

# Upgrading the PCIe DVR EVK/RDK to v4.1

**IMPORTANT!** All previously installed DVR software components (boot loader firmware, board firmware, PCeI driver, and sample DVR application) must be upgraded for proper operation. For example, using the v4.1 PCIe driver with prior releases (and vice versa) may cause certain host operations to malfunction.

Before proceeding, ensure that the following have been previously completed.

- The Stretch Software Development Tools Release 2008.09 or later has been installed so that you can use the `st-flash` tool.
- The Xtensa OCD version 7.0.1 or later has been installed and set up so that you can establish an XOCD connection (refer to “Installing the JTAG/OCD Software on Your PC” in the *Stretch DVR RDK Installation and Quick Start Guide*).
- The Stretch debug board has been connected to the DVR board with an OCD Wiggler or a Catapult JTAG probe attached (refer to “Connecting the Debug Module to the DVR and the PC”, in the *Stretch DVR RDK Installation and Quick Start Guide*).

**NOTE:** This document applies to all VRC6000 series PCIe DVR boards. The generic term `vrc60xx` is used for simplicity in directory paths, file names, and commands; use the appropriate term for your board (e.g., `vrc6016` or `vrc6008`) when entering commands.

## To upgrade to v4.1

1. Upgrade the DVR board boot loader firmware in the Flash ROM using the `st-flash` tool with the pre-built `vrc60xx_bootldr.exe` or `vrc60xx_bootldr-g.exe` file as follows. These files are located in the `<installpath>/SDVR/bin/vrc60xx` directory. Follow these steps:
  - a. Make sure the host side DVR application is shut down.
  - b. Establish an XOCD connection to the DVR board (refer to the *Stretch DVR RDK Installation and Quick Start Guide*, if necessary, for how to do this).
  - c. Open a Stretch command shell and type the following:

```
st-flash -V -s localhost:20000 -f vrc60xx_dvrfw_bootldr.exe -do 0 [-ms6100-3]
```

or

```
st-flash -V -s <xocd_server:port> -f vrc60xx_dvrfw_bootldr-g.exe -do 0 [-ms6100-3]
```

where `<xocd_server>` is the name or IP address of the machine where XOCD is running, and `<port>` is the port number.
  - d. After the update is complete, reboot the host PC so that the new DVR board boot loader firmware can be used.
2. *This step is not required if you download the board firmware at start-up using your host side DVR application or Stretch's sample DVR application.* Upgrade the DVR board firmware in the Flash ROM using the `st-flash`

tool with the pre-built `vrc60xx.rom` file as follows. The file is located in `<install_path>/SDVR/bin/vrc60xx` directory.

- a. Make sure the host side DVR application is shut down.
- b. Establish a JTAG connection to the DVR board using XOCD.
- c. Open a Stretch command shell and type the following:

```
st-flash -V -s localhost:20000 -f vrc60xx_dvrfw.rom [-ms6100-3]
```

or

```
st-flash -V -s <xocd_server:port> -f vrc60xx_dvrfw.rom [-ms6100-3]
```

where `<xocd_server>` is the name or IP address of the machine where XOCD is running, and `<port>` is the port number.

- d. After the upgrade is complete, reboot the host PC so that the new DVR board firmware can be used.

3. To upgrade the previous installation of the PCIe driver, follow these steps:

- a. Right-click on My Computer and select Properties from the pop-up menu to open the System Properties dialog window.
- b. Select the Hardware tab and click the Device Manager button.
- c. In the Device Manager window, locate the Stretch S6 PCI Driver Board in the device list under the Sound, video, game controllers entry (on some systems it may be found under the Other Devices entry). Right-click on this device and select Update Driver from the pop-up menu to start the Hardware Update Wizard.
- d. In the Hardware Update Wizard, manually select “No, not at this time”, Next, “Install from a list or specific location”, Next, and browse to the `<install_path>/SDVR/src/host/bin/windows/Release` directory for the driver to install.
- e. Select Next and Finish to complete the installation.

4. To upgrade the previous installation of the sample DVR application, follow these steps:

- a. Uninstall any previous versions of the sample DVR application by opening the Windows Control Panel and selecting the Add/Remove Programs utility.
- b. Select Stretch DVR Demo Tools from the list and click the Remove button.
- c. Locate and run the install program `setup.exe` in the `<install_path>/SDVR/src/host/installer` directory.
- d. Follow the install program instructions to complete the sample DVR application installation.

5. Reboot the PC.

6. Refer to “Running the Sample DVR Application” in the *Stretch DVR RDK Installation and Quick Start Guide* to verify the successful upgrade of all the DVR software components.

TN-0100-0004-001

---

© 2008 Stretch, Inc. All rights reserved. The Stretch logo, Stretch, and Extending the Possibilities are registered trademarks of Stretch, Inc. All other trademarks and brand names are the properties of their respective owners.

This preliminary publication is provided “AS IS.” Stretch, Inc. (hereafter “Stretch”) DOES NOT MAKE ANY WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF TITLE, NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Information in this document is provided solely to enable system and software developers to use Stretch processors. Unless specifically set forth herein, there are no express or implied patent, copyright or any other intellectual property rights or licenses granted hereunder. Stretch does not warrant that the contents of this publication, whether individually or as one or more groups, meets your requirements or that the publication is error-free. This publication could include technical inaccuracies or typographical errors. Changes may be made to the information herein, and these changes may be incorporated in new editions of this publication.