, Stratix Professional Edition**.

3. Follow the online instructions to request your license. A **license.dat** file is e-mailed to you.

4. Close the following software applications if they are open:

   - The Quartus II software
   - The MAX+PLUS II software
   - The MATLAB and Simulink software
   - The LeonardoSpectrum synthesis tool
   - The Synplicity Synplify Pro software
   - The ModelSim simulator

   ☞ To install your license, see the *Specifying the License File* section in the *Quartus II Design Software Installation & Licensing for PCs* manual, which is included with the development kit.

Connect the Cables to the Board & PC

The instructions in this section explain how to set up the following hardware:

■ ByteBlasterMV cable
■ RS-232 cable
■ Power supply cable
■ SMA cable
■ SLP-50 anti-aliasing filter

☞ Before connecting the cables, disconnect the power supply cable from your board.

ByteBlasterMV Cable

The board supplies power to the ByteBlasterMV download cable.

Connect the ByteBlasterMV cable's 10-pin female plug to the Stratix device JTAG header on the board (JP30 for the board with the EP1S80 device and JP17 for the board with the EP1S25 device) and connect the other end to your PC to configure the Stratix device directly using an SRAM Object File (**.sof**). See Figure 2–2. The reference design provided in the development kits include an SOF for configuring the Stratix device directly.

☞ Align the ByteBlasterMV connector so that the red stripe is oriented towards the Altera logo on the board.

☞ For more information on how to configure the Stratix device on the development board see the *Stratix EP1S25 DSP Development Board Data Sheet* or *Stratix EP1S80 DSP Development Board Data Sheet*. These documents are located at:

● For the *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM* (*Stratix EP1S25 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_kit-v***<version>***/Docs/**

or

● For the *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM* (*Stratix EP1S80 Development Board Data Sheet*):

*<install_ path>***/stratix_dsp_pro_kit-v***<version>***/Docs/**

👣 For more information on configuring Stratix devices, see the *Configuring Stratix & Stratix GX Devices* chapter in the *Stratix Device Handbook*, Volume 2.

*Figure 2–2. Connect the ByteBlasterMV Cable to the EP1S25 or EP1S80 Board*
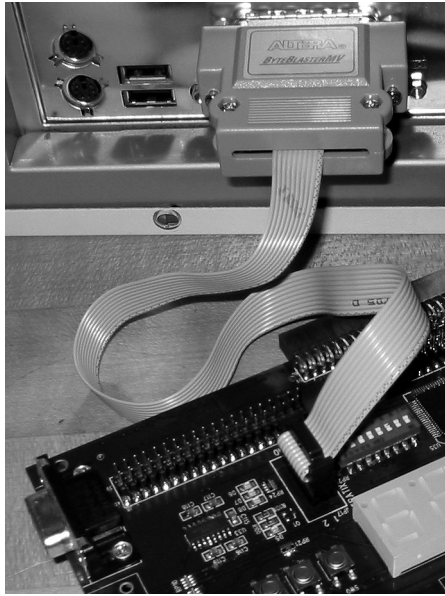
RS-232 Cable

You can optionally attach the serial cable to one of the serial ports on your PC and to the RS-232 male connector at J8 on the board. See Figure 2–3.

☞ For the Stratix DSP board to communicate with the PC via the RS-232 cable, RS-232 interface logic must be implemented in the Altera device on the board.

For the EP1S25 development board, the J8 connector is located on the bottom, right-hand side of the board. For the EP1S80 development board, the J8 connector is located on the bottom, left-hand side of the board.
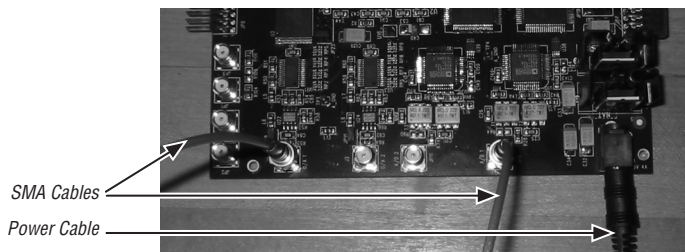
Figure 2–3. Connect the RS-232 Cable to the EP1S25 Development Board
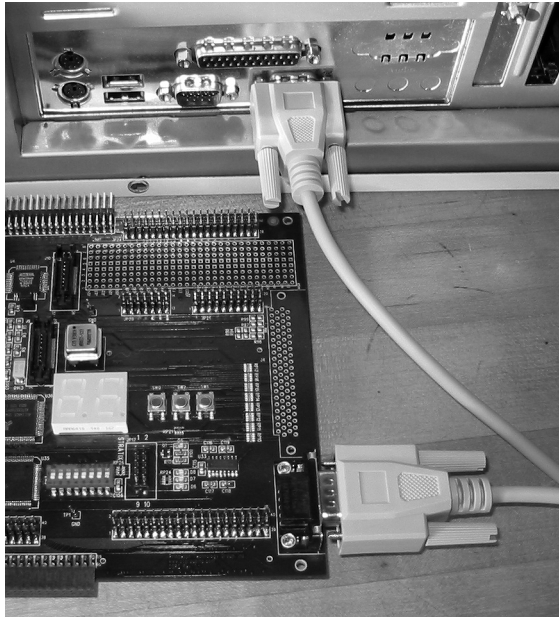
SMA Cable

For the Stratix EP1S25 development board or the Stratix EP1S80 development board, connect both ends of the SMA cable to the board. This cable connects the digital-to-analog (D/A1 or D/A2) and analog-to-digital (A/D1 or A/D2) connectors on the board. See Figure 2–4.

Figure 2–4. Connect the SMA Cable to the EP1S25 Development Board

SMA Cables

Power Cable

SLP-50 Anti-Aliasing Filter

The SLP-50 anti-aliasing filter from Mini-Circuits provides a 55-MHz cut-off frequency. To use the anti-aliasing filter, connect one end of the filter to one of the digital-to analog connectors on the Stratix EP1S25 development board or the Stratix EP1S80 development board (D/A1 or D/A2). Connect the other end of the filter to the SMA cable. You can perform an external loopback from the D/A converter to one of the A/D converters by connecting the other end of the SMA cable to one of the A/D connectors on the board (A/D1 or A/D2).

Power Supply Cable

Connect the power cable to the Stratix EP1S25 development board or the Stratix EP1S80 development board 5.0-V Power Supply Connector (J1) and plug the other end into a power outlet. Figure 2–4 illustrates this for the Stratix EP1S25 development board.

After the board powers up, the on-board flash, which is shipped pre-programmed with a filtering design, automatically configures the Stratix device. The **conf_done** LED (D5) turns on, signifying that the Stratix device is configured.

Using the Reference Design

Altera provides a filtering reference design with the *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition* to help you get started building applications.

DSP Filtering Reference Design—The *DSP Development Kit, Stratix Edition* and the *DSP Development Kit, Stratix Professional Edition* filtering reference design shows you how to use DSP Builder for system design, simulation, and board-level verification. DSP Builder is a digital signal processing development tool that interfaces The MathWorks industry-leading system-level DSP tool Simulink with the Quartus II software. DSP Builder provides a seamless design flow in which you can perform algorithmic design and system integration in the MATLAB and Simulink software and then port the design to HDL files for use in the Quartus II software.

Documentation

The *DSP Development Kit, Stratix Edition Version 1.3.0 CD-ROM* contains the following documentation:

■ *DSP Development Kit, Stratix & Stratix Professional Edition Getting Started User Guide* (this document)
■ *Stratix EP1S25 DSP Development Board Data Sheet*
■ *AN 245: Stratix Filtering Reference Design*
■ *Stratix EP1S25 DSP Development Board Schematics*

☞ A printed copy of the *Quartus II Design Software Installation and Licensing for PCs* manual is included in the development kit, however; it is not included on the CD-ROM.

The *DSP Development Kit, Stratix Professional Edition Version 1.3.0 CD-ROM* contains the following documentation:

■ *DSP Development Kit, Stratix & Stratix Professional Edition Getting Started User Guide* (this document)
■ *Stratix EP1S80 DSP Development Board Data Sheet*
■ *AN 245: Stratix Filtering Reference Design*
■ *Stratix EP1S80 DSP Development Board Schematics*

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