

Arm[®] DSTREAM-ST

Version 1.0

Getting Started Guide

The logo for Arm, consisting of the lowercase letters 'arm' in a bold, sans-serif font.

Arm® DSTREAM-ST**Getting Started Guide**

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Web Address

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Federal Communications Commission Notice

This device is test equipment and consequently is exempt from part 15 of the FCC Rules under section 15.103 (c).

Class A

Important: This is a Class A device. In residential areas, this device may cause radio interference. The user should take the necessary precautions, if appropriate.

CE Conformity



The *Waste Electrical and Electronic Equipment* (WEEE) marking, that is, the crossed out wheeled-bin figure, indicates that this product must not be disposed of with general waste within the European Union. To prevent possible harm to the environment from uncontrolled waste disposal, the user is required to recycle the product responsibly to promote reuse of material resources. To comply with EU law, you must dispose of the product in one of the following ways:

- Return it to the distributor where it was purchased. The distributor is required to arrange free collection when requested.
- Recycle it using local WEEE recycling facilities. These facilities are now very common and might provide free collection.
- If purchased directly from Arm, Arm provides free collection. Please e-mail weee@arm.com for instructions.

The CE Declaration of Conformity for this product is available on request.

The system should be powered down when not in use.

It is recommended that ESD precautions be taken when handling this product.

The product generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off or on, you are encouraged to try to correct the interference by one or more of the following measures:

- Ensure attached cables do not lie across any sensitive equipment.
- Reorient the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note

It is recommended that wherever possible shielded interface cables be used.

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Preface

This preface introduces the *Arm® DSTREAM-ST Getting Started Guide*.

It contains the following:

- [About this book on page 7.](#)

About this book

Describes the DSTREAM-ST debug and trace unit which enables you to debug and optimize your software on Arm processor-based hardware targets.

Using this book

This book is organized into the following chapters:

Chapter 1 Introduction

DSTREAM-ST is a debug and trace hardware unit that enables software debug and optimization on Arm processor-based targets.

Chapter 2 Set up your DSTREAM-ST

This chapter contains instructions about connecting the DSTREAM-ST unit to your host PC and target system.

Chapter 3 Work with your DSTREAM-ST

Arm DSTREAM-ST is a comprehensive solution for the development and debug of complex Arm-based devices. This chapter explains some of the ways you can use DSTREAM-ST to work with your targets.

Chapter 4 Troubleshooting

This chapter describes the steps that you need to take when your DSTREAM-ST unit does not function as expected.

Glossary

The Arm® Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the *Arm® Glossary* for more information.

Typographic conventions

italic

Introduces special terminology, denotes cross-references, and citations.

bold

Highlights interface elements, such as menu names. Denotes signal names. Also used for terms in descriptive lists, where appropriate.

monospace

Denotes text that you can enter at the keyboard, such as commands, file and program names, and source code.

monospace

Denotes a permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.

monospace italic

Denotes arguments to monospace text where the argument is to be replaced by a specific value.

monospace bold

Denotes language keywords when used outside example code.

<and>

Encloses replaceable terms for assembler syntax where they appear in code or code fragments. For example:

```
MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2>
```

SMALL CAPITALS

Used in body text for a few terms that have specific technical meanings, that are defined in the *Arm® Glossary*. For example, IMPLEMENTATION DEFINED, IMPLEMENTATION SPECIFIC, UNKNOWN, and UNPREDICTABLE.

Feedback

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If you have any comments or suggestions about this product, contact your supplier and give:

- The product name.
- The product revision or version.
- An explanation with as much information as you can provide. Include symptoms and diagnostic procedures if appropriate.

Feedback on content

If you have comments on content then send an e-mail to errata@arm.com. Give:

- The title *Arm DSTREAM-ST Getting Started Guide*.
- The number 100892_0100_06_en.
- If applicable, the page number(s) to which your comments refer.
- A concise explanation of your comments.

Arm also welcomes general suggestions for additions and improvements.

————— **Note** —————

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Other information

- *Arm® Developer*.
- *Arm® Information Center*.
- *Arm® Technical Support Knowledge Articles*.
- *Technical Support*.
- *Arm® Glossary*.

Chapter 1

Introduction

DSTREAM-ST is a debug and trace hardware unit that enables software debug and optimization on Arm processor-based targets.

DSTREAM-ST provides an interface between a host such as Arm Development Studio and an Arm processor-based target using a hardware interface such as JTAG or Serial Wire Debug (SWD). It also enables the collection of narrow-port (4-pin) parallel streaming trace from the device for non-intrusive debug and code optimization.

This chapter describes the DSTREAM-ST hardware.

It contains the following sections:

- [1.1 Buy Arm® DSTREAM-ST on page 1-10.](#)
- [1.2 Arm® DSTREAM-ST box contents on page 1-11.](#)
- [1.3 The DSTREAM-ST unit on page 1-12.](#)

1.1 Buy Arm® DSTREAM-ST

Arm has over 100 trusted distributors around the world offering products, training, and support.

You can [contact them](#) to buy DSTREAM-ST.

For debug unit product comparisons, and more information about purchasing options, see the **Debug Probe** subset of tools in the [Arm Developer Store](#).

For OEM licenses, [contact Arm](#) directly.

1.2 Arm® DSTREAM-ST box contents

The DSTREAM-ST product box contains the required components to set up and connect your PC to your Arm architecture-based development board.

The items are:

- DSTREAM-ST unit.
- Power supply unit and associated cables.
- Ethernet cable.
- USB 3.0 cable.
- CoreSight™ 10/20-way 0.05” pitch ribbon cable.
- CoreSight Short 20-way 0.05” pitch ribbon cable.
- JTAG 20-way 0.1” pitch ribbon cable.
- JTAG 14-way Texas Instruments adapter.
- MICTOR 38-way adapter.

1.3 The DSTREAM-ST unit

The DSTREAM-ST unit provides the hardware interface to connect the host computer to your target.

Rear

The rear of the DSTREAM-ST unit contains ports for connecting to the network, host PC, and the power source. It also contains the **RESET** button and the **USER IO** port.

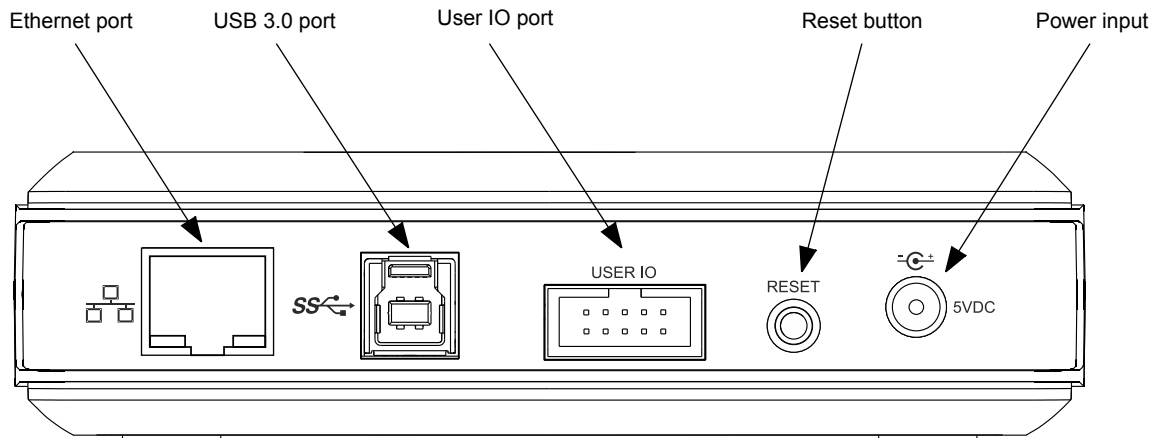


Figure 1-1 Rear of the DSTREAM-ST unit

Ethernet port

If you want to access your DSTREAM-ST unit over a local area network, use the Ethernet port.

The green LED indicates that the Ethernet link is up and running. The yellow LED indicates that activity is taking place. Supported data rates are: 10/100/1000 Mbps.

DSTREAM-ST is a Gigabit Ethernet (GbE) device. To achieve the maximum GbE data transfer rate:

- Your PC must support the GbE standard.
- Your network infrastructure must support the GbE standard.
- You must use the included GbE cable.

USB 3.0 port

To connect the DSTREAM-ST unit directly to your host PC, use the USB 3.0 port.

DSTREAM-ST is a USB 3.0 device. To achieve the maximum USB 3.0 data transfer rate:

- Your PC must have a USB 3.0 port.
- You must use the included USB 3.0 data cable.

Longer or lower-quality cables might not operate at USB 3.0 data transfer rates because of higher signal loss. In this event, DSTREAM-ST reverts to USB 2.0 mode.

USER IO port

Use the USER IO port to set up custom input or output connections to your target. See the [Arm DSTREAM-ST System and Interface Design Reference Guide](#) for more details.

RESET Button

To reset the DSTREAM-ST unit, press and release the RESET button. The RESET button operates immediately and performs a full internal power-cycle. This also resets any attached probes.

Warning

Always use the RESET button to power-cycle your DSTREAM-ST unit. Disconnecting and reconnecting the DC plug to power-cycle your target might cause ground-loop issues.

Note

If you continue to hold the RESET button for 10 seconds more, the STATUS LED flashes red rapidly. When you release the RESET button after this point, DSTREAM-ST reboots and defaults back to factory installed firmware. To update the firmware of your DSTREAM-ST unit, use the [Debug Hardware Firmware Installer view](#) in Arm Development Studio.

Power input

Connect the power adapter provided with the DSTREAM-ST unit to this port.

Front

The front of the DSTREAM-ST unit contains ports for connecting to your target.

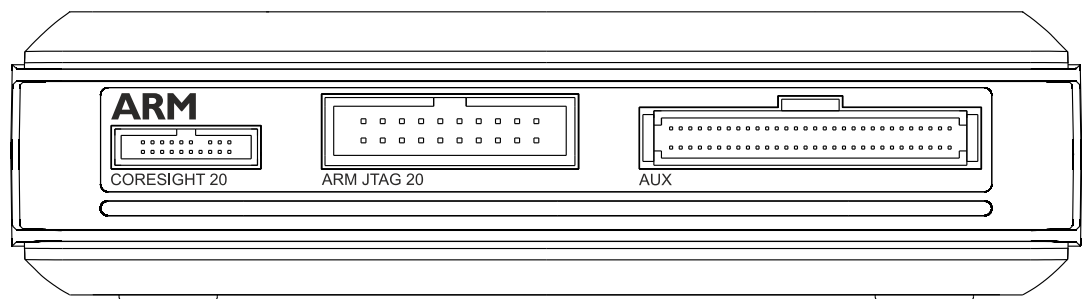


Figure 1-2 Front of the DSTREAM-ST unit.

CORESIGHT 20

A high-density connector that supports 10-way or 20-way CoreSight standards in addition to a subset of the MIPI debug connection standards. It provides support for Serial Wire and JTAG interface modes in a 20-pin (0.05") connector.

Note

To achieve the highest possible trace data rate, Arm recommends using the short, 15cm ribbon cable.

ARM JTAG 20

JTAG 20 provides support for Serial Wire and JTAG interface modes in a 20-pin (0.1") connector.

AUX

This port is included for any potential future enhancement of DSTREAM-ST.

Other connectors

Included with DSTREAM-ST are:

- **Texas Instruments 14-way adapter** - Used along with the Arm JTAG 20 cable, provides debug access to any target with a TI JTAG 14 header.
- **MICTOR adapter** - Used along with the Arm JTAG 20 and CoreSight 20 cables, this adapter provides debug and trace access to any target with a MICTOR socket.

————— **Note** —————

To achieve full MICTOR connectivity, you must use both the Arm JTAG 20 and CoreSight 20 cables.

Optional adapters

The following adapters are also available for use with DSTREAM-ST. Each of these allows DSTREAM-ST to capture up to 4-bit wide ETM trace and also allow the use of separate debug and trace power domains.

- **MIPI-34 adapter** - This adapter connects directly to the front panel of DSTREAM-ST and is supplied with a MIPI-34 ribbon cable to provide debug and trace access to any target with a MIPI-34 header.
- **MIPI-60 adapter** - This adapter plugs into a target's MIPI-60 socket and converts it to a MICTOR socket for use with the DSTREAM-ST MICTOR adapter.

To obtain optional adapters, [contact Arm support](#) with your requirements.

Indicator LEDs on the top

When you power up the DSTREAM-ST unit, the LEDs on top of the unit indicate the status of the unit.

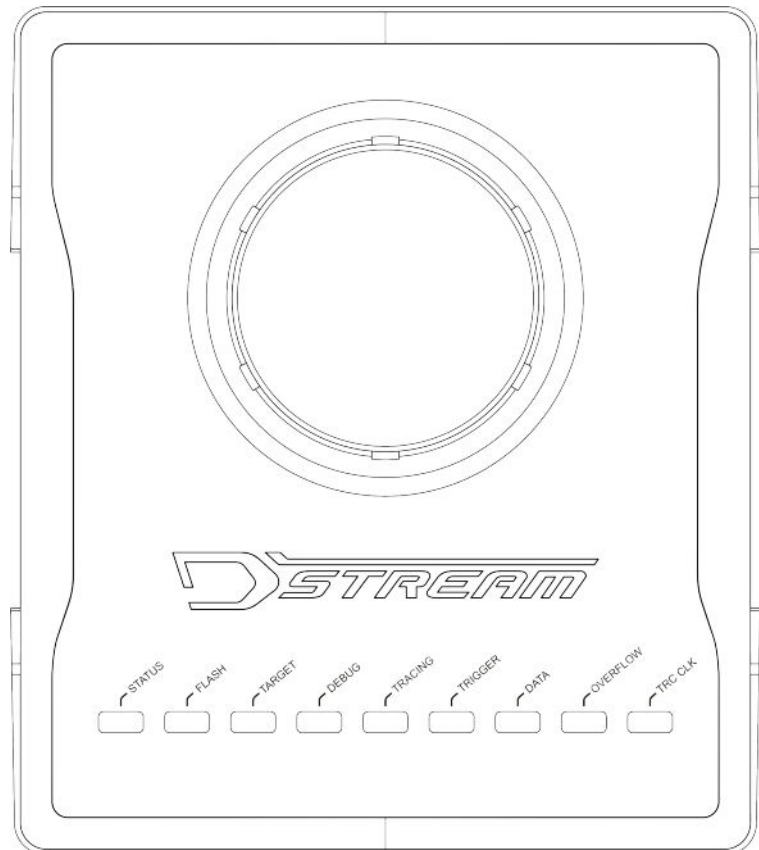


Figure 1-3 Indicator LEDs

DSTREAM logo

The DSTREAM logo on the top of the unit illuminates and the **STATUS** LED begins to flash when you power up the DSTREAM-ST unit. The DSTREAM logo also flashes when you click the **Identify** button in the *Debug Hardware Configure IP view* or the *Debug Hardware Firmware Installer view* in Arm Development Studio.

STATUS

Illuminates green to show that DSTREAM-ST is in its ready state.

If a critical error is detected, the **STATUS** LED illuminates as continuous red. If the **STATUS** LED is red, then you must reset the DSTREAM-ST unit to the factory settings before you can continue using it. If the DSTREAM-ST unit fails to boot after a reset, *contact Arm support*. For more information, see *Restore a DSTREAM-ST unit on page 4-28*.

FLASH

Illuminates when the unit is accessing its internal flash storage.

TARGET

Illuminates when a valid target VTREF is detected.

DEBUG

Illuminates when debug data transfer takes place.

TRACING

Indicates that DSTREAM-ST is attempting to capture data and synchronize with the trace stream.

TRIGGER

Indicates that a trigger is present in the trace data.

DATA

Indicates that trace synchronization is complete and DSTREAM-ST is capturing trace data. Trace synchronization is when the DSTREAM-ST unit aligns with the trace data stream on detection of a full synchronization packet.

OVERFLOW

Indicates an overflow-condition during trace capture. An overflow condition occurs if it has not been possible to stream trace data to the host PC at a high enough rate. For example, if the USB port is only operating in USB 2.0 mode, if the Ethernet port is only operating at 100Mbps, or if other applications on the host PC are using too much USB or Ethernet bandwidth.

In general, when streaming trace data, the best practice is to keep usage of other applications, on the host PC, to a minimum.

TRC CLK

If the **TRC CLK** LED is green, it indicates that a valid trace clock is detected. This is the normal condition when capturing trace data from a target.

If the **TRC CLK** LED is off, then no trace clock signal is detected.

If the **TRC CLK** LED is red and flashing, it indicates that the received trace clock frequency is too high or too low to be captured.

Related tasks

2.3 Connect and power up the DSTREAM-ST unit on page 2-19

Chapter 2

Set up your DSTREAM-ST

This chapter contains instructions about connecting the DSTREAM-ST unit to your host PC and target system.

It contains the following sections:

- [2.1 Install the USB drivers for the DSTREAM-ST unit on Windows](#) on page 2-17.
- [2.2 Install the USB drivers for the DSTREAM-ST unit on Linux](#) on page 2-18.
- [2.3 Connect and power up the DSTREAM-ST unit](#) on page 2-19.
- [2.4 DSTREAM-ST unit boot sequence](#) on page 2-21.
- [2.5 Update the DSTREAM-ST firmware](#) on page 2-22.

2.1 Install the USB drivers for the DSTREAM-ST unit on Windows

To use the DSTREAM-ST unit with a USB connection, install the USB device drivers for your operating system. The USB drivers for the DSTREAM-ST unit are provided with Arm Development Studio.

The drivers for the DSTREAM-ST unit are optionally installed as part of the installation process for Arm Development Studio. If you have skipped the driver install process in Arm Development Studio, follow these steps to install them.

Prerequisites

Ensure you have:

- Installed Arm Development Studio. For more information, see the [Arm Development Studio Getting Started Guide](#).
- Administrative privileges on your PC.

Procedure

1. Using administrative privileges, run the `driver_install.bat` batch file that is available in `<Arm_Development_Studio_install_directory>\sw\driver_files` directory.
2. In the **Arm Development Studio Driver Installation Wizard**, click **Next** and follow the steps.

————— **Note** —————

During installation, you might receive warnings such as **Windows can't verify the publisher of this driver software**. You can safely ignore these warnings and continue with the installation.

3. After the drivers are installed, click **Finish**.

The USB drivers are now installed on your PC.

Related tasks

[2.3 Connect and power up the DSTREAM-ST unit on page 2-19](#)

2.2 Install the USB drivers for the DSTREAM-ST unit on Linux

To use the DSTREAM-ST unit with a USB connection, install the USB device drivers for your operating system. The USB drivers for the DSTREAM-ST unit are provided with Arm Development Studio.

The drivers for the DSTREAM-ST unit are optionally installed as part of the installation process for Arm Development Studio. If you have skipped the driver install process in Arm Development Studio, follow these steps to install them.

Prerequisites

Ensure you have:

- Installed Arm Development Studio. For more information, see the [Arm Development Studio Getting Started Guide](#).
- Administrative privileges on your PC.

Procedure

1. Using root privileges, run the `run_post_install_for_Arm_Development_Studio_vx.x.sh` script file that is available in the Arm Development Studio install directory. The `x.x` in the filename denotes the Arm Development Studio version that is installed on your PC.
2. To confirm the installation, enter `yes`.

The USB drivers are now installed on your PC.

Related tasks

[2.3 Connect and power up the DSTREAM-ST unit on page 2-19](#)

2.3 Connect and power up the DSTREAM-ST unit

This topic describes how to connect your DSTREAM-ST unit to your host PC and target hardware.

Prerequisites

- You must have *installed Arm Development Studio* to access the software drivers and debug hardware configuration utilities.
- Your target hardware must contain a debug interface supported by DSTREAM-ST. For a list of supported connectors, see *Target interface connectors* the Arm DSTREAM-ST System and Interface Design Reference Guide.
- To connect the DSTREAM-ST unit between your PC and the target hardware, you need:
 - The DSTREAM-ST unit.
 - The power adapter for the DSTREAM-ST unit and the mains cable for the power adapter that is appropriate for your region.
 - To connect the DSTREAM-ST unit to the PC or the network, you need either:
 - The USB cable, to connect the DSTREAM-ST unit directly to the PC using the USB 3.0 port.
 - The RJ-45 Ethernet cable, to connect the DSTREAM-ST unit to the network.
 - To connect the DSTREAM-ST unit to the target hardware, you need a target-compatible cable. For a list of provided cables, see *Arm® DSTREAM-ST box contents on page 1-11*.

Note

If the DSTREAM-ST unit or the target hardware are not properly earthed, potential differences can occur between them, causing unwanted pulses in the debug interface during connection. This can cause unwanted resets to occur.

Procedure

1. Connect the host PC to the DSTREAM-ST unit as shown in the following figure. Use either the USB port or a TCP/IP network connection, as required:

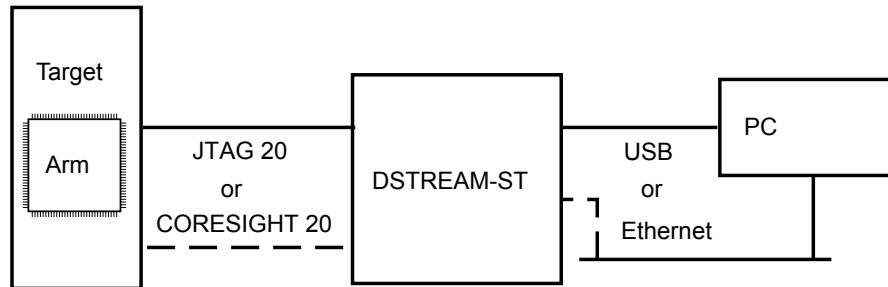


Figure 2-1 Connecting the host PC to the DSTREAM-ST unit.

- If you are connecting using the USB port, connect the DSTREAM-ST unit to the host PC using the supplied USB 3.0 cable.

Note

The USB drivers are provided with Arm Development Studio. For more information, see the USB driver installation topics: *Install the USB drivers for the DSTREAM-ST unit on Windows on page 2-17* or *Install the USB drivers for the DSTREAM-ST unit on Linux on page 2-18*.

- If you are connecting across an Ethernet network, connect the DSTREAM-ST unit to the local network using the supplied RJ-45 Ethernet cable.
2. Power up the DSTREAM-ST unit.

When you power up the DSTREAM-ST unit, it follows a boot sequence. The LEDs identify the progress of the boot sequence. For more information, see [DSTREAM-ST unit boot sequence on page 2-21](#).

————— **Note** —————

If you need to reset the DSTREAM-ST unit, press the reset button on the rear of the DSTREAM-ST unit.

3. If you are connecting across an Ethernet network, configure the Ethernet and internet protocol settings for your DSTREAM-ST unit. To configure these settings, use the [Debug Hardware Configure IP view](#) in Arm Development Studio.

You can also use the **Debug Hardware Configure IP** view to assign a name for the DSTREAM-ST unit. For more information, see the Arm Development Studio documentation for [Debug Hardware Configure IP view](#).

4. Connect the DSTREAM-ST unit to the target hardware. Use the appropriate cables and connector. Each connector, and the appropriate cable to use for that connector, is described in [Target interface connectors](#) in the Arm DSTREAM-ST System and Interface Design Reference Guide.

————— **Warning** —————

When connecting the DSTREAM-ST unit to target hardware, to avoid damaging the target or debug hardware, ensure that the debug and trace connector (or connectors) on the target use pinouts supported by the DSTREAM-ST unit. For supported pinout information, see the [Arm DSTREAM-ST System and Interface Design Reference Guide](#).

5. Power up the target hardware.

————— **Note** —————

When the DSTREAM-ST unit is powered-up, ensure that the air intake, on the top of the unit, is not blocked.

If the DSTREAM-ST unit overheats, it shuts down, all the LEDs turn off, and it remains in a safe state.

To re-initialize the DSTREAM-ST unit, press the reset button on the rear of the DSTREAM-ST unit.

Next Steps

- [Work with your DSTREAM-ST on page 3-23](#).

Related concepts

[1.2 Arm® DSTREAM-ST box contents on page 1-11](#)

[2.4 DSTREAM-ST unit boot sequence on page 2-21](#)

2.4 DSTREAM-ST unit boot sequence

When you power up the DSTREAM-ST unit, it goes through a boot sequence. The LEDs identify the progress of the boot sequence.

The DSTREAM-ST unit follows this boot sequence:

1. The DSTREAM logo illuminates blue.
2. The **FLASH** LED flashes as the flash memory is accessed.
3. The **STATUS** LED flashes green and then stays illuminated.
4. If the target is connected to the DSTREAM-ST unit and powered, the **TARGET** LED illuminates green.

The DSTREAM-ST unit is now ready for use.

2.5 Update the DSTREAM-ST firmware

The DSTREAM-ST firmware contains:

- The operating system that runs on the DSTREAM-ST unit.
- Templates that define how the debug hardware communicates with different target devices.
- Configuration files to load into any add-on probe units, such as the Parallel Trace probe.

Firmware updates are supplied with Arm Development Studio.

Prerequisites

- You must ensure that the current DSTREAM-ST firmware is at least the minimum version required by Arm Development Studio.
- You must ensure that Arm Development Studio is installed on the host PC.

————— **Note** —————

In Arm Development Studio, the latest firmware files are available at:
<Arm_Development_Studio_install_directory>/sw/debughw/firmware/.

Procedure

1. Open the *Debug Hardware Firmware Installer view*: from the main menu in Arm Development Studio, select **Window > Show View > Debug Hardware Firmware Installer**.
2. For the **Debug Hardware** field, click **Browse...** and **Select** your debug unit, then click **Connect**.
Result: You can view the currently installed firmware version, the auto-selected new firmware file, and the new firmware details.
3. Accept the auto-selected firmware update file, or browse and select a different firmware update file. Either:
 - To accept the auto-selected firmware update file, click **Install**.
 - To select a different firmware update file, in **Select Firmware Update File**, click **Browse**, select your firmware update file, and click **Open**. Click **Install**.

The firmware is now updated on the DSTREAM-ST unit.

Related tasks

[2.3 Connect and power up the DSTREAM-ST unit on page 2-19](#)

Chapter 3

Work with your DSTREAM-ST

Arm DSTREAM-ST is a comprehensive solution for the development and debug of complex Arm-based devices. This chapter explains some of the ways you can use DSTREAM-ST to work with your targets.

It contains the following sections:

- [3.1 Debug software for DSTREAM-ST on page 3-24.](#)
- [3.2 Hot-plug the debug cable on page 3-25.](#)

3.1 Debug software for DSTREAM-ST

The development software on your host PC provides the interface between your debugger and the DSTREAM-ST hardware that controls the target devices. The host software translates debugger commands, such as `start`, `stop`, and `download`, into control sequences for a particular processor.

Depending on your needs, there are several options:

Arm Development Studio

Arm Development Studio is a suite of tools for embedded C/C++ software development on any Arm-based device. It features an editor, compilers, debugger, and a system profiler. Combined with DSTREAM-ST, you get a comprehensive solution for developing and debugging complex systems.

For more information on debugging using Arm Development Studio, see the [documentation](#).

You can download the latest version of Arm Development Studio from the [Arm Development Studio downloads page](#).

Remote Device Debug Interface (RDDI)

Third-party debuggers, both for Arm and other processors, can connect to DSTREAM-ST using the RDDI interface.

You can use the RDDI interface to:

- Address each target device individually, without affecting other devices on the board. It uses this ability to create virtual connections for each of the JTAG devices on the board. Your debugger can attach to one of these virtual connections, and perform debugging operations with no knowledge of the other devices on the board.
- Enable multiple concurrent connections to debug multiprocessor systems. Depending on the system, you can also perform a synchronized start or stop of processors for debugging multiprocessor systems where the processors interact with each other.
- Perform simple tasks. For example, for production testing, a low-level RDDI connection to DSTREAM-ST can be used to gain access to the JTAG scan-chains inside the target device.

RDDI is freely available from within the Arm Development Studio installation. It is located `<install_directory>/Arm/Development Studio <version>/sw/debugger/RDDI`.

CoreSight Access Tool (CSAT)

The CoreSight Access Tool (CSAT) provides a scriptable low-level interface to the CoreSight Debug Access Port (DAP) on a target. CSAT is useful to perform initial bring-up tests before a debugger connection to the target is available.

CSAT provides low-level, command-line manipulation of devices connected to a DAP, for example, custom instrumentation hardware, at the memory or register level. CSAT removes the complexity, complication, or overhead of a debugger. CSAT can be used while a debugger is connected to an Arm processor. This enables the debugging of complex hardware-related problems.

For more information, see the [CoreSight Access Tool \(CSAT\) User Guide](#). In your Arm Development Studio installation, CSAT is located in `<install_directory>/Arm/Development Studio <version>/bin/csat.exe`.

Related tasks

[2.2 Install the USB drivers for the DSTREAM-ST unit on Linux on page 2-18](#)

[2.1 Install the USB drivers for the DSTREAM-ST unit on Windows on page 2-17](#)

3.2 Hot-plug the debug cable

At times, you might want to connect or disconnect the debug cable between the DSTREAM-ST unit and the target hardware, without powering off the target. This process is known as *hot-plugging*.

Arm recommends you avoid hot-plugging the debug cable, however, you can hot-plug without affecting operation of the target, if:

- The DSTREAM-ST unit is powered by its original power supply (which has an earthed-output).
- The target hardware is earthed either through its power supply or a separate earth connection.

Note

If the DSTREAM-ST unit or the target hardware are not properly earthed, potential differences can occur between them. During connection, potential differences can cause unwanted pulses in the debug interface. Pulses in the debug interface can cause unwanted resets to occur.

Hot-plugging: connecting

To connect a DSTREAM-ST unit to a target without affecting its current state, you must:

1. Power up the DSTREAM-ST unit. Allow the DSTREAM-ST unit to power up.
2. Connect the debug cable to the target.

Warning

When connecting the debug cable to the target system, to guard against ground-loop noise, ensure that one of the GND pins of the debug connector makes contact first. This contact ensures that the current target state is not affected. For pin details, see [Target interface connections](#) in the Arm DSTREAM-ST System and Interface Design Reference Guide.

Hot-plugging: disconnecting

When unplugging the debug connector, you must be aware that:

- If you are using a Return Test Clock (RTCK) system, make sure that no communication is taking place between the system and the DSTREAM-ST unit. Otherwise, if the DSTREAM-ST unit is waiting for a return clock, it might lock up.
- If you are not using an RTCK system, the debug software can handle this situation. However, you must perform a Test Access Port (TAP) reset using the debugger when you next connect the DSTREAM-ST unit into a target. For more information on TAP resets, see [Reset signals](#).

Related tasks

[2.3 Connect and power up the DSTREAM-ST unit on page 2-19](#)

Chapter 4

Troubleshooting

This chapter describes the steps that you need to take when your DSTREAM-ST unit does not function as expected.

For more information about troubleshooting and support for your DSTREAM-ST unit, see the [Troubleshooting FAQ](#) on the Arm Developer web site.

It contains the following sections:

- [4.1 DSTREAM-ST overheats on page 4-27.](#)
- [4.2 Restore a DSTREAM-ST unit on page 4-28.](#)
- [4.3 Remotely restart a DSTREAM-ST unit on page 4-29.](#)

4.1 DSTREAM-ST overheats

In a powered-up state, the air intake on the top of the DSTREAM-ST unit must remain clear.

Air intake is blocked

If the air intake on the top of the DSTREAM-ST unit becomes blocked and the DSTREAM-ST unit overheats, it shuts down, all the LEDs turn off, and it remains in a safe state.

Solution

To re-initialize the DSTREAM-ST unit, press the reset button on the rear of the unit.

4.2 Restore a DSTREAM-ST unit

If there are any problems with the DSTREAM-ST unit, you can restore it back to its factory settings using the recovery mode for the unit.

Prerequisites

Debug hardware drivers are provided with Arm Development Studio. You must have Arm Development Studio installed on your PC to access the drivers.

Procedure

1. Press and hold the reset button on the DSTREAM-ST unit for approximately 10 seconds.
2. When the STATUS LED flashes red, release the button.

DSTREAM-ST erases the existing firmware within its internal flash, and replaces it with the original factory installed version.

————— **Note** —————

When in recovery mode, debug and trace operations are not enabled.

After the recovery process is complete, DSTREAM-ST automatically reboots with its factory settings.

If a restore fails, [contact Arm support](#).

Next Steps

You must perform a firmware update to restore full functionality.

To update the firmware to the latest version, see [Update the DSTREAM-ST firmware on page 2-22](#).

4.3 Remotely restart a DSTREAM-ST unit

Describes how to remotely restart a DSTREAM-ST unit.

Remote restart is not supported by Arm® Development Studio

Arm Development Studio does not currently have a feature to remotely restart a DSTREAM-ST unit, however, a workaround is available.

Workaround

To restart your DSTREAM-ST unit, update the firmware. At the end of a firmware update, the DSTREAM-ST unit restarts.

To update the firmware of a DSTREAM-ST unit, either use:

- The Arm Development Studio GUI. For instructions, see [Update the DSTREAM-ST firmware on page 2-22](#).
- The `dbghw_batchupdater` utility on the command line. For instructions, see the [Updating multiple debug hardware units](#) topic in the Arm Development Studio User Guide.

Related tasks

[2.5 Update the DSTREAM-ST firmware on page 2-22](#)

Related information

[Updating multiple debug hardware units](#)